# Empirical Analysis of Factors Impacting Turnover Intention and Termination Intention among Manufacturing Workers

A Dissertation Presented for the
Doctor of Philosophy
Degree
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# Dedication

This dissertation is dedicated to my uncle, Dequan Li, my parents, Dechang Li and Yimei Zhi, my wife, Zhibo Tan, my son, Eric Minghao Li, and my daughter, Lydia Xinran Li, and the rest of my families and my friends, for their love, encouragement, and support.

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# Abstract

The purpose of this study was to investigate how turnover intention relates to job satisfaction, organizational commitment, leadership, job performance, work-family conflict among manufacturing workers in Tennessee, USA. A causal model was proposed and a turnover intention survey questionnaire was set up for manufacturing workers. The data was collected from a large manufacturing company in the East Tennessee area and was analyzed by SPSS and Structural Equation Modeling (SEM). The results of our study indicated that job satisfaction and organizational commitment have negatively and significantly affected the manufacturing worker's turnover intention while the work-family conflict has positively and significantly affected turnover intention. Although leadership indirectly influences turnover intention, its efforts on turnover intention were fully mediated by job satisfaction and organizational commitment. No effect of job performance on turnover intention was found in this study based on the manufacturing workers. The results suggested that policies for enhancing worker job satisfaction and organizational commitment, balancing work-family conflict, and improving leadership style should be proposed to reduce turnover intention. The relationship between factors and termination intention were also investigated in this study. Moreover, the results indicated that job performance and role conflict are the determinants of the manufacturing workers' termination intention. The results suggested that management needs to improve their worker's job performance and reduce their role conflict and then decrease the workers' termination intention.

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# CHAPTER 1: INTRODUCTION

## 1.1 Background

Employee turnover has been studied by management scholars or researchers for many decades, and it remains a critical issue of widespread interest for organizations and managers (Allen, Bryant, & Vardaman, 2010). Employee turnover refers to the workers who leave their organization and are replaced by new employees. It consists of voluntary turnovers, such as resignation, quitting or retirement, and involuntary turnovers, such as terminated, discharge, layoff or death. According to a recently-released survey, the voluntary turnover rate of all industries has increased from 9.1% in 2011 to 12.8% in 2016. The total turnover rate of all industry has increased from 14.4% in 2011 to 17.8% in 2016 (Bares, 2016).

Nowadays, high employee turnover has become a severe problem, not only in the United States, but also around the world due to it being costly and distructive to the organizational function (Kacmar et al., 2006; Mueller & Price, 1989). The direct organizational threat of employee turnover is the employee replacement costs involves recruitment, hiring and training of new employees (Allen, Bryant, & Vardaman, 2010). It was estimated to cost employers 30-250% of an employee's annual salary to hire a replacement if that employee leaves (Hester & Setzer, 2013). The costs associated with recruiting, selecting, and training new employees are always high, which makes the organization want to increase their skilled employees' commitment and improve their employees' retention. The second highest impacting negative effects of employee turnover are the disruption of the organization function, such as decreased performance and unfulfilled daily functions. Godwin (1997) reported that due to neglect of human factors, US companies have experienced an estimated 50 to 75% failure rate while implementing advanced manufacturing technologies. Lower knowledge base is the third highly impacting negative effect of employee turnover. In high turnover rate organizations, for instance, constant change of the workforce will lead to average years of experience and background of the employees is low. This will

cause a serious problem that employees are often less familiar with the jobs they perform and are less likely to work with customers effectively.

Thus, almost all organizations or companies wishes to retain skilled or loyal employees for the competitiveness and effectiveness of the organization in competitive society (Hausknecht, Rodda, & Howard, 2009). Organizational environments that make employees engagement and commitment to the organization and stay in the organization are inevitably important and should be strategically developed. The most important concern for the organization is understanding the employees' attitude toward their jobs, organization, as well as job-related, organization-related contents. Moreover, this is the essential method to study the employee's intention to leave or stay in the organization. Turnover intention refers to the probability that an employee will leave his or her organization within a specified period (Chao et al., 2015). Numerous studies conducted in the domains of organizational behavior identified that turnover intention was considered as one of the most important predictors of actual turnover behaviors and it could explain the majority of variances in turnover behaviors. Hence, examining turnover intention as a key variable in the field of management has practical meaning for the organization to reduce their employees' actual turnover.

The high employee turnover intention has become a critical problem in the development of the whole society. Thus, investigating factors which affect turnover intention is the critical issue for scholars and human resource managers. A large number of studies point out that employees' job satisfaction and organizational commitment are the two key determinants of turnover intention (Stumpf & Hartman, 1984; Tett & Meyer, 1993; Michael & Eric, 2013; Lu & Gursoy, 2016). Lu and Gursoy (Lu & Gursoy, 2016) conducted a survey of employees in a midscale chain hotel and revealed that job satisfaction had a significant impact on turnover intention. Based on a self-developed questionnaire, Michael and Eric (2013) indicated that there is also a significant negative relationship between organizational commitment and turnover intention. However, the turnover intention is always affected by various aspects, such as working conditions, work stress, income, among others. A survey implemented in China indicated that nearly half of the physicians intended to leave their organization

due to high work stress (Wang & Gao, 2014). As a consequence, it is urgent to investigate the factors that affect employee's turnover intention rather then taking measures to reduce the actual organizational turnover.

Many researchers suggested that turnover intention not be a new concept but simply 'old wine in new bottles' or 'composed of a potpourri of items', which represent previously researched concepts, such as job satisfaction and organizational commitment. Numerous previous studies only pay attention to the turnover intention in the relatively high turnover rate industries, such as finance, information industry, and healthcare or hospitality. However, with the development of the economy, the problem of employee turnover in the manufacturing industry is becoming more and more serious. Hancock et al. (2013) concluded that employee turnover significantly affects organizational performance in the manufacturing or transportation industries.

It is not enough to predict the actual turnover by the employees' turnover intention, a new concept, namely termination intention, will be introduced and discussed to examine the actual turnover. Compared to the voluntary turnover intention, it is the first time the involuntary termination intention is proposed. Termination intention refers to if an employee terminates their contract under which they are employed in circumstances in which they are entitled to terminate it without notice by reason of the employer's conduct. Although termination is involuntary, the termination intention is still the employee's idea not knowing who will be terminated by the organization and it will also have a correlation with an actual turnover.

Accordingly, by clarifying the key and new variables for actual turnover, this study examines all of the possible factors affecting turnover intention and investigates their relationship. Meanwhile, it examines all of the potential factors that affect termination intention and investigate their relationship. By doing so, this study provides a useful and practical insight into which specific aspects of turnover intention and termination intention need to be managed in order to control the actual turnover in the organization.

## 1.2 Problem Statement

The research on the turnover intention of manufacturing industry is still in the infant stages; there has been a lack of sufficient information about the antecedents for manufacturing workers' turnover intention and how these factors affect manufacturing worker's turnover intention. Furthermore, there has also existed a lack of information about the moderating effects of job satisfaction and organizational commitment to the relationships between the job-related or organization-related factors and employee turnover intentions. Previous work conducted by Zhu (Zhu, 2016) focused on the statistical method, such as time series analysis and survival analysis, to identify optimal models for effective employee turnover prediction. Several statistical models were proposed and efficiently predicted turnover in the large organizations. However, statistical models were not enough for employees' turnover forecasting since some important factors, such as job satisfaction, organizational commitment, and leadership, cannot be predicted by the statistical models. Thus, qualitative interview or quantitative survey methods can be more precisely designed for certain factors among different targeted groups.

Compared to the research of employee turnover intention, the research of employee termination intention is in the newborn stage, and there has been a lack of information. Because of the absence of this information, there have been missed opportunities for growth and development that could essentially affect the organizational performance and staffing in manufacturing organizations. Thus, it is very urgent to figure out the key determinants of manufacturing workers' turnover intention and termination intention, then develop strategies that will help to reduce the actual turnover in a manufacturing organization.

## 1.3 Purpose of the Study

A mixed employee-turnover model, which combined with statistical models and causal models, not only provides a more precise prediction of the employee's turnover, but also provides an empirical reference for the management of the organization. Thus, the purpose of the study was to generalize from a sample of manufacturing workers

to the population in the manufacturing industry so that inferences and recommendations can be made about the employee turnover intention and termination intention of this population, as well as to achieve the goal to decrease the actual organization turnover. As the extension of the Zhu's work (Zhu, 2016), the problem addressed in this study focuses on identifying factors that contribute to employee turnover intention in manufacturing organization in the USA. Reviewing the importance of individual factors has the potential to provide tools for management to find solutions to the problem. In order to make the issue of turnover more comprehensive, we introduced a new research term, namely termination intention, and investigate factors affect employee termination intention in a manufacturing organization.

## 1.4 Definition

- *Turnover intention*

Turnover intention is a measurement of whether a business' or organization's employees plan to leave their positions and it normally refers to an employee's intention to voluntarily change jobs or companies (Birgit, Nicole, & Tobias, 2007).

- *Termination intention*

Termination intention is a measurement of whether a business' or organization's employees intention that organization plans to remove employees from positions, it normally refer to an employee's intention that organization will terminate their jobs.

## 1.5 Overall Approach

Objectives are categorized into primary objectives, theoretical objectives, and empirical objectives. The following are the specific objectives for this research.

### 1.5.1 Primary Objectives

- *The primary objective of this study is to investigate how the antecedents, such as job satisfaction, organizational commitment, job performance, leadership, and work-family conflict, affect turnover intentions and to examine the relationship between exogenous variables, such as pay, work stress, job satisfaction and organizational commitment, respectively.*
- *Meanwhile, investigate the relationship between potential factors and termination intention of manufacturing workers.*

### 1.5.2 Theoretical Objectives

- *To conduct a review on factors which affect employees' turnover intentions.*
- *To conduct a review of the causal relationships between factors, such as job satisfaction, organizational commitment, job performance, leadership, work-family conflict, and employees' turnover intentions.*
- *To conduct a review of the potential factors which affect employees' termination intentions and their potential relationship.*

### 1.5.3 Empirical Objectives

- *To investigate the effect of employees' job satisfaction, organizational commitment, job performance, leadership and work-family conflict on employees' turnover intentions.*
- *To investigate the effect of exogenous variables and job satisfaction and organizational commitment, respectively.*
- *To investigate the effect of potential factors on employees' termination intentions.*
- *To investigate the differences in turnover intention and termination intention across manufacturing workers groups.*

## 1.6 Research Questions

The following research questions guided this study:

- *What are the factors that impact employees' turnover intention in manufacturing organizations? What is the relationship between the factors and turnover intention? Moreover, among these factors, which one has a more significant impact on employees' turnover intention?*
- *What are the factors that impact employees' termination intention in manufacturing organization? What is the relationship between the factors and termination intention? Moreover, among these factors, which one has a more significant impact on employees' termination intention?*
- *What are the differences in turnover intention and termination intention across manufacturing workers groups?*

By answering these questions, the organization managers can develop a better program to attract, retain, and hire key employees, as well as to achieve the goals of excellent product quality and consistent customer service, which is crucial to improve organizational profits and maintain organizational reputation.

## 1.7 Outline

This dissertation is divided into five chapters. Chapter one includes the introduction to the background, problem statement, the purpose of the study, objective of the study and research questions. Chapter two reviews the existing literature and journal articles related to turnover intention and termination intention, including job satisfaction, organizational commitment, leadership, job performance and work-family conflict, and the relationship among them. Chapter three outlines the research methodology, including research design, survey development, data collection, model development, hypothesis testing procedure, as well as group analysis method. Chapter four represents the results of the data analysis, measurement model analysis, structural model analysis, hypothesis testing, the discussion and implication. The statistical outcomes consist of descriptive statistics, reliability and validity of constructs, structural equation modeling, and group analysis results. Discussions and

implications of results will be presented at the end of this chapter. Chapter five will summarize this study, conclude the results of the study, and discuss the contributions and limitations along with future research following this study.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Overview

The primary purpose of this chapter is conducting a comprehensive literature study and to provide context for the research topic. There are several aspects presented by the literature review. First, describes the method used for literature review in our study. Second, provide the thoughts and ideas for doing the literature review, define the turnover, turnover intentions and termination intention of the employees in organizations, and investigate the factors which could affect employees' turnover intention and termination intention. Third, discuss the variables, such as job satisfaction, organizational commitment, leadership, job performance and work-family conflict for the turnover intention. Fourth, introduce the sub-variables for job satisfaction and organizational commitment. Finally, the relationship between factors, such as job satisfaction, organizational commitment, leadership, and turnover intention will be discussed.

## 2.2 Research Method for Literature Review

Systematic literature reviews were used to answer the first research questions (refer Chapter 1.6) about turnover intentions (Kitchenham et al., 2008). Kitchenham et al. (2008) suggested the systematic review should be guidelines as steps: identify resources; study selection; and data extraction.

### 2.2.1 Resources Searched

We use the following databases to search key words in the literature review: ScienceDirect; JSTOR; Scopus; Engineering Village; Google scholar; IEEE Explore; ProQuest Science Journals et al.

### 2.2.2 Search Terms

Depend on the title, abstracts and keywords offered by the search services, we used the following terms to search in the first stage:

('turnover intention' or 'intention to stay' or 'intention to leave' or 'intention to quit' or 'intention to withdraw' or 'intention for turnover' or 'leave intention' or 'quit intention' or 'stay intention' or 'withdrawal intention' or 'employee retention' or 'employees retention' or 'worker retention' or 'manager retention' or 'managers retention' or 'professional retention' or 'professionals retention')

AND ('manufacturing worker' or 'manufacturing employee' or 'manufacturing personnel' or 'manufacturing manager' or 'manufacturing professional' or 'manufacturing workforce' or 'manufacturing engineer' or 'manufacturing developer' or 'manufacturing programmer' or 'manufacturing analyst' or 'manufacturing designer' or 'manufacturing project manager')

### 2.2.3 Inclusion/Exclusion Criteria

The inclusion and exclusion criteria were performed in our literature review as follows.

Included researches

- *Articles published between 1980 and December 2017;*
- *Focused on turnover and retention;*
- *Articles published in manufacturing related journals;*
- *Directly answered our research question.*

Excluded researches

- *The languages not English;*
- *Focused on turnover intention of non-manufacturing;*
- *The presentation, review, interview or letters.*

### 2.2.4 Study Selection Process

As suggested by Kitchenham's (2008), we used the following selection process (McKnight, 2009) for the literature, and it is shown in Figure 2.1. There were seven databases (refer Section 2.2.1) and 29 key terms (refer Section 2.2.2) involved in the

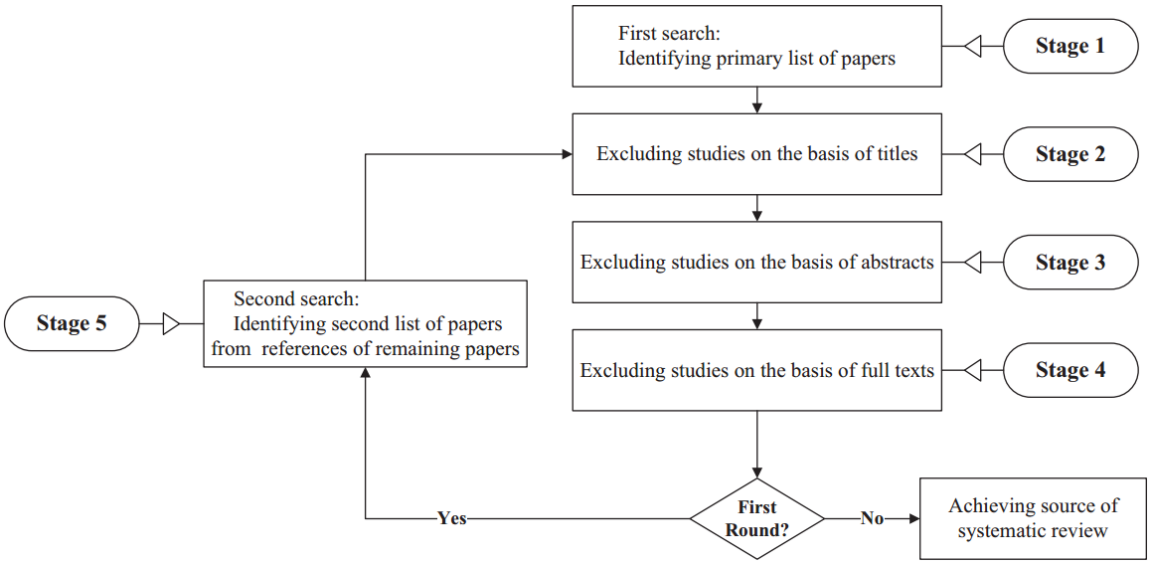



**Figure 2.1:** Stage of the study selection process (McKnight, 2009)

first search stage. We identified 3,759 primary articles in the first search stage. Next, we performed stages two through four twice and identified the final results.

***First Round***

As shown in Table 2.1, 3,759 articles were found in the database. Then stages two through four were carried out for the first round and the results are as followed: excluding 2,955 articles on the basis of titles, we got 804 articles in stage 2, excluding 577 articles on the basis of abstracts, we got 227 articles in stage 3, and excluding 185 articles on the basis of full texts ,we got 42 articles in stage 4.

***Second Round***

In the first round, we found 42 articles related to our studies and 1,486 articles as references found in 42 articles. The second round was carried out due to increasing the comprehensiveness of our research and the results are as followed: excluding 1,385 articles on the basis of titles, we got 101 articles in stage 2, excluding 77 articles on the basis of abstracts, we got 24 articles in stage 3, and excluding 8 articles on the basis of full texts, we got 16 articles in stage 4.

**Table 2.1:** Number of articles excluded in each iteration and stage

| Iteration | Initial number of articles | Stage of exclusion | Number of articles excluded | Number of articles remaining |
|---|---|---|---|---|
| 1 | 3,759 (from databases) | Title | 2,955 | 804 |
| | | Abstract | 577 | 227 |
| | | Full-text | 185 | 42 |
| 2 | 1,486 (references of articles found in iteration 1) | Title | 1,385 | 101 |
| | | Abstract | 77 | 24 |
| | | Full-text | 8 | 16 |
| Final number of articles | | | | 58 |

## 2.3 Turnover Intention

### 2.3.1 Definitions of Turnover Intention

Over the years, scholars and researchers have proposed numerous definitions to understand the turnover intention better. According to Tett and Meyer (1993), turnover intention is defined as a conscious and deliberate willfulness to leave the organization. Glissmeyer et al. (2008) suggested that the turnover intention should be defined as the mediating factor between attitudes affecting intent to quit and quitting an organization. Due to the purpose of this research, the turnover intention will be defined as the degree to which an organizational member believes he or she would terminate his or her position at some unspecified time in the future (Hinshaw, Smeltzer, & Atwood, 1987).

### 2.3.2 Theories and Models of Turnover Intention

All developed theories and models of turnover intention have the potential to contribute to a better understanding of this research and thus cannot be ignored in any review of the turnover intention literature. The researcher had to focus on theories and models of turnover intention that were related to this research because of the enormous quantity of research articles over the years. The main theories and models are as follows:

### *March and Simon's Model*

March and Simon (1958) developed the first formal turnover intention model, named the process model of turnover, which is one attaining most attention from researchers by far. According to the statement of March and Simon, perceived ease of movement, which means the evaluation of perceived substitution or opportunity and perceived desirability of movement, which is impacted for situation by job satisfaction, are the two major factors that lead to turnover decisions (Morrell, Loan, & Wilkinson, 2001).

Although March and Simon's model has been developed for several years, many limitations still exist. First, a static instead of a procedural view of turnover is present in their models. Second, many important factors that impact the turnover process, such as organizational commitment and leadership, were not present.

### *Mobley Intermediate Linkages Model*

Based on previous studies, such as March and Simon's theory (1958) about the ease and desirability of movement and Porter and Steer's theory (1974) of met-expectation and intent to quit, Mobley (1977) put forward a heuristic model instead of a descriptive turnover model, which was an intermediate linkages model. Mobley first developed an extensive explanation of the psychological turnover. Mobley's turnover model considered the interference of external factors and the relationship among various factors, provided the basis for quantitative analysis of turnover. Nevertheless, this model failed to analyse the effectiveness and costs of turnover. Furthermore, Hom and Griffeth, who put forward the alternative linkages model of turnover as one of the theoretical alternatives, argued that Mobley's turnover model has a lack of empirical evidence to prove the conceptual difference between his explanatory structures (Hom & Griffeth, 1991).

### *Price and Mueller's model*

Price (1977) put forward a causal model of turnover, which states that social integration in the organization is a prime factor influencing turnover decisions. Price and Mueller's model developed from Price's causal model of turnover, analyzes the causal determinants of turnover from 1986 (Morrell et al., 2001). Price and Mueller's

model, compared to the previous theory, provided a comprehensive list of predictors, such as normal factors like job satisfaction and organizational commitment. Price and Mueller's model consists of exogenous variables, that independent variable which affects a model but is not affected by it and intervening endogenous variables, those that intervene between the exogenous variables and turnover or its proxy. Exogenous variables are subdivided into three major parts: environmental variables (which defined by Price are those such as opportunity and kinship responsibilities), individual variables (such as general training and professionalism et al.) and structural variables (such as routinization and pay et al.), and it is illustrated in Figure 2.2.

With the development of the society, the Price and Mueller's causal model later made some changes based on their subsequent research. For example, job hazards and job stress were added to the exogenous variables, 'centralization' became 'autonomy' and 'intent to leave' became 'intent to stay' et al. (Kim, Price, & Mueller, 1996). These changes enhanced their model and more accurately described the variables in the Price and Mueller's causal model. Nevertheless, some limitations also showed in this model. First, the turnover process cannot be explained adequately because of the model lack of fundamental theory of behavior or action. Second, the interaction effects regarding the determinants of turnover also failed to investigate (Morrell et al., 2001).

## 2.4 Factors Affecting Turnover Intention

The following work has identified the factors as predictors of turnover intention after defining it. Based on the literature review, predictors of the turnover intention, such as job satisfaction and organizational commitment, are listed in Table 2.2, correlation matrix for the turnover intention and variables. According to the Pearson correlation coefficient of the different factors with turnover intention, we can conclude that the higher coefficient will lead to the higher linear correlation between two variables.

The previous part provided the different types of employees' turnover, in this part we will state some of the acknowledged causes of turnover and retention in organizations. It is apparent that employee's turnover is costly for an organization, thus, reducing employee turnover rates is essential for human resource and

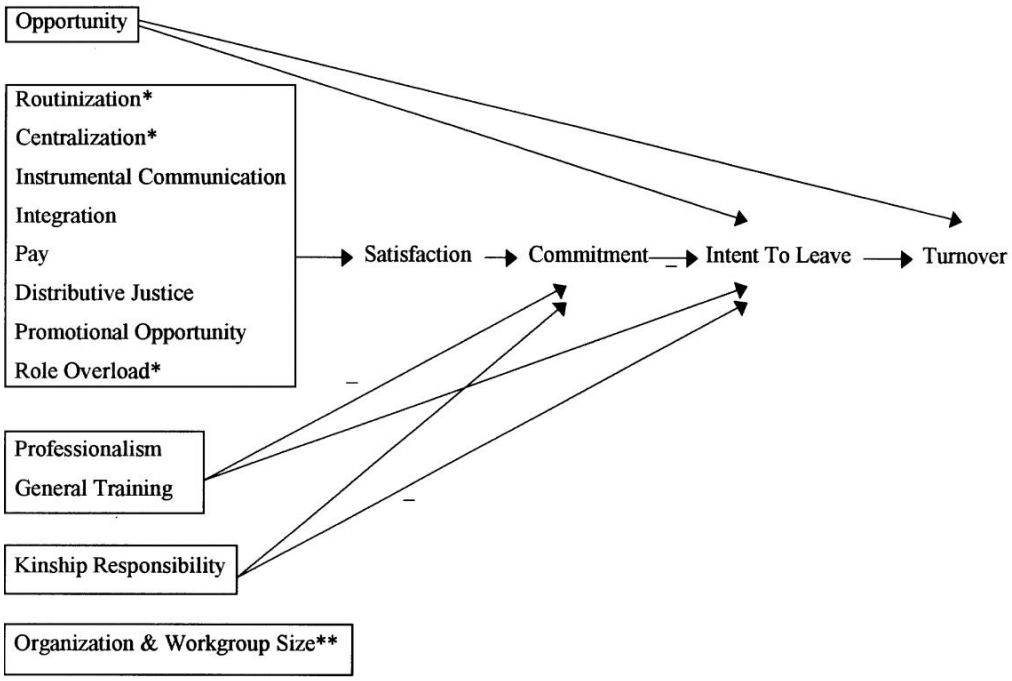



**Figure 2.2:** Price and Mueller's Causal Model

management in the organization. In order to reduce employee turnover rates and save money for the organization, the primary goal is to find out the typical reasons employees decide to leave the organization. Based on the literature review, a list of acknowledged causes of turnover and retention in organizations is present as Table 2.2 and Table 2.3.

### 2.4.1 Job Satisfaction

Job satisfaction, as an important concept and phenomenon, has been widely discussed, researched and described. Understanding the concept of job satisfaction is necessary for examining how the types of job satisfaction relate to other variables. This section of the literature review covers relevant studies surrounding the concept of job satisfaction. Topics covered in this section include definition, theories, and factors of job satisfaction.

Providing a definition is the first step when conceptualizing job satisfaction. As the common factor of employee's attitudes directed to their job and its environment,

**Table 2.2:** Correlation matrix for the turnover intention and variables

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. Job Satisfaction | 1 | | | | |
| 2. Organizational Commitment | .717*** (Michael, 2013)<br>.63** (Ho, 2009)<br>.326~.69*** (Zhu, 2012)<br>.70** (Charles,2001) | 1 | | | |
| 3. Job Performance | .42** (Spector, 1988)<br>.46*** (Seers, 1989)<br>.54** (Slocum, 1970) | | 1 | | |
| 4. Leadership | .457*** (Ng, 2015)<br>.28**&.33** (Baeriswyl, 2016)<br>.004&.057 (Douglas, 1999) | .546***&.604*** (Douglas, 1999)<br>.29** (Zhu, 2012) | | 1 | |
| 5. Work-Family Conflict | -.732** (Ng, 2015)<br>-.797***&-.874*** (Arunika, 2015)<br>-.22** (Baeriswyl, 2016) | | | | 1 |
| 6. Turnover Intention | -.619*** (Michael, 2013)<br>-.55** (Hancock, 2013)<br>-.14*** (Damien, 2007)<br>-.51** (Eun, 2014)<br>-.517* (Aieman, 2008) | -.652*** (Michael, 2013)<br>-.715** (Ponnu, 2010)<br>-.628* (Aieman, 2008)<br>-.63** (Baek, 2010)<br>-.53** (Charles, 2001) | -.14*** (Damien, 2007)<br>-.01** (Jay, 2015)<br>-.28* (Fernando, 2006) | -.18** (Jay, 2015)<br>-.21** (Zhu, 2012)<br>-.36** (Sonet, 2010)<br>-.196*~-.339* (Long, 2013)<br>-.31** (Fernando, 2006) | .419** & .408** (Ari, 2015)<br>.34*** (Byeung, 2016)<br>.18~.25** (Scott, 2003) |

* Correlations were significant at $p < .05$
** Correlations were significant at $p < .01$
*** Correlations were significant at $p < .001$

**Table 2.3:** Correlation matrix for job satisfaction, organizational commitment and sub-variables

| | 1. Pay | 2. Team-worker | 3. Autonomy | 4. Work Stress | 5. Workload | 6. Promotion Opportunity |
|---|---|---|---|---|---|---|
| Job Satisfaction | .37*** (Damien, 2007)<br>.41~.61*** (Parbudyal, 2010) | .382*** (Ng, 2015)<br>.126*&.084* (Douglas, 1999) | .442*** (Douglas, 1999)<br>.359* (Aieman, 2008) | -.891*** (Arunika, 2015)<br>-.52** (Ho, 2009) | -.44~-.64 (Muhammad, 2017)<br>-.815*** (Arunika, 2015)<br>-.126*&-.228*** (Douglas, 1999)<br>.042 (Aieman, 2008) | .785** (Zhu, 2012) |
| Organizational Commitment | | .172**&.113* (Douglas, 1999)<br>.57** (Chew, 2005) | .03 (Douglas, 1999)<br>.299* (Aieman, 2008) | -.57** (Chew, 2005)<br>-.79** (Ho, 2009) | .006&-.016 (Douglas, 1999)<br>.047 (Aieman, 2008) | |

**Table 2.3 Continued:** Correlation matrix for job satisfaction, organizational commitment and sub-variables

| | 7. Developing or Training | 8. Routinization | 9. Role Ambiguity | 10. Role Conflict | 11. Working Environment | 12. Absenteeism |
|---|---|---|---|---|---|---|
| Job Satisfaction | .80*** (Eun, 2014) | .51** (Ho, 2009) | -.42*** (Damien ,2007)<br>-.116*&-.045 (Douglas, 1999) | -.44*** (Damien, 2007)<br>.089&.044 (Douglas, 1999)<br>.341* (Aieman, 2008) | | -.178* (Ntisa, 2015) |
| Organizational Commitment | .52** (Chew, 2005) | -.236*** (Douglas, 1999)<br>.63** (Ho, 2009) | .006&.094 (Douglas, 1999) | .118&.068* (Douglas, 1999)<br>-.372* (Aieman, 2008) | .66** (Chew, 2005) | |

* Correlations were significant at $p < .05$
** Correlations were significant at $p < .01$
*** Correlations were significant at $p < .001$

job satisfaction has numerous scholarly and complementary definitions (Masemola, 2011). Job satisfaction is the main driver of many organizational behaviors, such as organizational commitment and turnover intention.

According to Smit, Kendall, and Hulin (1969), job satisfaction is persistent feelings that are thought to be associated with perceived differences between what is expected and what is experienced in relation to the alternatives available in a given situation. Spector, quoted by (Spector, 1997), defined job satisfaction as 'individuals' total feelings about their job and the attitudes they have towards various aspects or facets of their job, as well as an attitude and perception that could consequently influence the degree of fit between the individual and the organization. Hirschfeld (Hirschfeld, 2000) defines job satisfaction as an effective or emotional reaction to the job, resulting from the incumbent's comparison of actual outcomes with the required outcomes.

Although many job satisfaction definitions were proposed by researchers, there is still no final definition of what a job represents. Moreover, the critical factor of job satisfaction is the employee's motion reaction to their working environment. Yousef (2000) mentions that there are several variables relating to the significant associations of job satisfaction. For instance, job satisfaction has a positive association with organizational commitment (Fletcher & Williams, 1996), work performance (Babin & Boles, 1996), but it also has a negative association with the turnover intention (Egan, Yang, & Bartlett, 2004).

#### 2.4.1.1 Theories and Models of Job Satisfaction

There are many theories and models of job satisfaction that have been developed by researchers, and these theories or models are as follows.

Maslow (1943) first formulated his theory of motivation in his 1943 paper '*A Theory of Human Motivation*', in which it was presented that motivation is a function of five sets of needs, such as physiological, safety, love/belonging, esteem and self-actualization. In 1959, Herzberg (1959) introduced a more popular model of motivation, namely Herzberg's two-factor theory. The theory stated that a human being has two basic needs: the need to avoid pain and the need to grow psychologically.

It was also proposed that there are two certain set factors in the workplace that an organization can adjust to influence motivation, one leads to an employee's job satisfaction and the other one leads to an employee's dissatisfaction. Bull (2005) described that the concept of job satisfaction is very complicated and hard to understand unless variables that motivate an employee on the job are known and understood. It is a very complex summation of distinct job variables that know if the employees are satisfied or dissatisfied with their jobs (Robbins, 1989). Many researchers proposed a summary of factors as predictors that have been established to contribute significantly to employees' job satisfaction (Locke, 1976; Volkwein & Zhou, 2003; Rose, 2003).

There are many factors, such as job strain, job satisfaction, organizational commitment, and income, that could affect the turnover intention in various aspects. However, job satisfaction was one of the earliest proposed and frequently mentioned influencing factors and has been considered as one of the most important factors in predicting turnover intention (Jamal, 1997). According to Bright (2008), job satisfaction and turnover intentions are reflections of the outlook, which is influenced by the degree to which employees' salient needs are satisfied by their work, that employees have about their employment.

A negative association between job satisfaction and turnover intention has been consistently reported by researchers. By investigating 480 Extension agents with less than six years of employment, representing 12 states in the southern United States, Michael and Eric (2013) stated that there is a strong and negative relationship ($r$ = -.619, $p$ = .000) between job satisfaction and intent to quit. Lu and Gursoy (2016) suggested that a significant negative relationship between job satisfaction and turnover intention ($r$ = -.55, $p$ < .01) based on their investigation results which used data collected from employees of a midscale chain hotel.

#### 2.4.1.2 Factors Affecting Job Satisfaction

Whether an employee is satisfied or dissatisfied with their jobs is always very complex, and it is not a simple sum of the job-related factors (Robbins, 1989). Based

on the systematic literature review, we proposed the following variables as predictors of job satisfaction of workers within manufacturing organizations.

### *Leadership*

The significant impact between leadership and job satisfaction has been proved in many professions, such as education (Rossmiller, 1992; Silins & Mulford, 2002; Blogler, 2002), nursing (Ramey, 2002) and banking or finance sectors (Walumbwa et al., 2004).

In the studies undertaken by Rossmiller (1992) in the education field, it was found that an employee's perception of principals' transformational leadership skills has a significant positive effect on their job satisfaction. Compared to those are not transformative in their leadership styles, the rules of the practicing transformational leadership have a greater possibility to enhance and foster job satisfaction among employees. Similarly, Silins & Mulford (2002) also concluded that there is a significant positive relationship between transformational leadership skills and an employee's job satisfaction and Blogler (2002) provided that the shortage of leadership skills have negatively affected an employee's job satisfaction.

Further studies, with the same goal to investigate the relationship between job satisfaction and leadership, have been conducted not only in the education profession but also in other professions, such as nursing and banking or finance sectors. The relationship between leadership styles of nurse managers and job satisfaction of registered nurses was examined by Ramey (2002) in Appliachia, and the findings revealed that the transformational leadership styles had a significant positive relationship with job satisfaction between nurse managers and registered nurses. Similar results were found in the managers and employees in the banking and finance sectors. Raimonda and Modesta (2016) investigated the relationship between different styles of leadership and job satisfaction by using 72 faculty members and ten supervisors from Lithuanian public and private universities. The results revealed that the controlling autocrat leadership style ($r = .626$, $p < .01$) had the smallest positive and significant impact on job satisfaction, while the servant leadership style ($r = .731$, $p < .01$) had the greatest impact. McCutcheon et al. (2009) conducted a study of more

than 700 nurses from seven Canadian teaching and community hospitals and found positive effects of transformational leadership behaviors among nurse managers on job satisfaction.

### *Pay/Pay Satisfaction*

Pay, commonly refers to pay satisfaction, is recognized as one of the top causes of employee turnover or retention in organizations. Pay has been investigated by several researchers who have tried to investigate the relationship between pay satisfaction and job satisfaction (Spector, 1985). Igbaria et al. (1994) examine the determinants of intent to stay with their organization among 112 IS employees in South Africa and indicated that there is a positive relationship between pay and intent to stay ($r$ = .17, $p$ = .05). Similar research done by Tutuncu et al. (2007), indicated that there is also a strong and positive relationship between pay and job satisfaction ($r$ = .88, $p$ = .000). After examining intrinsic motivation's influence on information technology (IT) workers' attitudes and intentions, Thatcher et al. (2006) concluded that pay satisfaction was a significant positive antecedents to job satisfaction and effective organizational commitment (as a result of employee turnover).

### *Promotion*

Promotion or promotion opportunities, which is an incentives that looks like pay, are also found to influence turnover decisions. Promotability, i.e., the likelihood of promotion (Baroudi & Igbaria, 1995), has been found to influence information technology turnover decisions by increasing jobs by 6% of the studies. Steven and John (2008) conducted a study to investigate the relationship between job satisfaction facets and turnover intention of software developers, and they concluded that turnover intention showed a significant negative correlation to promotion ($r$ = -.463, $p$ < .001).

### *Working environment*

The factor of working environment played an essential role in the research of employee turnover, especially in hospital and manufacturing companies. There are a growing number of research papers on the influence of the working environment on

turnover, and on quitting in particular. Moreover, the role that specific attributes of the working environment have on influencing employees' quitting behavior has received increasing attention in academic literature (Boxall et al., 2003; Scott et al., 2003; Simons & Jankowski, 2008).

### *Workload*

Workload refers to the amount of work that is assigned or allocated to an employee, usually within a specific period. The researchers have proposed some evidence that workload positively impact employee's turnover intention (Diane, 2007). Marina (2012) considered that in the competitive environment, workload originating from role overload and personal work was extended from single items to multiple duties. Moreover, over-workload would cause an employee's low emotion, delaying work, low team atmosphere, and even obeying rules to affect organizational performance and turnover intentions further. Glaser et al. (1999) used stress as an arbitrator role to investigate the relationship between workload and turnover intentions, and then he found that there is a significant positive relationship between workload, work stress, and turnover intention.

### *Team-worker*

Team-worker refers to a person with whom someone is working, usually on the same work and the same level in the organization hierarchy. Moreover, team-worker social support defined as colleagues' willingness to help one another, such as friendly, cooperative, respectful and supportive, in performing daily tasks and handling upsetting workplace situations (Ibrahim, 2014). Arora et al. (2010) stated that team-worker support is expressed as a measure of belief in the willingness of colleagues to help carry out workplace duties. Zhou et al. (2001) believed that team-worker support provides an opportunity for employees to share specialist knowledge as well as support and encouragement.

Researchers have been shown that relationship with team-workers would affect employees' intention to leave organizations (Eisenberger, 2002). Eisenberger

investigated 493 retail sales employees and concluded that team-workers' support should be negatively related to turnover intention.

### *Absenteeism*

Absenteeism has been researching for many years due to its perennial cost to organizations, and it is also a significant cause of employee's intention to leave the organization (Johns, 2010). It is reasonable to link attitudes, such as absenteeism and turnover intention. For example, higher education institutions in China or South Africa have been subjected to a series of mergers in recent decades, which has resulted in significant changes in job and therefore increased pressure on the college employees. Among the negative consequences was the increased absenteeism rate followed by turnover (Mostert, 2008).

In the meta-analysis, Mitra et al. (1992) also found a corrected average correlation of .330 between absence and turnover, which means employees who quit their jobs were more likely to have had higher records of absenteeism just before leaving the organization than the employees who did not quit. Albion et al. (2008) investigate 119 female nurses working in nursing facilities in northern Israel and also confirm that absenteeism is a cause of an employee's intention to leave the organization.

### *Autonomy*

Job autonomy refers to a job allowing the employee schedule work or make decision independantly or freely, has provided that it is negatively related to turnover intention (McKnight, 2009). McKnight (2009) concluded that perceived job characteristics, such as job significance and task autonomy, tend to decrease IT personnel turnover intention. Lori (2007) points out that job autonomy was negatively associated with the turnover intention ($r$ = -.075, $p$ < .001), in other words, low autonomy was more likely contemplating quitting.

Despite these conclusive findings, however, the same meta-analysis suggests that a null relationship exists between perceived job autonomy and turnover intention (Griffeth, 2000). Thus, they concluded that job autonomy is less influential in reducing employee turnover intention directly, and in turn, actual turnover.

### 2.4.2 Organizational Commitment

As another important predictor of the turnover intention, organizational commitment has also been widely researched and measured in many different ways. So, what are organizational commitment and its characteristics or determinants? These questions have generated a lot of arguments and disagreement among many researchers and scholars (Meyer & Herscovitch, 2001; Bentein & Vandenberg, 2005; Solinger, 2008). 'Be loyal to the company, and the company will be loyal to you, a credo emblematic of the bygone era.' The complexity involved in an employee's attitude toward and behavior within their employing organization was obviously understated by Mowday, Porter, and Steers (1982). Thus, the assessment of the congruence between an employee's values and beliefs and those of the organization is essential to measuring the organizational commitment (Swailes, 2002).

The concept of organizational commitment was first proposed by Becker (1960) around the beginning of the 1960s, and the studies developed by Allen and Meyer (1990) with three-component theory in the 1990s. Nowadays, the research of organizational commitment still focused by many researchers and scholars, and many theories and models were proposed, such as the Cohen's Two-dimension theory (Cohen, 1988) and Somers' Combined theory (Somers, 2009). Although various definitions for organizational commitment has been proposed, there is currently no set definition of organizational commitment, and thus it remains one of the most challenging and intriguing concepts in the fields of organizational management, and Human Resource Management (Cohen, 1988; Cooper-Hakim & Viswesvaran, 2005).

#### 2.4.2.1 Theories and Models of Organizational Commitment

In order to have a better understanding of the organizational commitment, all developed theories and models cannot be ignored in any review of the organizational commitment literature (Weibo & Kaur, 2010). After the enormous quantity of literature review, the researcher listed several typical theories and models of organizational commitment that were pertinent to the study. The theories or models of organizational commitment are as follows:

One of the earliest theories to examine the conceptual framework of organizational commitment is a side-bet theory, which was proposed by Becker (1960) around the beginning of the 1960s. The side-bet theory has a profound influence on future researchers about organizational commitment even if it is generally not considered a stand-alone theory of organizational commitment today. According to Becker (1960), commitment as a tendency to engage in 'consistent lines of activity,' and argued that it develops as a 'person finds that his involvement in social organization has, in effect, made side bets for him and thus constrained his future.'

Although side-bet may take various forms, Becker suggested that it fall into the following several broad categories: generalized cultural expectations about responsible behavior, self-presentation concerns, impersonal bureaucratic arrangements, individual adjustments to social positions, and non-work concerns (Powell & Meyer 2004). Becker (1960) did not suggest that the categories of side-bets were necessarily exhaustive even if he described these five categories in some detail. Moreover, he proposed that side-bets could combine in complex ways to augment the cost associated with leaving the organization and thereby increase commitment.

Based on the observation that there were similarities and differences in existing unidimensional conceptualizations of organizational commitment, Allen and Meyer (1990) proposed the three-component model, which has become the dominant model for the study of workplace commitment. Drawing on the early works in the field, Meyer and Allen (1993) proposed that organizational commitment contain three general constructs, namely affective commitment, continuous commitment, and normative commitment.

### *Affective Commitment*

Meyer et al. (Meyer and Allen, 1984) defined the affective commitment as 'positive feelings of identification with, attachment to and involvement in the work of the organization.' Shore and Tetrick (1991) proposed that this could cause a positive interaction due to similar values between the employees and the organizations. Kimura (2013) proposed that because of the relationship between perceptions of organizational politics and affective commitment, interactive moderating effects of

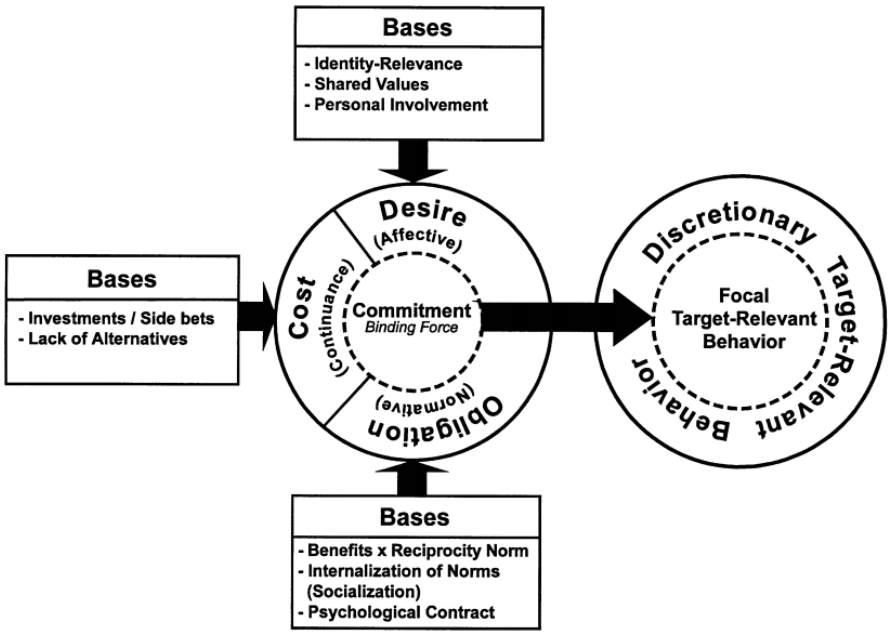



**Figure 2.3:** Allen and Meyer's three-component model of workplace commitment

political skill and quality of leader-member exchange (LMX) was found. Moreover, they also stated that the high political skill and quality of LMX would cause weakening of the relationship of politics perception affective commitment.

Employees may commit to their employing organization feeling strongly about retaining their position not only because they need the occupation, but also because they are satisfied, and they feel the sense of belonging to the organization (Meyer et al., 1993). Mguqulwa (2008) also stated that employees perceive their employment relationship to be in harmony with the values and goals of the organization, so they want to stay at the organization. Employees feel emotionally linked, identified, and involved with the organization and employees do not intend on leaving the organization (Balassiano & Salles, 2012).

According to the Meyer and Allen (1997), there are many factors that would influence affective commitment, such as equity, dependability, role clarity, goal difficulty, feedback, job challenge, personal importance, participation, peer cohesion, and receptiveness by management.

### *Continuous Commitment*

Continuous commitment is the commitment defined as 'the extents to which employees feel committed to their organizations by virtue of the cost that they feel are associated with leaving the organization' (Meyer & Allen, 1984). McGee et al. (1987), in their factor analysis, indicated that continuance commitment should be studied as a two-dimensional construct. The first dimensional represents the employees' belief that they have few alternatives (low-alternative) in the decision to remain in one's organization. While the second dimensional represents the employees belief that a big sacrifice (high-sacrifice) would result from living the organization, and was termed personal sacrifices. The two-dimensional structure of the continuance commitment construct has been supported by many research findings (Hackett & Bycio 1994; Somers, 1993).

Based on the perceptions of beneficial economic exchanges and the perception of low job alternatives, Taing et al. (2011) investigated with 232 part-time and 244 full-time employees regarding continuance commitment. Moreover, the results suggested that continuance commitment has a positive relationship with work performance based on economic exchanges while having a negative relationship with work performance based on low job alternatives. Thus, he concluded that continuance commitment based on economic exchanges and low job alternatives should be promoted and restrained, respectively.

### *Normative Commitment*

According to Allen and Meyer (1996), normative commitment is defined as 'a sense of obligation to the organization.' Normative commitment refers to the employees with a strong sense of obligation that will remain with an organization, and they believe that it is the 'right and moral' thing to stay in the organization (Balassiano & Salles, 2012). By using the term 'moral commitment,' Jaros et al. (1993) stated that this is the extent to which an employee is attached psychologically to an employing organization through the internalization of its values, goals, and mission.

Wiener and Gechman (1977) indicated the development of a normative commitment to the organization is due to the collection of pressures that employees

feel during their early socialization from family and culture and during their socialization as newcomers to the organization. Normative commitment arises when an employee feels loyal to an organization or feels the need to reciprocate after receiving some benefits from an organization (Gelaidan & Ahmad, 2013). McDonald et al. (2000) also proposed that an employee has a strong normative obligation to repay the benefit in some way if he/she gets some benefits from an organization. For instance, an employee feels obliged to repay a benefit by remaining a member of the organization if this employee received funds from the organization to complete a university degree.

Organizational commitment has become an important topic for organizational research because it is conceived as a crucial variable in the literature associated with turnover intention (Somers, 1993; Omar, 2012). Based on some research findings, it is not difficult to confirm that there is a significant negative relationship between organizational commitment and turnover intentions. Using a sample of 172, collected from employees across organizations in the country of Malaysia, Ponnu et al. (2010) stated that employee's organizational commitment has a significant negative impact on their turnover intention ($r$ = -.715, $p$ < .01). The similar research done by Michael (2013), indicated that employee's organizational commitment strongly and negatively impacts their intent to quit ($r$ = -.652, $p$ = .000). Hence, employees with a stronger commitment to the organization will usually exhibit lower turnover intentions.

#### 2.4.2.2 Factors Affecting Organizational Commitment

***Job Satisfaction***

The relationship between job satisfaction and organizational commitment is another popular topic which gets a great deal of attention from researchers, and many empirical research results were carried out. However, the causal connections between these two concepts are not reaching an agreement (Rayton, 2006). Koslowsky et al. (1991) stated that there is no evidence to support a causal relationship even if a high correlation exists between job satisfaction and organizational commitment. Although there is controversy surrounding the relationship between job satisfaction and organizational commitment, some researchers described that job satisfaction is an

outcome of organizational commitment (Bateman & Strasser, 1984; Currivan, 1999; Yucel, 2012). Porter et al. (1974) even point out that organizational commitment is more stable while formed more slowly than job satisfaction, and job satisfaction, being a component of organizational commitment, is considered as a global link between an individual and an organization.

There is published evidence that a strong positive correlation between job satisfaction and organizational commitment exists (Kotze & Roodt, 2005; Gregson, 1992; Quarles, 1994). Based on the results of the analysis of two data, Gregson (1992) concluded that a significant, positive relationship exists between job satisfaction and organizational commitment which should both be included in models that predict turnover intention. Thus, employees with higher job satisfaction tend to have higher organizational commitment.

***Leadership***

Mowday et al. (1982) pointed out that leadership is considered an essential determinant factor of organizational commitment many years ago. Now many research results have shown that transformational leadership has had a significant positive association with organizational commitment in several different organizational settings and cultures (Koh, Steers, & Terborg, 1995; Lowe et al., 1996; Dumdum et al., 2002; Walumbwa & Lawler, 2003; Bono & Judge, 2003). Dale and Fox (Dale & Fox, 2008) conducted a study that encompassed 147 full-time employees from a large manufacturing corporation located in the Midwest. The results indicated that the leader initiating ($\beta = .17$, $p < .05$) and leader consideration ($\beta = .42$, $p < .05$) styles were positively related to organizational commitment.

Different researchers have a different point of view when it comes to how transformational leaders can influence followers' organizational commitment. Jermier and Berkes (1979) suggested that leaders who encourage employees in decision-making can increase organizational commitment. Walumbwa and Lawler (2003) stated that the higher levels of organizational commitment could be realized when transformational leaders motivate their employees to get more involved in their

work and encourage employees to seek new ways to approach problems and challenges.

### 2.4.3 Leadership

Leadership is one of the critical and essential factors for organizational success since an employee's intentions to stay in a job is directly impacted by their relationship with their supervisor (Cowden et al., 2011). Leadership is defined as 'a process whereby an individual influences a group of individuals to achieve a common goal' (Northouse, 2011). The theory of leadership suggests that leaders enhance followers' engagement by strengthening the identification of the group members with each other and with the organization, and by promoting hope, trust, optimism, and positive emotions. Hence, the ability of an organization's leadership would contribute to a positive employment relationship.

There are many different leadership styles that have been identified by previous researches, such as transformational leadership (Burns, 1978), transactional leadership (Dessler & Starke, 2004), and laissez-faire (delegate) leadership (Luthans, 2005). Autocratic leadership is a leadership style that involves absolute, authoritarian control over a group. Autocratic leaders typically make decisions based on their ideas and judgments, so employees rarely have an opportunity to make suggestions or give advice (Colquitt et al., 2009). The right kind of leadership is crucial to create and sustain a stable and effective workforce for an organization.

Transformational leadership was first introduced by Burns (1978) in his descriptive research on political leaders, and this term became one of the most popular approaches to leadership that has been focused on by many researchers since the early 1980s (Northouse, 2010). Transformational leadership is defined as 'Leaders who are able to change the beliefs and attitudes of subordinates and inspire them to pursue their own interests for the well being of the organization' (Burns, 1978). Thus, transformational leadership is a process in which "leaders and followers help each other to advance to a higher level of morale and motivation". Transformational leaders normally focus on employees' individual strengths and weaknesses, and on enhancing their capabilities to achieve organizational goals (Bass & Steidlmeier, 2006).

Transformational leadership is a primary factor that can affect employees' turnover intentions, and the relationship between the two has been explored by some researchers, such as Bass (1990), Bycio et al. (1995) and Martin and Epitropaki (2001). Bass (1990) stated that leadership could highly affect turnover intention and showed that transformational leadership is the critical variable in reducing and mitigating turnover intentions. In the studies undertaken by Bycio et al. (1995) in the nursing profession, it was found that higher degrees of transformational leadership are associated with lower intentions to leave. Based on the study among employees of several commercial and profit-oriented-based businesses, Martin and Epitropaki (2001) discovered that transformational leadership has a significant negative effect on turnover intentions.

Transactional leadership is defined as 'leaders who lead primarily by using social exchanges for transactions' (Robbins, 2007). Transactional leaders focus and emphasize on managing and supervising their employees, and on completing and accomplishing allocated tasks on hand. Moreover, transactional leaders promote success by doling out both rewards and punishments contingent on performance. A negative association between transactional leadership and turnover intention has been reported consistently by researchers. With the help of 200 participants from the National Collegiate Athletic Association Division I softball and volleyball assistant coaches in the USA, Wells et al. (2010) has conducted a separate study to investigate the relationship between leadership styles and voluntary turnover intentions. The study results indicated a significant negative association between transactional leadership behavior and voluntary organizational turnover intentions. However, some researchers (Amankwaa & Anku-Tsede, 2015) argue that there is no significant relationship between transactional leadership and turnover intentions. Amankwaa and Anku-Tsede (2015) conducted a cross-sectional, correlational survey and a multi-stage sampling approach to examine the influence of transactional leadership behaviors on employees' turnover intention by using 305 employees in the Ghanaian banking industry. The results revealed that transactional leadership had an insignificant positive effect on employee turnover intention.

Luthans (2005) explained the laissez-fair style as 'abdicates responsibilities avoid making decisions'. Laissez-faire leadership, which is contrasting to transformational and transactional leadership, is a passive kind of leadership. Normally, laissez-faire leaders avoid making decision and don't get involved in working units because the leaders provide their subordinates with complete freedom to set deadlines for the allocated tasks to be completed (Goodnight, 2004). Hamidifar (2010) commented that leaders of laissez-fair style usually do not care and take no consideration or concern about issues that arise in an organizational environment.

Thus, a good understanding of the relationship between leadership style and employees turnover intention is critical and an integral part of the success of an organization. The present study demonstrates the leadership, as a key factor to aid in retaining valuable employees, need a deeper research in the future.

### 2.4.4 Job Performance

The potential linkage between work performance and turnover intention was considered in earnest in the 1930s, and an association between work performance and turnover intention has been reported in many kinds of literature (Judge, 2001). However, Poon (2004) and Podsakoff et al. (2007) stated that the potential relationship between work performance and turnover intention is still unsystematic and limited even if the various determinants of work performance has been made. Cropanzano et al. (2003) have shown that an employee tends to have higher work performance and weaker turnover intentions, which means that employees who leave the organization exhibit poor work performance before resignation. Based on the research that has demonstrated and argued about high performers tend to receive higher rewards, Joseph et al. (2007) stated that work performance should be negatively related to turnover intention through enhanced job satisfaction.

Job satisfaction also affects employees' job performance. Chao et al. (2015) used a cross-sectional structured questionnaire to collect data from 344 licensed professionals in a Taiwan rural regional hospital and the results showed a positive correlation between job satisfaction and job performance ($\beta$ = .18, $t$ value = 3.06).

Hence, the higher job satisfaction was, the greater the likelihood of higher job performance.

### 2.4.5 Work-Family Conflict

Work-family conflict refers to a form of inter-role conflict in which the general demands of time devoted to and strain created by the job, interfere with performing family-related responsibilities (Greenhaus & Beutell, 1985). Many findings have been reported by researchers about the relationship between work-family conflict and the employee's turnover intention. (Karatepe et al., 2006; Ahuja et al., 2007; Blomme et al.,2010). They suggest that there was a significant positive relationship between work-family conflict and the turnover intention, in other words, if conflicts of either work orfamily increased, then an elevated turnover intention level would follow.

Karatepe et al. (2006) investigated the frontline employees in the Jordanian hotel industry and found that work-family conflict was positively related to frontline employees' turnover intention ($r = .43$, $p = .001$). Similarly, an investigation conducted by Blomme et al. (2010) found that both work-family conflict and organizational support are the predictors of employee turnover intention in the hospitality industry. Ahuja et al. (2007) suggested that work-family conflict is a crucial source of stress among IT road warriors, who are susceptible to work-family conflict issues, and may lower their organizational commitment and as a result a potential antecedent to their turnover intention. Thus, employees who have higher work-family conflict are prone to have a higher intention to leave the organization.

Previous research has also shown that work-family conflict negatively affects job satisfaction (Cortese, Colombo, & Ghislieri, 2010; Armstrong, & Wells, 2015). In Italy, Cortese et al. (2010) conducted a descriptive correlational study to explore the causal relationship between work-family conflict and job satisfaction among 351 professional nurses. The results demonstrated that work-family conflict correlated negatively with job satisfaction ($r = -.40$, $p < .01$). Armstrong et al. (Armstrong et al., 2015) divided work-family conflict into three specific domains and examined them in relation to job satisfaction in a diverse sample of 441 correctional officers employed at 13 public adult correctional facilities. The results indicated that work-family conflict–time ($r = -.35$, $p$

< .01), work-family conflict–strain ($r$ = -.48, $p$ < .01) and work-family conflict–behavior ($r$ = -.28, $p$ < .01) were all significantly related to job satisfaction. Thus, the presence of work-family conflict contributes to decreased levels of employee job satisfaction.

We have undertaken a thorough literature review of the reasons the employee's plan to leave their organizations. However, we note that with the increasing number of studies on the topic of turnover we cannot guarantee to have taken into account all the causes, such as work stress, developing or training, role ambiguity and role conflict. Moreover, some of the factors listed above may play asimilar function in the research. Thus, factor analysis, a statistical method used to reduce the number of variables to a smaller number of dimensions and detect structure in the relationship between variables, should be used for future research.

## 2.5 Summary

In this section, turnover intention, job satisfaction, organizational commitment, leadership, job performance, and work-family conflict have been reviewed, and their theories, models, and approaches have been discussed. The turnover intention has been widely researched, and it will continue to be researched by the belated researchers. Many theories and models of job satisfaction have been discussed but no final definition was present. Meyer and Allen's (1991) model of commitment is the most widely discussed model, and it was revealed that organizational commitment is a multidimensional construct. Leadership, which contains the different style of transformational and transactional, also have been identified in this research as having a great impact on employees' turnover intention. The relationship between job satisfaction, organizational commitment, leadership, job performance, and work-family conflict and turnover intention has been analyzed. Meanwhile, the relationship between factors and job satisfaction and organizational commitment have also been represented. Due to the first time proposed, termination intention was introduced, and the potential factors were also discussed.

In the following chapter, the researcher will present the detailed research methodology, which includes research design, survey development, data collection, model development, hypothesis testing procedure, as well as group analysis method.

# CHAPTER 3: METHODOLOGY

## 3.1 Introduction

The study outlines of the research methodology that includes the research design, survey development, data collection, model development, hypothesis testing, and statistical analysis are presented in this chapter. First, the research design discussed the design choice and explanation in this study. Next, the survey questionnaire was developed on the basis of the previous research and modified by means of the pilot test. Third, the data was collected for further analysis. Forth, the model developed for this study, and followed up with model testing which contains the measurement model analysis and structural model analysis. Fifth, the survey data was analyzed using Statistical Package for the Social Sciences (SPSS) and Structural Equation Modeling (SEM). Moreover, the hypothesis was also proposed and tested. Finally, the results and findings and their implications are presented and discussed in the next chapter. The complete research structure is demonstrated in Figure 3.1.

## 3.2 Research Design

This study employed a quantitative cross-sectional survey to investigate the relationship between independent factors and turnover intention and termination intention, respectively. Compared to the qualitative paradigm, an anti-positivistic, interpretative approach and the goal is to understand social life; the quantitative paradigm is based on positivism, which takes the scientific explanation to be nomothetic through measuring the social world objectively, testing hypotheses and predict or control human behavior (Martin, 2008). On the other hand, a cross-sectional survey was used to collect information from the whole population at a single point in time (Lavrakas, 2008). The study data was collected from the quantitative cross-sectional survey of workers in a manufacturing company in the East Tennessee area. The advantage of quantitative cross-sectional studies is that it allows large-scale data collection and analysis at a reasonably less time and low cost.

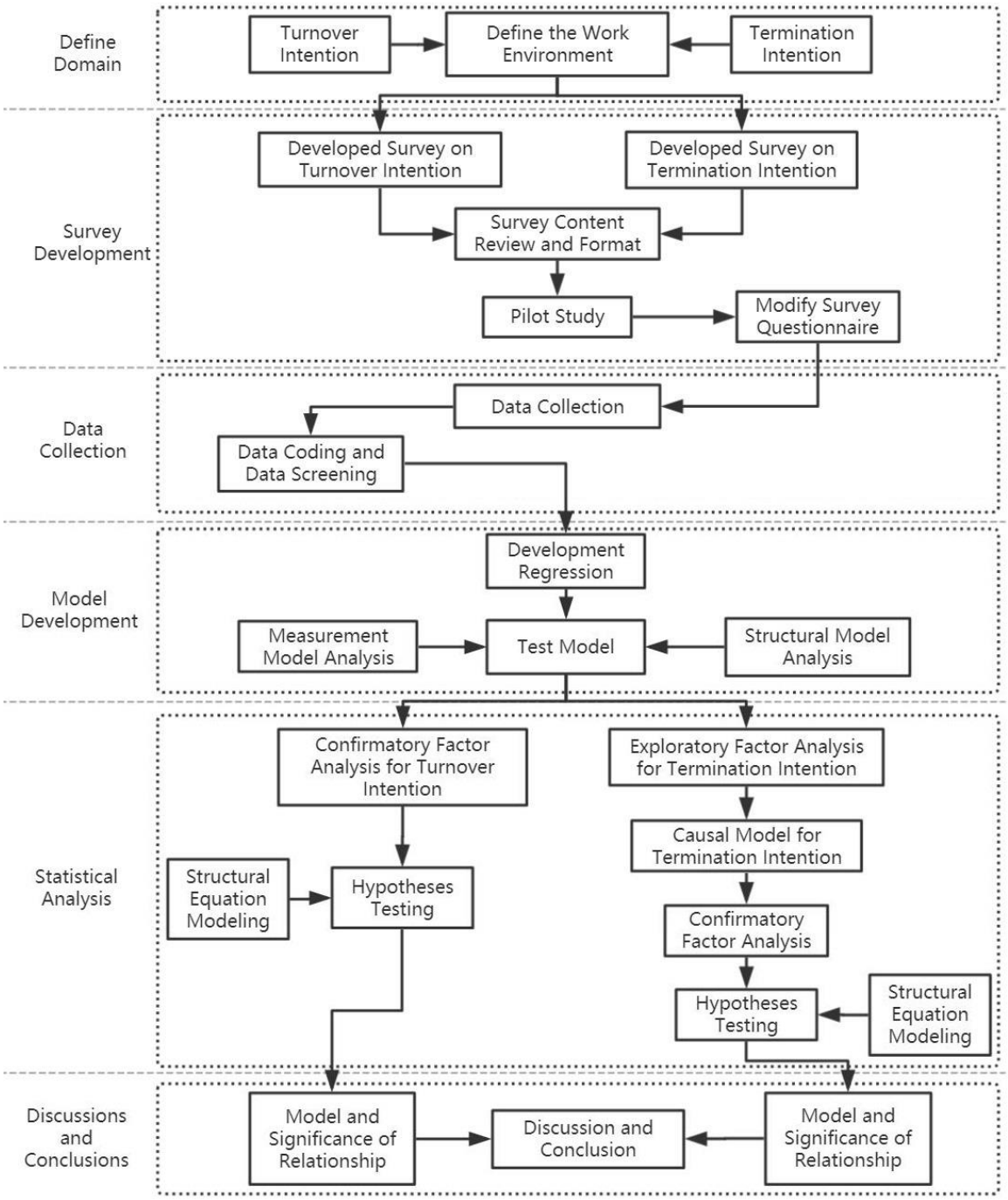



**Figure 3.1:** Structure of the research contribution.

## 3.3 Survey Development

### 3.3.1 Survey Instrument

The final survey instrument was derived from previous literature in factors of turnover intention described in Chapter 2. The original survey instrument consisted of employees' demographic information and 58 Likert scale questions for 19 variables described in Chapter 3. The survey was primarily divided into four sections: Job and Organization Related Questionnaire, Intervening Variables Questionnaire, Turnover and Termination Intention Questionnaire, and Demographic information. The questions measured employees' turnover and termination intention with 5-point Likert scales, ranging from strongly disagree to stronglyagree completely. The survey instrument is shown in Appendix A.

### 3.3.2 Ethical Considerations

Research ethics means "conducting research not only in a way which goes beyond merely adopting the most appropriate research methodology but also in a responsible and morally defensible way" (Gray, 2009). Concerning this study, the participants were informed that their participation is voluntary, and there would be no violation of employers and employees' rights involved. They were also informed that they might withdraw at any time or decline to answer any survey items during the survey test. In order to maintain confidentiality, the participants were assured that their responses were anonymous, and they did not need to provide any identifying information, such as the participant's contact details. The survey instrument and the data collection procedure of this study were approved by the University of Tennessee Knoxville Institutional Review Board (IRB) and the approved letter is shown in Appendix B.

### 3.3.3 Pilot Study

The purpose of the pilot study was to evaluate feasibility and eliminate problems of the questionnaire, as well as improve the success and effectiveness of the investigation (De Vos, Strydom, Fouche, Poggenpoel & Schurink, 1998). A pilot study was assessed

by testing the face and content validities of the instrument and initially evaluate its reliability. It is a small-scale preliminary study or a dress rehearsal for the empirical investigation (Welman et al., 2009).

## 3.4 Data Collection

### 3.4.1 Sample Population

A target population can be loosely defined as the total collection of all members, cases or elements about which the researcher wishes to draw conclusions (Huysamen, 1994). Defining the target population clearly is necessary, because the data will lose value if the wrong sample population is targeted. The sample population for this survey included manufacturing workers from different organization sites in the Tennessee area because Tennessee is a typical manufacturing state. Furthermore, due to researcher's network characteristics, access to companies in this particular area is significantly, which also justified this sample selection. Non-random choice of respondents is a common approach in survey-based studies. According to a report from the Tennessee Department of Labor & Workforce Development, there were approximately 266,090 employed manufacturing workers, representing 9.13% of total employment, in Tennessee in May 2017.

### 3.4.2 Sample Size

Sample size requirements remain a vexing problem in structural equation modeling (SEM)-based studies, even though SEM approaches have been developed in recent decades. However, compared to traditional approaches, the partial least squares (PLS)-SEM method places less emphasis on the sample size requirement. The PLS-SEM algorithm does not compute all relationships in the structural model at the same time. Instead, it uses ordinary least squares (OLS) regressions to estimate the model's partial regression relationships. For the purpose of this study, the often-cited '10 times rule' (Barclay et al., 1995) is applied, and the sample size is determined by 1) 10 times the largest number of formative indicators used to measure a single construct or 2) 10

times the largest number of structural paths directed at a particular construct in the structural model.

In the conceptual model presented in Chapter 3: Figure 3.4 has three constructs: 'Turnover Intention' (TUI), 'Job Satisfaction' (JS) and 'Organizational Commitment' (OC). TUI has five indicators, and the structural model has 12 exogenous variables that explain the construct JS and OC. The maximum number of arrows that point at a particular latent variable is 12. Thus, according to the '10 times rule', $12 \times 10 = 120$ represents the minimum number of observations needed to estimate the PLS-SEM model.

### 3.4.3 Data Coding

In order to perform data screening and data analysis, the processing and filtering of the data needs to be processed. The data coding summary is listed below and makes the data ready for screening and analysis.

**Table 3.1:** Data coding summary

| Factors | Item Sequence | Answer Type | Points |
|---|---|---|---|
| Pay Satisfaction | 1-3 | Likert | 5 |
| Team-worker | 4-5 | Likert | 5 |
| Autonomy | 6-7 | Likert | 5 |
| Work Stress | 8-10 | Likert | 5 |
| Workload | 11-13 | Likert | 5 |
| Promotion Opportunity | 14-16 | Likert | 5 |
| Developing or Training | 17-18 | Likert | 5 |
| Routinization | 19-20 | Likert | 5 |
| Role Ambiguity | 21-22 | Likert | 5 |
| Role Conflict | 23-25 | Likert | 5 |
| Working Environment | 26-27 | Likert | 5 |
| Absenteeism | 28-30 | Likert | 5 |
| Job Satisfaction | 31-34 | Likert | 5 |
| Organizational Commitment | 35-39 | Likert | 5 |
| Leadership | 40-43 | Likert | 5 |
| Work-Family Conflict | 44-46 | Likert | 5 |
| Job Performance | 47-50 | Likert | 5 |
| Turnover Intention | 51-55 | Likert | 5 |
| Termination Intention | 56-58 | Likert | 5 |
| Demographics | 59-65 | Multiple choice | Differs |

### 3.4.4 Data Screening

Data screening is the necessary process of ensuring the data is clean and ready for conducting further statistical analyses. Data screening must make the data usable, reliable, and valid for testing the causal theory. In this section, specific issues, such as missing data, outliers, skewness and kurtosis, will be addressed and are listed as follows.

#### *Missing Data*

Missing data occurs when no data value is stored due to the respondent failing to answer one or more question(s) on the survey either purposely or inadvertently. Missing data can have a significant effect on the conclusions if the missing values are not handled properly by the researchers. Thus, it's necessary to replace the missing data for future data analysis. In this study, missing value was replaced by Replace Missing Values function on the SPSS and was imputed using Median replacement method, because Mean replacement method is less meaningful for Likert-type data (Lynch, 2003). The list of replaced and imputed values is in Appendix C.2.

#### *Outliers*

Survey items using Likert-scales in this study do not really exhibit any deviating behavior when outliers' analysis is performed. Both survey questionnaire and socio-demographic questionnaire using select one of the extreme options is not really indicative of outlier's behavior.

#### *Skewness and Kurtosis*

Skewness and Kurtosis determine the flatness of the distribution or peakedness of data, which can affect the model performance. Skewness is the measure of asymmetry, which shows the manner in which the items are clustered around the average. Kurtosis is a statistical measure used to describe the probability distribution of observed data around the mean. Both Skewness and Kurtosis are the two main indicators of univariate normality. In order to prove normal univariate distribution, the values for asymmetry and kurtosis between -2 and +2 are recommended, and a

few values close to ± 3.0 are also considered acceptable (George & Mallery, 2007). A detailed statistics of survey items consisting of a valid and missing number, mean, median, standard deviation, variance, skewness and standard error of skewness, kurtosis and standard error of kurtosis is summarized in Appendix C.2.

## 3.5 Model Development

### 3.5.1 Theoretical Approach of Study Model

In order to explain how independent variables impact dependent variables, such as turnover and termination intention, this study addresses two research models: turnover intention integrative model and termination intention causal model. We addressed the theoretical approach for each model and listed the equations as follows.

#### 3.5.1.1 Notation

The first step of the theoretical model approach is to define the notation of variables, factor loadings, regression weights, and error terms, as shown in Table 3.2. In our study, Variable $Y$ defines the observed endogenous (dependent) variables, and both $X$ and $Z$ define the observed exogenous (independent) variables. Moreover, variable $Z$ also corresponds to the mediation variables, such as job satisfaction and organizational commitment. Both $\gamma$ and $\beta$ express the path coefficient (regression coefficient) between exogenous and endogenous. The Greek alphabet $\lambda$ defines factor loading between latent variable and observed variable. Both $\varepsilon$ and $\zeta$ define the error term for observed variables and latent variables, respectively.

#### 3.5.1.2 Path Analysis of the SEM

After the different notation of the variables were defined, path coefficient, factor loading and error term, we addressed the path analysis of the structural equation modeling of the turnover and termination intention model.

Figure 3.2 shows the path model of turnover intention, and the construct also shown as follows.

**Table 3.2:** Notation for Structural Equations Models

| Type | Notation | Meaning |
|---|---|---|
| Variable | $\eta_{Xm}$ | Latent variable for '$X_{mn}$' observed variables. |
| | $\eta_{Ym}$ | Latent variable for '$Y_{mn}$' observed variables. |
| | $\eta_{Zm}$ | Latent variable for '$Z_{mn}$' observed variables. |
| | $X_{mn}$ | Exogenous (independent) 'n' observed variables for latent variable (factor) 'm' |
| | $Y_{mn}$ | Endogenous (dependent) 'n' observed variables for latent variable 'm' |
| | $Z_{mn}$ | Mediating (dependent-independent) 'n' observed variables for latent variable 'm' |
| Path coefficient | $\gamma_{YmXn}$ | Direct effect regression coefficient between exogenous latent variable '$X_n$' and endogenous variable '$Y_m$'. |
| | $\gamma_{ZmXn}$ | Direct effect regression coefficient between exogenous latent variable '$X_n$' and endogenous variable '$Z_m$', which also a mediating variable. |
| | $\beta_{YmZn}$ | Direct effect regression coefficient between endogenous latent variable '$Z_n$', which also a mediating variable, and endogenous variable '$Y_m$'. |
| Factor loading | $\lambda_{imn}$ | Factor loading for path 'mn' between latent variable '$\eta_{im}$' and observed variable 'i', where i = X,Y,Z. |
| Error Term | $\varepsilon_{imn}$ | Error term for observed variable 'i', where i = X,Y,Z. |
| | $\zeta_{in}$ | Error term for latent variable 'i', where i = X,Y,Z. |

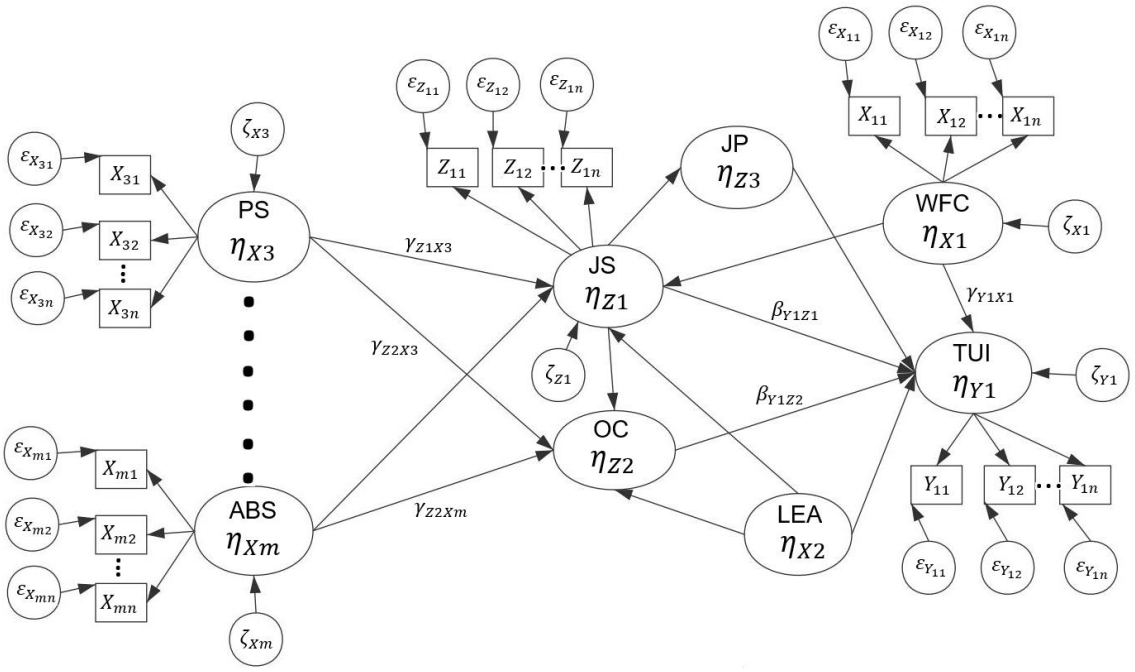



**Figure 3.2:** Path model of turnover intention

The constructs of the turnover intention are given by

$$\eta_{Y1} = \gamma_{Y1X1} \times \eta_{X1} + \gamma_{Y1X2} \times \eta_{X2} + \beta_{Y1Z1} \times \eta_{Z1} + \beta_{Y1Z2} \times \eta_{Z2} + \beta_{Y1Z3} \times \eta_{Z3} + \zeta_{Y1} \quad (1)$$

$$\eta_{Z1} = \gamma_{Z1X1} \times \eta_{X1} + \gamma_{Z1X2} \times \eta_{X2} + \gamma_{Z1X3} \times \eta_{X3} + \cdots + \gamma_{Z1Xm} \times \eta_{Xm} + \beta_{Z1Z2} \times \eta_{Z2} + \zeta_{Z1} \quad (2)$$

$$\eta_{Z2} = \gamma_{Z2X2} \times \eta_{X2} + \gamma_{Z2X3} \times \eta_{X3} + \gamma_{Z2X4} \times \eta_{X4} + \cdots + \gamma_{Z1Xm} \times \eta_{Xm} + \zeta_{Z2} \quad (3)$$

$$\eta_{Z3} = \beta_{Z3Z1} \times \eta_{Z1} + \zeta_{Z3} \quad (4)$$

where $\eta_{Y1}$present exogenous (independent) variable of turnover intention, $\eta_{X1}$present endogenous (dependent) variable of work-family conflict, $\eta_{Xm}$ present endogenous variable of absenteeism, $\eta_{Z1}$ present mediation (dependent) variable of job satisfaction, $\eta_{Z2}$ present mediation variable of organizational commitment, and $\eta_{Z3}$ present mediation variable of job performance.

Figure 3.3 shows the path model of termination intention, and the construct also shown as following.

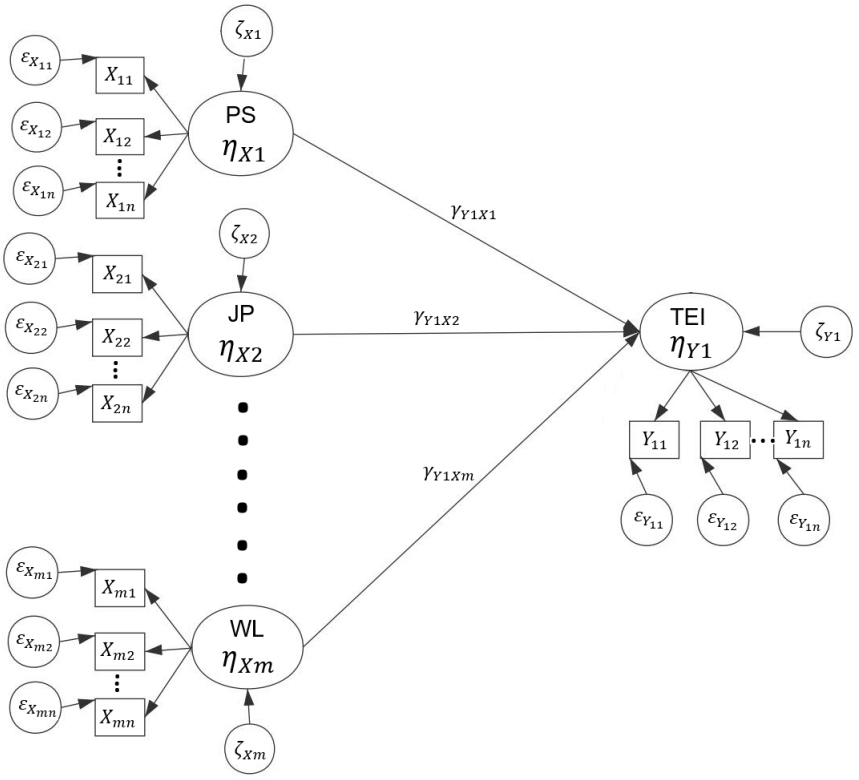



**Figure 3.3:** Path model of termination intention

The construct of the termination intention is given by

$$\eta_{Y1} = \gamma_{Y1X1} \times \eta_{X1} + \gamma_{Y1X2} \times \eta_{X2} + \cdots + \gamma_{Y1Xm} \times \eta_{Xm} + \zeta_{Y1} \quad (5)$$

where $\eta_{Y1}$ present exogenous (independent) variable of termination intention, $\eta_{X1}$ present endogenous (dependent) variable of pay satisfaction, and $\eta_{Xm}$ present endogenous variable of workload.

### 3.5.2 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is a statistical technique that is used to determining the correlation among the variables in a dataset. The aim of EFA is to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. In general, an EFA prepares the variables to be used for cleaner structural equation modeling. In EFA, observed variables are a linear combination of the underlying factors (e.g., estimated factor and a unique

factor). The unique factor accounts for common variance in a data set. The trace (sum of the diagonals) of the decomposed adjusted correlation matrix is explained by the amount of variance. And eigenvectors are the weights that could be used to calculate factor scores, indicate the amount of variance explained by each factor (Lattin et al., 2003). The EFA model is given by the following equation as:

$$Y = X\beta + E$$

where $Y$ is a matrix of measured variables, $X$ is a matrix of common factor, $\beta$ is a matrix of weights (factor loadings) and, $E$ is a matrix of unique factors, error variation.

The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were two methods to determine the suitability of the data for structure detection. The KMO Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. As a rule of thumb, KMO values between 0.8 and 1 indicate the sampling is adequate, the values between 0.6 and 0.8 indicate the sampling is meritorious, and the values less than 0.6 indicate the sampling is not adequate and that remedial action should be taken. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection. The value of the significance level of less than 0.05 indicates that factor analysis is useful with the data. In order to achieve better factor structure, the following criteria were applied to eliminate items (Hair et al., 1998).

- *Items with factor loading less than 0.5 will be eliminated.*
- *Items that load on two or more factors, which occurs when the item with factor loading is greater than 0.5 on two or more factors, will be eliminated.*
- *An item with a measure of sampling adequacy less than 0.5 in the anti-image matrix will be eliminated.*

### 3.5.3 Measurement Model Analysis

The questionnaire of the turnover intention was developed by review plenty of publications about turnover. Although it has been used in the pilot pre-survey, this is the first time this particular survey questionnaire was used on such a large scale.

Thus, investigating the reliability and validity of the questionnaire is very necessary and significant.

### 3.5.3.1 Consistency Reliability

Reliability is the degree to which a test consistently measures whatever is being measured for stability (e.g., test and retest) and equivalence (e.g., two similar tests are used) (Hayes, 1998). Provided the underlying traits being measured have not changed, as Gray stated, in order for a research measurement to be reliable, it should come to the same results when something was measured separately (Gray, 2009). Welman points out that by generalized to different measuring occasions and measurement forms, reliability as the extent to which obtained scores (Welman, 2004). Any measuring instrument is deemed to have low reliability if it produces different scores every time it is used (Josias, 2005).

The internal consistency (e.g., Cronbach's alpha) and the test-retest coefficient (e.g., Pearson correlation) can be used to assess the reliability of the instruments (Lattin et al., 2003). Hair et al. (2006) indicated that Cronbach's coefficient is a reasonable indicator of the internal consistency of instruments that do not have right or wrong marking schemes. Cronbach's alpha is calculated as follows:

$$\alpha_{standardized} = \frac{K \cdot \overline{r}}{(1 + (K-1) \cdot \overline{r})}$$

where $K$ is the number of variables and $\overline{r}$ is the average correlation among all pairs of variables.

The value of the reliability coefficient is a range from 0.5 to 1, and a high value indicates a highly reliable instrument. Nunnally (1978) offered a rule of thumb of 0.7 as an acceptable alpha. Moreover, DeVellis insisted that the minimum acceptable reliability coefficients range from 0.70 to 0.80 (DeVellis, 1991). The test-retest coefficient had to be 0.7 or higher.

### 3.5.3.2 Validity

The validity is a measurement concept that is considered to be the degree to which a measuring instrument actually measures what it claims to measure, and it is

investigated by the evidence (Bull, 2005). For the purpose of this research, the validity of the instruments was assessed through the face, the content, the discriminant, and the convergent validity. In the pilot study, the researcher will examine the face and content validities. The definition and concept of the different validity are listed as follows:

***Face validity***

Face validity is defined as 'the degree that respondents or users judge that the items of an assessment instrument are appropriate to the targeted construct and assessment objectives' (Anastasi, 1988). It is referred to as the degree to which a test appears to measure what it claims to measure. The items should be facing valid to meet the criterion of the content validity by the initial pool of items. Therefore, the overall measure cannot be a valid operationalization of the construct of interest if items from the scale are not facing valid (Hardesty & Bearden, 2004).

***Content validity***

The term 'content validity' refers to the extent to which a measuring instrument covers the whole concept (Van Saane & Sluiter, 2003). The definition of content validity developed by Nunnally and Bernstein (1994) was 'the degree to which a measure's items represent a proper sample of the theoretical content domain of a construct.' The content validity was assessed by means of the fit between relevant work factors retrieved from the literature search.

***Convergent validity***

Convergent validity refers to the degree to which two measures of constructs that theoretically should be related are actually related. Lloyd (1998) defined convergent validity as 'an instrument is the degree of similarity between the scores of that instrument and those of another instrument that is supposed to measure the same concept.' Convergent validity, along with discriminant validity, is also a subtype of construct validity. Thus, both instruments are expected to have a moderate to high

correlation. In our research, the criterion for the convergent validity was considered as acceptable at 0.50 or higher values.

***Discriminant validity***

Discriminant validity shows that two concepts or measurements that are not supposed to be related are in fact distinct (Martin, 2008). Saane and Sluiter (2003) defined discriminant validity as 'the extent to which the score of an instrument differs from that of an instrument that measures a related, but different concept.' Discriminant validity is a subtype of construct validity. Thus, the researcher will use confirmatory factor analysis to illustrate discriminant validity among the measures of job satisfaction, organizational commitment, leadership, and turnover intention.

### 3.5.4 Structural Model Analysis

According to the two-stage modeling approach, a structural model analysis, which involves examining the model's capabilities and the relationships between the constructs, will be addressed after the measurement model analysis which confirmed the model's reliability and validity. The structural model for collinearity needs to be examined first because the estimation of path coefficients in the structural models is based on OLS regressions of each endogenous latent variable on its corresponding predecessor constructs. The significance of the path coefficients, the level of the $R^2$ values, the $f^2$ effect size and the predictive relevance $Q^2$ are the key criteria for assessing the structural model in PLS-SEM and will be addressed in the following sections.

#### 3.5.4.1 Collinearity Test

Collinearity issue is when any indicator exhibits high intercorrelations or inter-associations with other indicators in the same construct. Collinearity can result in several problems, such as variation inflation issues or unstable and unreliable regression estimates. Normally, collinearity can be measured by variance inflation factors (VIF) and tolerance. According to Hair et al. (2006), the maximum acceptable level of VIF is 10, while Ringle et al. (2015) argue that a VIF of 5 or higher would

result in a potential collinearity problem. In this study, any indicator with a VIF of 5 or higher will be removed from the construct.

#### 3.5.4.2 Path Coefficients

The path coefficients explain how strong the effect of one variable is on another variable and the weight of different path coefficients enables us to rank their relative statistical importance. The value of standardized path coefficients is achieved after running PLS-SEM algorithm. The range of the standardized path coefficients value is from -1, which represents a strong negative relationship between constructs, to 1, which represents a strong positive relationship between constructs. The significance of the path coefficient is obtained after running the bootstrapping algorithm. The bootstrapping algorithm is a resampling technique used to estimate statistics on a population by sampling a dataset with replacement, and it computes $p$-value in a $t$-test for each of the path coefficients. In this study, we used the normally significant level of 0.1% ($\alpha = .001$), 1% ($\alpha = .01$), and 5% ($\alpha = .05$) and corresponding to the $p$-value of $p = .001$, $p = .01$, and $p = .05$ respectively.

#### 3.5.4.3 Coefficient of Determination $R^2$

The coefficient of determination is a statistical measure of how well the regression predictions approximate the actual data values. It is used for measuring the amount of variance explained by the model, which represents the combined effect of independent latent variables on the latent dependent variable and is calculated as the square of the correlation coefficient (R) between the sample and predicted data. The $R^2$ value ranges from 0 to one, where values closer to 0 represent a poor fit while values closer to 1 represent a perfect fit. There is no standard guideline to determine a specific rule of thumb for acceptable $R^2$ values as it is adopted in various research disciplines or depends on the model complexity. For example, $R^2$ values of 0.20 are considered high in consumer behavior studies, whereas the values of 0.75 and above are acceptable in success driver studies. Henseler et al. (2009) proposed a rule of thumb for acceptable $R^2$ with 0.75, 0.50, and 0.25 are described as substantial,

moderate and weak respectively. For some complex models, a*djusted* $R^2$ is a special form of $R^2$, and it can be used as the criterion to avoid bias toward models.

#### 3.5.4.4 Effect Size $f^2$

In order to evaluate whether the omitted construct has a substantive impact on the endogenous constructs, Cohen (Cohen, 1988) defined an effect size of $f^2$ which represents the change in $R^2$ value when a specified exogenous construct is omitted from the model. The effect size is calculated as,

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

where $R^2_{included}$ and $R^2_{excluded}$ are the $R^2$ values of the endogenous latent variable when a selected exogenous latent variable is included in or excluded from the model. And Cohen also suggested that the $f^2$ values of 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes, respectively (Cohen, 1988).

#### 3.5.4.5 Predictive Relevance $Q^2$

In addition to evaluating the structural model, the Stone-Geisser $Q^2$ value (Geisser, 1974; Stone, 1974) should be examined for exhibiting the model's predictive relevance, which accurately predicts the data points of indicators in reflective measurement models of endogenous constructs and endogenous single-item constructs. A $Q^2$ value greater than zero for a certain reflective endogenous latent variable indicates the path indicates predictive relevance for the particular construct. The $Q^2$ value is obtained by using the blindfolding procedure for a specified omission distance *D,* which specifies how far the algorithm reaches in the process of data point omission.

## 3.6 Hypothesis Testing

The main goal of this study was to build a model that investigates the relationship between independent variables, such as job satisfaction, organizational commitment, leadership and job performance et al., and dependent variables of turnover intention and termination intention. As shown in Figure 3.4, job satisfaction, organizational

commitment, job performance, leadership, and family-work conflict may have a direct effect on turnover intention; leadership may highly impact job satisfaction and organizational commitment; job satisfaction may also have a significant effect on job performance and organizational commitment; and the hypothesis listed as following.

- Hypothesis 1a (H1a): Work-family conflict has a significant positive effect on employees' turnover intentions.
- Hypothesis 1b (H1b): Employees' job performance has a significant negative impact on their turnover intention.
- Hypothesis 1c (H1c): Employees' job satisfaction has a significant negative effect on their turnover intention.
- Hypothesis 1d (H1d): Employees' organizational commitment has a significant negative impact on their turnover intentions.
- Hypothesis 1e (H1e): Leadership has a significant negative effect on employees' turnover intentions.
- Hypothesis 1f (H1f): Work-family conflict has a significant negative impact on employees' job satisfaction.
- Hypothesis 1g (H1g): Leadership has a significant positive impact on employees' job satisfaction.
- Hypothesis 1h (H1h): Leadership has a significant positive impact on employees' organizational commitment.
- Hypothesis 1i (H1i): Employees' job satisfaction has a significant positive effect on their job performance.
- Hypothesis 1j (H1j): Employees' job satisfaction has a significant positive effect on their organizational commitment.

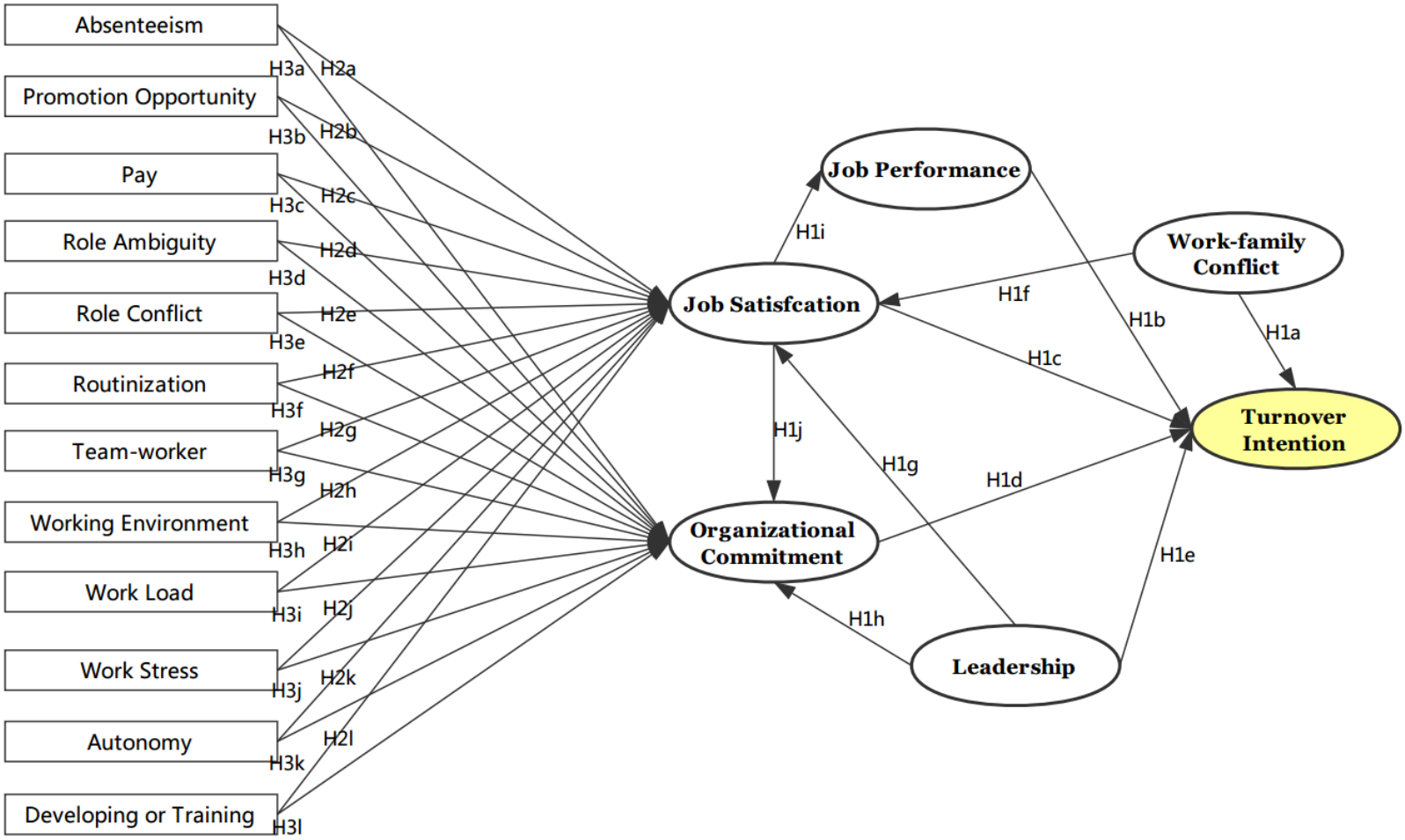



**Figure 3.4:** Research hypotheses in turnover intention

The model has 12 exogenous variables: absenteeism, promotion opportunity, pay, role ambiguity, role conflict, routinization, team-worker, working environment, workload, work stress, autonomy and developing or training. These exogenous variables may all have a relationship with intervening variables of job satisfaction and organizational commitment, and the hypothesis listed as following.

As shown in Figure 3.4, the hypothesis for the intervening variable of job satisfaction as following.

- Hypothesis 2a (H2a): Absenteeism has a significant negative impact on their job satisfaction.
- Hypothesis 2b (H2b): Promotion opportunity has a significant positive impact on their job satisfaction.
- Hypothesis 2c (H2c): Pay has a significant positive impact on their job satisfaction.
- Hypothesis 2d (H2d): Role ambiguity has a significant negative impact on their job satisfaction.
- Hypothesis 2e (H2e): Role conflict has a significant negative impact on their job satisfaction.
- Hypothesis 2f (H2f): Routinization has a significant negative impact on their job satisfaction.
- Hypothesis 2g (H2g): Team-worker has a significant positive impact on their job satisfaction.
- Hypothesis 2h (H2h): Working environment has a significant positive impact on their job satisfaction.
- Hypothesis 2i (H2i): Workload has a significant negative impact on their job satisfaction.
- Hypothesis 2j (H2j): Work stress has a significant negative impact on their job satisfaction.
- Hypothesis 2k (H2k): Autonomy has a significant positive impact on their job satisfaction.
- Hypothesis 2l (H2l): Developing or training has a significant positive impact on their job satisfaction.

As shown in Figure 3.4, the hypothesis for the intervening variable of organizational commitment as following.

- Hypothesis 3a (H3a): Absenteeism has a significant negative impact on their organizational commitment.
- Hypothesis 3b (H3b): Promotion opportunity has a significant positive impact on their organizational commitment.
- Hypothesis 3c (H3c): Pay has a significant positive impact on their organizational commitment.
- Hypothesis 3d (H3d): Role ambiguity has a significant negative impact on their organizational commitment.
- Hypothesis 3e (H3e): Role conflict has a significant negative impact on their organizational commitment.
- Hypothesis 3f (H3f): Routinization has a significant negative impact on their organizational commitment.
- Hypothesis 3g (H3g): Team-worker has a significant positive impact on their organizational commitment.
- Hypothesis 3h (H3h): Working environment has a significant positive impact on their organizational commitment.
- Hypothesis 3i (H3i): Workload has a significant negative impact on their organizational commitment.
- Hypothesis 3j (H3j): Work stress has a significant negative impact on their organizational commitment.
- Hypothesis 3k (H3k): Autonomy has a significant positive impact on their organizational commitment.
- Hypothesis 3l (H3l): Developing or training has a significant positive impact on their organizational commitment.

Due to this first-time proposal on the terminology of employee's termination intention, we need to do exploratory factor analysis (EFA) to investigate the potential relationship between the job-related variables and termination intention. As shown in Figure 3.5, we have the following hypotheses formulated and it will be tested in this research.

- Hypothesis 4a (H4a): Employees' job performance has a significant negative effect on their termination intention.
- Hypothesis 4b (H4b): Leadership has a significant negative impact on employees' termination intention.
- Hypothesis 4c (H4c): Employees' organizational commitment has a significant negative impact on employees' termination intention.
- Hypothesis 4d (H4d): Employees' pay has a significant negative effect on their termination intention.
- Hypothesis 4e (H4e): Employees' role ambiguity has a significant positive impact on employees' termination intention.
- Hypothesis 4f (H4f): Employees' role conflict has a significant positive impact on employees' termination intention.
- Hypothesis 4g (H4g): Team-worker has a significant negative impact on employees' termination intention.
- Hypothesis 4h (H4h): Employees' workload has a significant positive impact on employees' termination intention.
- Hypothesis 4i (H4i): Autonomy has a significant negative impact on employees' termination intention.
- Hypothesis 4j (H4j): Work stress has a significant positive impact on employees' termination intention.
- Hypothesis 4k (H4k): Promotion opportunity has a significant negative impact on employees' termination intention.
- Hypothesis 4l (H4l): Developing or training has a significant negative impact on employees' termination intention.
- Hypothesis 4m (H4m): Routinization has a significant positive impact on employees' termination intention.
- Hypothesis 4n (H4n): Working environment has a significant negative impact on employees' termination intention.
- Hypothesis 4o (H4o): Absenteeism has a significant positive impact on employees' termination intention.

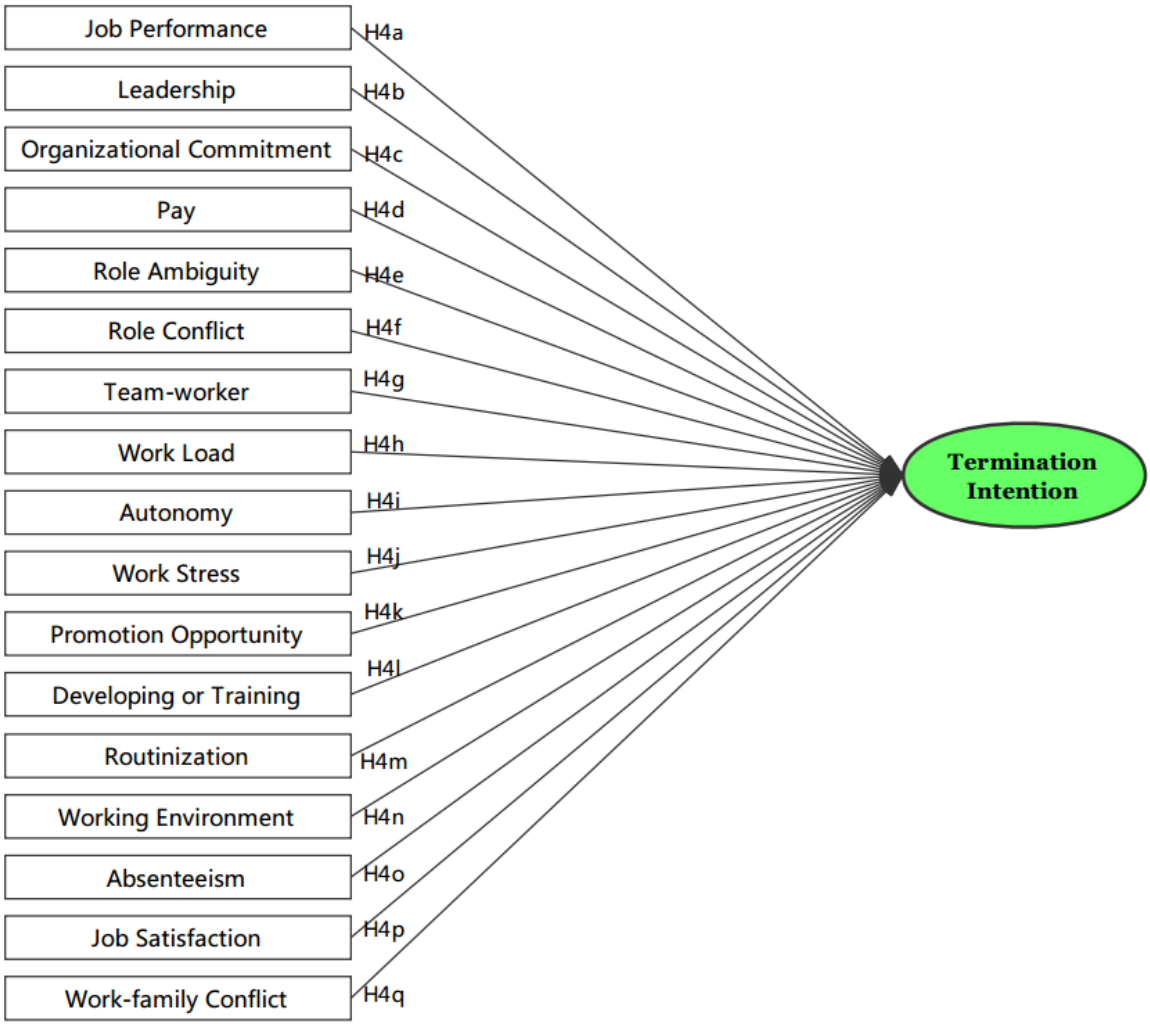



**Figure 3.5:** Research hypotheses in termination intention

- Hypothesis 4p (H4p): Job satisfaction has a significant negative impact on employees' termination intention.
- Hypothesis 4q (H4q): Work-family conflict has a significant positive impact on employees' termination intention.

## 3.7 Group Analysis

### 3.7.1 Mann-Whitney U Test

The Mann-Whitney U test is a nonparametric test for testing the equality of means in two independent samples. It allows two samples or groups to be compared without making the assumption of normal distributions. Since a non-probability sampling method was used in our study, the statistical test was performed using the Mann-Whitney U test to compare the medians between male and female respondents. Particularly, it was used to test whether the male workers and female workers were similar in their perceptions in terms of job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC), job performance (JP), turnover intention (TUI) and termination intention (TEI).

### 3.7.2 Kruskal-Wallis Test (KWt)

Kruskal-Wallis one-way analysis of variance (ANOVA) on ranks test (or H test) was used in this study to compare several independent random samples in all groups. The null and alternative hypotheses of the KWt are different in nature from those of ANOVA, and the null hypothesis of the KWt is that the mean ranks of the groups are the same. As a non-parametric test, KWt does not have to make the assumption that the dependent variable is normally distributed or there is approximately equal variance on the scores across groups. KWt was used to test whether the different length of service groups was similar in terms of job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC), job performance (JP), turnover intention (TUI) and termination intention (TEI). In the results, the data are ranked jointly from low to high or high to low as if they constituted a single sample (Kothari, 2004).

## 3.8 Summary

In this research, the quantitative survey questionnaire method was employed to investigate factors impacting manufacturing workers' turnover intention and termination intention. The final survey instrument was derived from previous literature review described in last chapter. Research ethics was considered and pilot study was also performed. The paper survey questionnaire was used to collect quantitative data from a large manufacturing company. And then, data coding and data screening was performed to make data useful and ready for further analysis. In the section of model development, the theory of the structural equation modeling was discussed. The two steps of model evaluation, measurement model analysis, such as consistency reliability and validity, and structural model analysis, such as collinearity, path coefficient, coefficient of determination, effect size and predictive relevance, were performed to evaluate the turnover and termination model. The hypothesis testing of the turnover intention model and termination intention model were proposed. At last, the Mann-Whitney U test was performed to compare the medians between male and female respondents and the Kruskal-Wallis test was used to test whether the different length of service groups was similar in terms of independent variables.

# CHAPTER 4: RESEARCH FINDINGS

## 4.1 Introduction

A theoretical exposition of the research methodology was presented in the previous chapter. This chapter presents the data analysis, measurement, and discussion of the results. The data analysis, such as descriptive statistics, frequencies, correlation analysis, factor analysis, and structural equation modeling, in determining the relationship between variables. All data analysis was performed using the IBM SPSS23 software for descriptive analysis, correlation analysis, and factor analysis. Structural equation modeling was conducted using SmartPLS software for model fit and hypothesis testing.

## 4.2 Survey Development

### 4.2.1 Survey Questionnaire

The job satisfaction measure was adapted from Spector's (1994) Job Satisfaction Survey, which can evaluate a worker's attitudes concerning aspects of their job. In order to reduce the workload of the participants in our study, we used five measures of organizational commitment developed by Meyer and Allen (Jaros, 2007), which has been tested and validated mainly in the United States of America (Lee & Gao, 2005). Four measures of leadership were also from Spector (1994). The work-family conflict was developed by Netemeyer et al. (1996) in order to measure work-to-family conflict of the employees. Job performance instrument was adopted from Koopmans et al. (2012) to measure a worker's perceived individual work performance. The turnover intention survey questionnaire was adopted from Lambert et al. (2009) and was developed to measure employees' intentions to leave or stay with the organization. The autonomy measures were adapted from Hackman (1980). The working environment and opportunity items were new. The workload measures that were used in this study are based from the instruments developed by Qureshi et al. (2012). Four measures of pay satisfaction, promotion, team-worker and leadership were adapted

from Spector's (1994) Job Satisfaction Survey. The job satisfaction measure was also developed by Spector (1994) in order to evaluate a worker's attitudes concerning aspects of their job. In order to measure employees' intentions to leave or stay with the organization, we used five measures of turnover intention developed by Lambert and Hogan (2009). A pilot study was conducted to test the reliability and validity of each item of the survey questionnaire, and all items were retained due to the favorable results.

### 4.2.2 Pilot Study

#### 4.2.2.1 Participants

The participants, who have similar characteristics with the targeted group, were recruited to be involved in this pilot test. The number of participants for a pilot study is difficult to determine because it is influenced by many factors. Hill (1998) suggested that using 10 to 30 participants for a pilot in survey research has many practical advantages. Van Belle (2002) recommended that researchers 'use at least 12 observations in constructing a confidence interval'. Julious (2005) suggested that 'a minimum of 12 subjects per group be considered for pilot studies' in the medical field.

The participants involved in this pilot study were 21 employees from a large organization in Knoxville, Tennessee. These employees come from different organizations, such as a car manufacturing company, government organization, and university. Among those participants, 17 are male, and 4 are female. All participants volunteered to participate in the turnover intention research.

#### 4.2.2.2 Data Collection

The questionnaire presented in the Appendix is used as a data collection instrument in the pilot study. In order to clearly describe each question, the names of each variable stated in the research model were listed in the questionnaire. At the beginning of each survey, the researcher introduced the purpose of this research and explained each section. Then the participants completed the survey online or by hard copy without a signature.

#### 4.2.2.3 Measurement

The data was collected and analyzed by IBM SPSS23. The face and content validities, as well as the internal reliability of the measuring instrument was tested. Sekaran (Sekaran, 1992) stated that the value of reliability less than 0.70 should generally be considered poor and less reliable. Therefore, a 0.70 and upper alpha value, across all sections of the measuring instrument, is considered satisfactory reliability in the pilot study.

#### 4.2.2.4 Reliability Statistics

The purpose of the pilot test is to check the internal consistency of the measuring instrument. Items were structured based on a five-point Likert-type scales which express either a favorable or unfavorable attitude ranging from strongly agree to strongly disagree towards the given constructs. An item's reliability less than 0.70 generally should be considered inadequate and less reliable, and the results of the pilot study are presented in Table 4.1.

The first 12 variables from pay satisfaction to absenteeism are considered as the sub-variables for the turnover intention, which has a relationship with job satisfaction and organizational commitment. The analysis is listed as follows:

- *Pay Satisfaction* Cronbach's α is 0.444 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.791
- *Team-worker* Cronbach's α is 0.567 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.743
- *Autonomy* Cronbach's α is 0.796 and greater than 0.7
- *Work stress* Cronbach's α is 0.755 and greater than 0.7
- *Workload* Cronbach's α is 0.733 and greater than 0.7
- *Promotion* Cronbach's α is 0.735 and greater than 0.7
- *Developing* Cronbach's α is 0.586 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.731

**Table 4.1:** Pilot study reliability statistics

| Variable | Cronbach's alpha | Number of items | Number of items deleted | Number of remaining items | Revised Cronbach's alpha |
|---|---|---|---|---|---|
| Pay Satisfaction | 0.444 | 4 | 1 | 3 | 0.791 |
| Team-worker | 0.567 | 3 | 1 | 2 | 0.743 |
| Autonomy | 0.796 | 2 | - | - | - |
| Work Stress | 0.755 | 3 | - | - | - |
| Workload | 0.733 | 3 | - | - | - |
| Promotion | 0.735 | 3 | - | - | - |
| Developing | 0.586 | 3 | 1 | 2 | 0.731 |
| Routinization | 0.723 | 2 | - | - | - |
| Role Ambiguity | 0.408 | 3 | 1 | 2 | 0.850 |
| Role Conflict | 0.768 | 3 | - | - | - |
| Working Environment | 0.631 | 3 | 1 | 2 | 0.798 |
| Absenteeism | 0.805 | 3 | | | |
| Job Satisfaction | 0.768 | 4 | - | - | - |
| Organizational Commitment | 0.695 | 6 | 1 | 5 | 0.803 |
| Leadership | 0.805 | 4 | - | - | - |
| Work-family Conflict | 0.763 | 3 | - | - | - |
| Job Performance | 0.748 | 4 | - | - | - |
| Turnover Intention | 0.922 | 5 | - | - | - |
| Termination Intention | 0.919 | 3 | - | - | - |

- *Routinization* Cronbach's α is 0.723 and greater than 0.7
- *Role ambiguity* Cronbach's α is 0.408 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.850
- *Role conflict* Cronbach's α is 0.768 and greater than 0.7
- *Working environment* Cronbach's α is 0.631 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.798
- *Absenteeism* Cronbach's α is 0.805 and greater than 0.7

The rest of the variables, such as job satisfaction, organizational commitment, leadership, work-family conflict, and job performance, affects the turnover intention directly. Moreover, the analysis is listed as follows:

- *Job satisfaction* Cronbach's α is 0.768 and greater than 0.7

- *Organizational commitment* — Cronbach's α is 0.695 and less than 0.7, delete 1 item, and the revised Cronbach's α value is 0.803
- *Leadership* — Cronbach's α is 0.805 and greater than 0.7
- *Work-family conflict* — Cronbach's α is 0.763 and greater than 0.7
- *Job performance* — Cronbach's α is 0.748 and greater than 0.7
- *Turnover Intention* — Cronbach's α is 0.922 and greater than 0.7
- *Termination Intention* — Cronbach's α is 0.919 and greater than 0.7

Based on the results of the internal reliability, face and content validities, the measuring instrument was concentrated to 58 items for data collection. The final survey questionnaire is shown in Appendix A.

## 4.3 Demographics and General Profile

The sample population of this study included manufacturing workers who are working in manufacturing organizations around the Knoxville, East Tennessee area. Approximately 180 surveys were distributed, and 147 surveys (81.7%) were returned, but only 138 responses were valid. Table 4.2 presents the frequencies among respondents with regard to their gender, race, age, length of service, salary range and job group.

As shown in Table 4.2, 86.2% of the respondents were male, and 13.8% were female. Almost half (53.6%) of the respondents stated that they were under 40 years of age. Approximately half (47.8%) of the total respondents worked in the organization for less than two years, and 15.9% of the respondents worked in their organization for approximately 3-5 years. Approximately 21% of the respondents state that they had an annual salary less than $30,000, and more than half (53.6%) of the respondents had an annual salary between $30,001 and $40,000. Approximately 16.7% of the respondents were team leaders and had a higher position in the organization.

**Table 4.2:** Frequencies tables of demographic information

| Gender | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Female | 19 | 13.8 | 13.8 | 13.8 |
| | Male | 119 | 86.2 | 86.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |
| Age | | | | | |
| Valid | Under 21 | 20 | 14.5 | 14.5 | 14.5 |
| | 22 - 25 | 19 | 13.8 | 13.8 | 28.3 |
| | 26 - 30 | 12 | 8.7 | 8.7 | 37.0 |
| | 31 - 40 | 23 | 16.7 | 16.7 | 53.6 |
| | 41 - 50 | 41 | 29.7 | 29.7 | 83.3 |
| | 51 or more | 23 | 16.7 | 16.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |
| Length of service | | | | | |
| Valid | Less than 1 year | 33 | 23.9 | 23.9 | 23.9 |
| | 1 - 2+ | 33 | 23.9 | 23.9 | 47.8 |
| | 3 - 5+ | 22 | 15.9 | 15.9 | 63.8 |
| | 6 - 10+ | 15 | 10.9 | 10.9 | 74.6 |
| | 11 - 20+ | 20 | 14.5 | 14.5 | 89.1 |
| | 21 or more | 15 | 10.9 | 10.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |
| Salary range | | | | | |
| Valid | Under $30,000 | 29 | 21.0 | 21.0 | 21.0 |
| | $30,001 - $40,000 | 74 | 53.6 | 53.6 | 74.6 |
| | $40,001 - $50,000 | 21 | 15.2 | 15.2 | 89.8 |
| | $50,001 - $75,000 | 6 | 4.3 | 4.3 | 94.2 |
| | $75,001 - $100,000 | 5 | 3.6 | 3.6 | 97.8 |
| | More than $100,000 | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |
| Job group | | | | | |
| Valid | Team Member | 115 | 83.3 | 83.3 | 83.3 |
| | Team Leader | 10 | 7.2 | 7.2 | 90.5 |
| | Area Coordinator | 2 | 1.4 | 1.4 | 92.0 |
| | Office Group/Sales Rep | 7 | 5.1 | 5.1 | 97.1 |
| | Manager | 4 | 2.9 | 2.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

## 4.4 Turnover Intention Analysis

Structural Equation Modeling (SEM) Path analysis technique was employed to test the hypothesized relationships between independent and dependent variables. This study followed the two-stage modeling approach proposed by Anderson and Gerbing (1988) for path analysis:

- *measurement model analysis*
- *structural model analysis*

The first step for SEM path analysis is the assessment of the measurement model which test the items' reliability and validity. Factor loading and cross loading of all items in the variables should be examined prior reliability and validity test to find out any problem which serves as a pre-requisite for measurement model.

The turnover intention model has six latent variables and twelve exogenous variables. Table 4.3 shows the mean score of factors, number of items and the mean score of items for each construct. Based on the criterion specified in section 4.4, the elimination of individual items from the model processed by the preliminary factor analysis as shown in Table 4.4. AUT1, AUT2, DT1, DT2, and Pay1 has a factor loading less than 0.5, and it was eliminated from the results analysis. Thus, construct autonomy and developing or training was eliminated during this process. Additionally, the summarizes of factor loading and indicator reliability for each item as shown in Table D.2 in Appendix D. Cross loading indicates that how strongly each item loads on the other constructs and the results shown as in the Table D.1 in Appendix D. Reliability and validity test of constructs was performed after the preliminary factor analysis and the results shown in the following subsections.

**Table 4.3:** Resultant factor summary

| Factor | Mean Score | Number of Items | Item Mean Score |
|---|---|---|---|
| Pay | 10.81 | 3 | 3.60 |
| TW | 8.06 | 2 | 4.03 |
| AUT | 7.23 | 2 | 3.62 |
| WS | 9.04 | 3 | 3.01 |
| WL | 7.67 | 3 | 2.56 |
| PO | 9.14 | 3 | 3.05 |
| DT | 6.51 | 2 | 3.26 |
| ROU | 6.21 | 2 | 3.11 |
| RA | 7.41 | 2 | 3.71 |
| RC | 8.04 | 3 | 2.68 |
| WE | 7.65 | 2 | 3.83 |
| ABS | 10.12 | 3 | 3.37 |
| JS | 15.02 | 4 | 3.76 |
| OC | 18.36 | 5 | 3.67 |
| LEA | 16.31 | 4 | 4.08 |
| WFC | 7.36 | 3 | 2.45 |
| JP | 16.15 | 4 | 4.04 |
| TUI | 11.87 | 5 | 2.37 |
| TEI | 6.09 | 3 | 2.03 |

**Table 4.4:** Eliminated items for turnover intention

| Factor | Eliminated Item | Criterion for Elimination | Explanation |
|---|---|---|---|
| Autonomy (AUT) | AUT1<br>AUT2 | Cronbach's Alpha less than 0.7 | For construct autonomy, one item has Cronbach's Alpha less than 0.7, the other item also eliminated. |
| Developing or Training (DT) | DT1<br>DT2 | Factor loading less than 0.5 | For construct developing or training, one item more related to another construct, so the other item also eliminated. |
| Pay (PS) | Pay2 | Factor loading less than 0.5 | This item is more related to another construct. |

### 4.4.1 Measurement Model Analysis (Outer Model)

#### 4.4.1.1 Reliability Analysis

The reliability of instruments was estimated by means of the internal consistency, which by evaluating the within-scale consistency of the responses to the items of the measure. Cronbach's Alpha is the most widely used method for estimating the internal consistency, and it is assessed using 0.7 as the cutoff point criterion. All constructs in the turnover intention model demonstrated sufficient levels of internal consistency reliability as shown in Table 4.5. The Cronbach's Alpha value range from 'Pay' (PS) with a value of .721 to 'Turnover Intention' (TUI) with a value of .913. Composite reliability is also a convenient and sufficient test used to examine the internal consistency, which the general rule of thumb should be greater than of 0.7 to be considered adequate. Composite reliability values estimated for each of the constructs ranged from .838 (Work Stress) to .935 (Turnover Intention) and are also listed in Table 4.5. Cronbach's Alpha assumes unidimensionality and items are equally related to the construct interchangeable. However, Composite reliability takes into consideration the varying factor loading of each item. Therefore, the more factor loadings fluctuate among items, the higher the discrepancy between the values of Cronbach Alpha and Composite reliability. All the values obtained from the Cronbach's Alpha and Composite reliability indicate that the variables in this study have a satisfactory level of internal consistency.

#### 4.4.1.2 Validity Analysis

Validity refers to the suitability or meaningfulness of the measurement, defined as the degree to which a test measures what it is supposed to measure and permits the appropriate interpretation of scores (Gay et al., 2006). The validity of the instruments was assessed using face validity, content validity, convergent validity, and discriminant validity, which are all addressed in the following.

**Table 4.5:** Internal consistency reliability of the survey instrument

| Factors | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| ABS | 0.775 | 0.868 | 0.688 |
| JP | 0.842 | 0.894 | 0.678 |
| JS | 0.790 | 0.865 | 0.616 |
| LEA | 0.878 | 0.916 | 0.732 |
| OC | 0.780 | 0.851 | 0.539 |
| PO | 0.827 | 0.895 | 0.742 |
| Pay | 0.721 | 0.873 | 0.775 |
| RA | 0.797 | 0.908 | 0.831 |
| RC | 0.752 | 0.856 | 0.667 |
| ROU | 0.788 | 0.904 | 0.825 |
| TUI | 0.913 | 0.935 | 0.741 |
| TW | 0.769 | 0.892 | 0.805 |
| WE | 0.761 | 0.891 | 0.803 |
| WFC | 0.894 | 0.934 | 0.826 |
| WL | 0.788 | 0.875 | 0.700 |
| WS | 0.727 | 0.838 | 0.635 |

To ensure the face and content validity of our survey instrument, we performed a literature review in conjunction with the items on the measuring instrument and searching for studies that identified factors that are relevant in relation to job satisfaction, organizational commitment, job performance, leadership, work-family conflict, turnover intention, and so on. Comments and feedback were also provided by faculties from the Department of Industry and Systems Engineering and Department of Office of Information Technology. The final survey instrument was modified according to the comments and feedback, which made it adequate face and content validity.

***Convergent validity***

Convergent validity essentially refers to the degree of similarity between the scores of the two instruments are supposed to measure the same concept. Therefore, a relatively high correlation between the two instruments should be expected. In this

study, internal consistency convergent validity is assessed using indicator reliability (factor loading) and Average Variance Extracted (AVE). The cutoff criterion for the convergent validity was considered as acceptable of 0.50 for all constructions. As shown in Table 4.5, the AVE values range from 'Organizational Commitment' with a value of .539 to 'Role Ambiguity' with a value of .831. These values indicate that all variables have an acceptable level of convergent validity. In another word, a construct converges or share a high proportion of variance formed from all of the items.

***Discriminant validity***

Discriminant validity refers to the scores of the two instruments are supposed to measure a related but different concept. Discriminant validity in this study was assessed using Fornell-Larcker criterion analysis by comparing the square roots of the AVEs for two latent variables and their intercorrelations. The correlation matrix, which includes the correlation between variables in the lower left off-diagonal elements and the square root of AVE along the diagonal are shown in Table 4.6. It implies adequate discriminant validity due to all the diagonal elements are greater than any other element in the corresponding row and column.

### 4.4.2 Structural Model Analysis (Inner Model)

The construct measures are reliable and valid have been confirmed in the previous section, we will continue to address the assessment of the structural model results in this section. Six latent variables and ten exogenous variables were derived from the measurement model analysis. The key criteria for assessing the structural model, such as path coefficients, the coefficient of determination $R^2$, effect size $f^2$ and the predictive relevance $Q^2$ are examined in the following sections.

**Table 4.6:** Discriminant Validity Analysis

| | ABS | JP | JS | LEA | OC | PO | Pay | RA | RC | ROU | TUI | TW | WE | WFC | WL | WS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABS | .829 | | | | | | | | | | | | | | | |
| JP | -.242 | .823 | | | | | | | | | | | | | | |
| JS | -.479 | .399 | .785 | | | | | | | | | | | | | |
| LEA | -.470 | .365 | .568 | .856 | | | | | | | | | | | | |
| OC | -.569 | .395 | .729 | .577 | .734 | | | | | | | | | | | |
| PO | -.392 | -.026 | .433 | .236 | .314 | .861 | | | | | | | | | | |
| Pay | -.354 | .017 | .347 | .367 | .390 | .472 | .881 | | | | | | | | | |
| RA | -.417 | .111 | .296 | .186 | .314 | .525 | .341 | .912 | | | | | | | | |
| RC | .401 | -.236 | -.417 | -.421 | -.348 | -.203 | -.260 | -.321 | .817 | | | | | | | |
| ROU | -.334 | .059 | .403 | .170 | .313 | .412 | .356 | .451 | -.075 | .908 | | | | | | |
| TUI | .550 | -.260 | -.677 | -.409 | -.645 | -.435 | -.385 | -.328 | .362 | -.350 | .861 | | | | | |
| TW | -.230 | .251 | .374 | .275 | .342 | .251 | .231 | .325 | -.279 | .284 | -.285 | .897 | | | | |
| WE | -.456 | .164 | .556 | .507 | .540 | .354 | .419 | .347 | -.426 | .375 | -.392 | .355 | .896 | | | |
| WFC | .672 | -.337 | -.471 | -.503 | -.450 | -.325 | -.195 | -.295 | .412 | -.263 | .546 | -.230 | -.269 | .909 | | |
| WL | .564 | -.245 | -.395 | -.435 | -.435 | -.253 | -.177 | -.258 | .391 | -.230 | .422 | -.266 | -.373 | .760 | .836 | |
| WS | .402 | -.075 | -.411 | -.348 | -.371 | -.371 | -.333 | -.334 | .314 | -.516 | .398 | -.342 | -.393 | .421 | .425 | .797 |

#### 4.4.2.1 Collinearity Assessment

The collinearity between each set of predictor variables was examined before the structural model evaluation and hypothesis testing. The SmartPlS results in Table 4.7 show that all VIF values for all the predictor constructions were clearly below the threshold value of 5. The predictor variable of 'Work-family Conflict' to a latent variable of 'Job Satisfaction' had the highest VIF value of 3.587. Therefore, it is concluded that the absence of collinearity among predictors in the structural model.

#### 4.4.2.2 Path Coefficients

The estimates of the path coefficients, which represent the hypothesized relationships among the constructs, are obtained for the structural model relationships after running the PLS-SEM algorithm. The significance of the path coefficients is determined by *p*-value which calculated using the bootstrapping method. The estimated path coefficients and the significance level are shown in Table 4.8. Comparing the relative importance of factors that affect 'Turnover Intention' (TUI), it is observed that 'Job Satisfaction' (JS), 'Organizational Commitment' (OC) and 'Work-family Conflict' (WFC) were most important. Meantime, 'Leadership' (LEA) and 'Work-family Conflict' (WFC) significantly impact 'Job Satisfaction' (JS) and 'Job Satisfaction' (JS) significantly impact 'Organizational Commitment' (OC).

#### 4.4.2.3 Coefficient of Determination $R^2$

The coefficient of determination $R^2$ represented how well the model fits the data. The $R^2$ value for 'Turnover Intention' (TUI), 'Job Satisfaction' (JS) and 'Organizational Commitment' (OC) are .572, .542 and .640, respectively. However, the coefficient of determination $R^2$ for 'Job Performance' (JP) is only .159. This result illustrates that it is moderate for the model fits the data as the behavior studies and the complexity model.

**Table 4.7:** Collinearity assessment

| Predictor | VIF | | | |
|---|---|---|---|---|
| | JP | OC | JS | TUI |
| ABS | | 2.324 | 1.96 | |
| JP | | | | 1.268 |
| JS | 1 | | 2.144 | 2.388 |
| LEA | | 1.842 | 1.899 | 1.778 |
| OC | | | | 2.38 |
| PO | | 1.721 | 1.793 | |
| Pay | | 1.562 | 1.548 | |
| RA | | 1.737 | 1.77 | |
| RC | | 1.579 | 1.591 | |
| ROU | | 1.786 | 1.859 | |
| TUI | | | | |
| TW | | 1.287 | 1.313 | |
| WE | | 1.994 | 1.849 | |
| WFC | | 3.587 | | 1.471 |
| WL | | 2.641 | 1.716 | |
| WS | | 1.734 | 1.73 | |

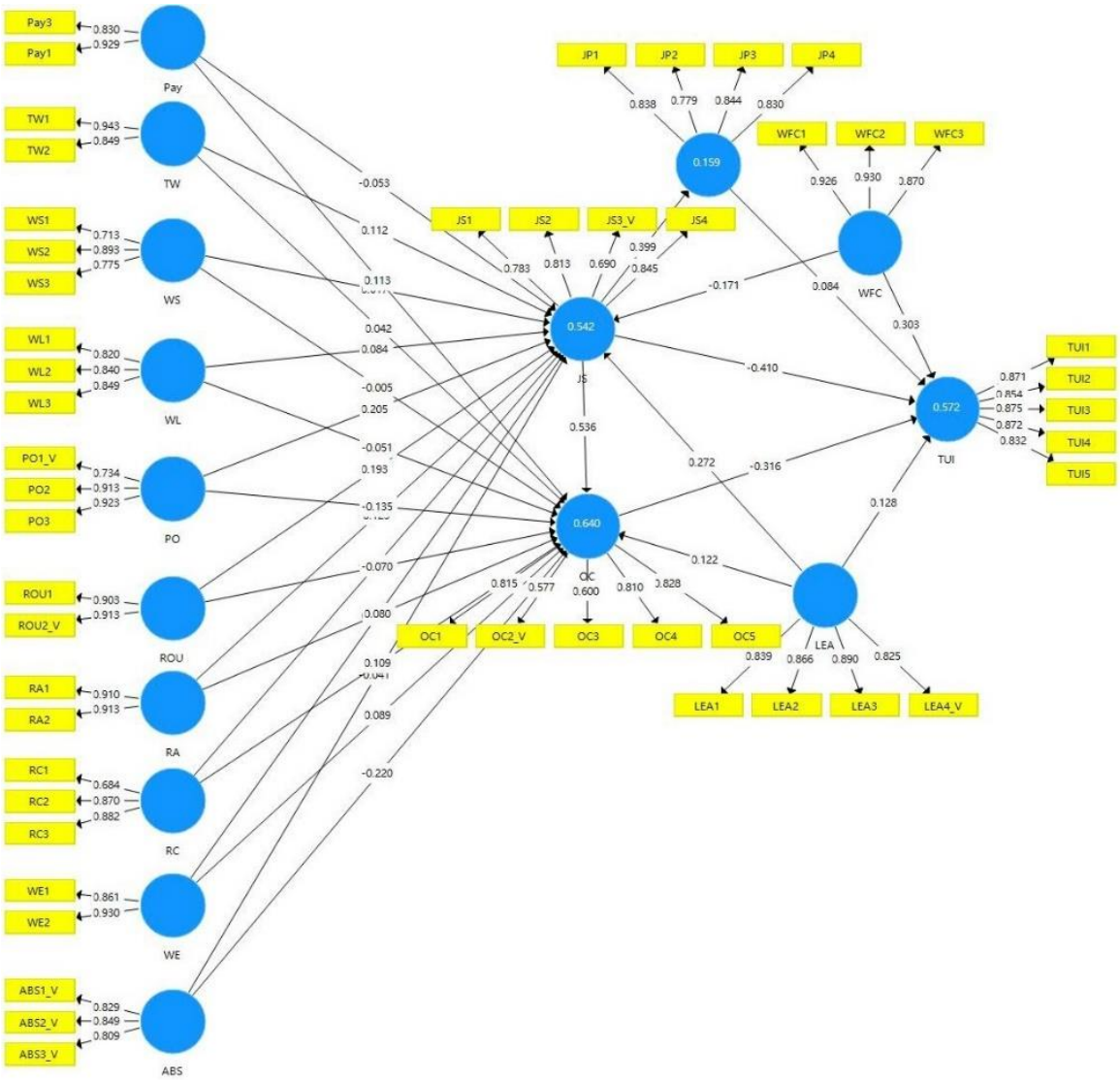



**Figure 4.1:** Structural model path coefficient

**Table 4.8:** Size and Significance of Path Coefficients

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|---|---|
| ABS -> JS | -0.041 | -0.044 | 0.094 | 0.429 | 0.668 |
| ABS -> OC | -0.22 | -0.222 | 0.074 | 2.954 | 0.003 |
| JP -> TUI | 0.084 | 0.083 | 0.089 | 0.943 | 0.346 |
| JS -> JP | 0.399 | 0.407 | 0.091 | 4.385 | 0 |
| JS -> OC | 0.536 | 0.542 | 0.099 | 5.441 | 0 |
| JS -> TUI | -0.41 | -0.4 | 0.109 | 3.771 | 0 |
| LEA -> JS | 0.272 | 0.266 | 0.106 | 2.577 | 0.01 |
| LEA -> OC | 0.122 | 0.118 | 0.091 | 1.341 | 0.18 |
| LEA -> TUI | 0.128 | 0.126 | 0.118 | 1.088 | 0.277 |
| OC -> TUI | -0.316 | -0.325 | 0.104 | 3.054 | 0.002 |
| PO -> JS | 0.205 | 0.193 | 0.097 | 2.116 | 0.034 |
| PO -> OC | -0.135 | -0.127 | 0.08 | 1.681 | 0.093 |
| Pay -> JS | -0.053 | -0.037 | 0.084 | 0.634 | 0.526 |
| Pay -> OC | 0.113 | 0.111 | 0.071 | 1.597 | 0.11 |
| RA -> JS | -0.123 | -0.111 | 0.079 | 1.563 | 0.118 |
| RA -> OC | 0.08 | 0.074 | 0.079 | 1.012 | 0.311 |
| RC -> JS | -0.127 | -0.132 | 0.087 | 1.458 | 0.145 |
| RC -> OC | 0.109 | 0.11 | 0.078 | 1.389 | 0.165 |
| ROU -> JS | 0.193 | 0.182 | 0.095 | 2.039 | 0.042 |
| ROU -> OC | -0.07 | -0.076 | 0.077 | 0.905 | 0.365 |
| TW -> JS | 0.112 | 0.108 | 0.074 | 1.508 | 0.131 |
| TW -> OC | 0.042 | 0.047 | 0.072 | 0.587 | 0.557 |
| WE -> JS | 0.218 | 0.216 | 0.096 | 2.277 | 0.023 |
| WE -> OC | 0.089 | 0.089 | 0.092 | 0.973 | 0.331 |
| WFC -> JS | -0.171 | -0.154 | 0.12 | 1.43 | 0.153 |
| WFC -> TUI | 0.303 | 0.306 | 0.076 | 4.002 | 0 |
| WL -> JS | 0.084 | 0.073 | 0.096 | 0.878 | 0.38 |
| WL -> OC | -0.051 | -0.046 | 0.084 | 0.608 | 0.544 |
| WS -> JS | 0.017 | 0.006 | 0.103 | 0.166 | 0.868 |
| WS -> OC | -0.005 | -0.013 | 0.069 | 0.078 | 0.938 |

#### 4.4.2.4 Effect Size $f^2$

The effect size $f^2$ of all the predicting constructs also obtained after running the PLS-SEM algorithm, as shown in Table 4.9. It is easily observation that 'Job satisfaction' (JS), 'Organizational Commitment' (OC) and 'Work-family Conflict' (WFC) has an above medium effect size indicating that these variables are the influential factors affecting 'Turnover Intention' (TUI). Therefore, the organization needs to pay special attention to the employee's job satisfaction, organizational commitment, and work-family balance.

#### 4.4.2.5 Predictive Relevance $Q^2$

The predictive relevance $Q^2$ values obtained after running the blindfolding procedure. The results show that the $Q^2$ values for job performance, job satisfaction, organizational commitment, and turnover intention were .090, .284, .291 and .386 respectively. It is concluded that the path model has predictive relevance because of all of the $Q^2$ value greater than zero based on the criterion mentioned in Chapter 4.

**Table 4.9:** Effect Size $f^2$

| | JP | JS | OC | TUI |
|---|---|---|---|---|
| ABS | | 0.002 | 0.068 | |
| JP | | | | 0.013 |
| JS | 0.189 | | 0.373 | 0.165 |
| LEA | | 0.088 | 0.022 | 0.022 |
| OC | | | | 0.098 |
| PO | | 0.053 | 0.028 | |
| Pay | | 0.004 | 0.023 | |
| RA | | 0.019 | 0.01 | |
| RC | | 0.022 | 0.021 | |
| ROU | | 0.046 | 0.007 | |
| TUI | | | | |
| TW | | 0.021 | 0.004 | |
| WE | | 0.052 | 0.012 | |
| WFC | | 0.018 | | 0.146 |
| WL | | 0.006 | 0.004 | |
| WS | | 0 | 0 | |

### 4.4.3 Hypotheses testing for Turnover Intention

#### 4.4.3.1 Correlation Analysis for Turnover Intention

In order to examine the relationship between job satisfaction, organizational commitment, leadership, work-family conflict, job performance, and turnover intention, canonical correlation coefficients methods were used to compute the correlations and strength of different variables.

As shown in Table 4.10, the overall measure of manufacturing workers in the surveyed organization in Tennessee are as follows: job satisfaction value 3.75 ± 0.87, organizational commitment value 3.67 ± 0.91, leadership value 4.07 ± 0.82, work-family conflict value 2.85 ± 1.11, job performance value 4.04 ± 0.63 and turnover intention value 2.37 ± 1.10. Table 4.10 also displays the correlations among all of these variables in the model. With only a few exceptions, job satisfaction, organizational commitment, leadership, and job performance have a negative relationship with work-family conflict and turnover intention. Moreover, job satisfaction and organizational commitment are strong, negatively related to turnover intention, and work-family conflict is strong, positively related to turnover intention. Detailed expatiations are reported in Table 4.10.

**Table 4.10:** Correlations between constructs

| Variables | Mean | S.D. | JS | OC | LEA | WFC | JP | TUI |
|---|---|---|---|---|---|---|---|---|
| Job Satisfaction (JS) | 3.75 | 0.87 | 1.000 | | | | | |
| Organizational Commitment (OC) | 3.67 | 0.91 | .789*** | 1.000 | | | | |
| Leadership (LEA) | 4.07 | 0.82 | .641*** | .628*** | 1.000 | | | |
| Work-family Conflict (WFC) | 2.85 | 1.11 | -.541*** | -.550*** | -.542*** | 1.000 | | |
| Job Performance (JP) | 4.04 | 0.63 | .503*** | .530*** | .505*** | -.379* | 1.000 | |
| Turnover Intention (TUI) | 2.37 | 1.10 | -.729*** | -.697*** | -.475*** | .602*** | -.351 | 1.000 |

* Correlations were significant at $p < .05$
** Correlations were significant at $p < .01$
*** Correlations were significant at $p < .001$

#### 4.4.3.2 Hypotheses Testing for Turnover Intention

Confirmatory factor analysis was used to evaluate the research model. In this section, ten hypotheses were postulated and tested in order to investigate relationships between turnover intention (TUI) and its antecedents: job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC) and job performance (JP). The results reported in Table 4.11 provide support for six hypotheses (H1a, H1c, H1d, H1g, H1i & H1j) and reject four hypotheses (H1b, H1e, H1f & H1h). Those hypotheses that were supported are significant at a confidence level of either $p < .000$, .01 or .05.

H1a stated that work-family conflict is a significant predictor of employees' turnover intentions. As evident from Table 4.11, the path coefficient between the two variables is .303, and the $p$-value is .000. This implies that if manufacturing workers are not handling the work and family balance the propensity to leave the organization is increased. Meanwhile, results of the correlation test indicated that a significant positive association between work-family conflict and turnover intention ($r = .602$, $p < .001$). Thus, hypothesis H1a was accepted.

**Table 4.11:** Results of SEM hypothesis testing for Turnover Intention

| Hypothesis | Proposed hypothesis relationship | Positive or Negative | Estimate results | P | Results |
|---|---|---|---|---|---|
| H1a | WFC -> TUI | + | 0.303 | 0.000*** | Significant |
| H1b | JP -> TUI | + | 0.084 | 0.346 | Non-significant |
| H1c | JS -> TUI | - | -0.410 | 0.000*** | Significant |
| H1d | OC -> TUI | - | -0.316 | 0.002** | Significant |
| H1e | LEA -> TUI | + | 0.128 | 0.277 | Non-significant |
| H1f | WFC -> JS | - | -0.171 | 0.153 | Non-significant |
| H1g | LEA -> JS | + | 0.272 | 0.01** | Significant |
| H1h | LEA -> OC | + | 0.122 | 0.18 | Non-significant |
| H1i | JS -> JP | + | 0.399 | 0.000*** | Significant |
| H1j | JS -> OC | + | 0.536 | 0.000*** | Significant |

* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

The results in Table 4.10 show that there is no significant association between job performance and turnover intention ($r$ = -.351, $p$ > 0.05). Moreover, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .084, $p$ = .346), as depicted in Table 4.11. Therefore, hypothesis H1b was rejected.

H1c stated that job satisfaction has a significant negative effect on their turnover intention. As evident from Table 4.11, the path coefficient between the two variables is -.410 and the $p$-value is less than .001. Thus, the negative relationship between job satisfaction and turnover intention is significant. Moreover, the results of the correlation test indicated that a significant negative association between job satisfaction and turnover intention ($r$ = -.729, $p$ < .001), which suggested that if manufacturing workers are satisfied with their jobs, there is less tendency to leave their organization, as shown in Table 4.10. Consequently, hypothesis H1c is supported. The same result was also found from many different scholars, and they all concluded that employees are satisfied with their jobs to lead to a decrease in turnover intention (Hellman,1997; Lu, While & Barriball 2005; Hayes & O'Brien-Pallas 2006).

H1d predicted that organizational commitment has a significant negative effect on turnover intention. As evident from Table 4.11, the path coefficient between the two variables is -.316 and the $p$-value is .002. This illustrated that significant negative influence of organizational commitment to turnover intention. Also, as shown in Table 4.10, a significant negative relationship between organizational commitment and turnover intention ($r$ = -.697, $p$ < .001) presented in the correlation test, which illustrated that if manufacturing workers' level of commitment to the organization is low, their intention to leave the organization are high. Accordingly, H1d was supported.

The results in Table 4.10 show that there is a significant association between leadership and turnover intention ($r$ = -.475, $p$ < .001). This suggested that if the manufacturing workers satisfied with their leadership, their intention to leave the organization also decrease. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .128, $p$ = .277), as shown in Table 4.11. Therefore, hypothesis H1e was rejected.

H1f stated that work-family conflict has a significant negative effect on their job satisfaction. Even though the results of the correlation test indicated that a significant positive association between work-family conflict and turnover intention ($r$ = -.541, $p$ < .001), which illustrated that if the manufacturing workers have high work-family conflict, they are not satisfied with their job. As evident from Table 4.11, the results of investigating the structural equation model presented a significant, negative effect of work-family conflict on job satisfaction ($\beta$ = -.171, $p$ = .153). Thus, hypothesis H1f was rejected.

H1g stated that leadership has a significant positive effect on their job satisfaction. As evident from Table 4.11, the path coefficient between the two variables is .272, and the $p$-value is .01. Furthermore, as shown in Table 4.10, leadership showed positive correlations with job satisfaction ($r$ = .641, $p$ < .001), which indicated that if manufacturing workers who satisfied with their leadership also satisfied with their job. Thus, the positive relationship between leadership and job satisfaction is significant, and hypothesis H1g is supported.

The results in Table 4.10 show that there is a significant, positive association between leadership and organizational commitment ($r$ = .628, $p$ < .001), which indicated that if manufacturing workers who satisfied with their leadership also have a high level of commitment to the organization. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .122, $p$ = .180), as shown in Table 4.11. Therefore, hypothesis H1h was rejected.

As shown in Table 4.10, job satisfaction showed significant positive correlations with job performance ($r$ = .503, $p$ < .001), which implies that if manufacturing workers who satisfied with their jobs also have a high job performance. This implies that manufacturing workers who have higher job satisfaction also have higher job performance. Moreover, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .399, $p$ = .000), as shown in Table 4.11. Therefore, hypothesis H1i was supported.

H1j stated that job satisfaction has a significant positive effect on their organizational commitment. As evident from Table 4.10, the path coefficient between the two variables is .536, and the $p$-value is .000. Further, results of the correlation

test indicated that a significant positive association between work-family conflict and turnover intention ($r$ = .789, $p$ < .001), which illustrated that if the manufacturing workers who have higher job satisfaction also have a higher level of commitment to the organization. Thus, hypothesis H1j was accepted.

#### 4.4.3.3 Correlation Analysis for Job Satisfaction and Organizational Commitment

Canonical correlation coefficients methods were also used to compute the correlations and strength of different variables and job satisfaction and organizational commitment, respectively. The results are reported in Table 4.12. It is easily found that pay, team-worker, promotion opportunity, developing or training, routinization and working environment have a significant, positive correlation with job satisfaction and organizational commitment, respectively. However, work stress, workload, role conflict, and absenteeism have a significant, negative correlation with job satisfaction and organizational commitment, respectively. Role ambiguity was found has a significant, negative correlation with job satisfaction but no significant correlation with organizational commitment. It was surprisingly found that no significant correlation between autonomy and both job satisfaction and organizational commitment.

#### 4.4.3.4 Hypotheses Testing for Job Satisfaction

In the regression testing, ten hypotheses were postulated and tasted for job satisfaction. The results reported in Table 4.13 provide support for three hypotheses (H2b, H2f & H2h) and reject seven hypotheses (H2a, H2c, H2d, H2e, H2g, H2i & H2j). Those hypotheses that were supported are significant at a confidence level of either $p$ < .000, .01 or .05.

H2a predicted that absenteeism has a significant, positive effect on job satisfaction. As evident from Table 4.12, the path coefficient between the two variables is -.578, and the $p$-value is less than .001. However, an insignificant negative relationship between absenteeism and job satisfaction ($\beta$ = -.041, $p$ = .668) presented in the correlation test, as shown in Table 4.13. Accordingly, H2a was rejected.

**Table 4.12:** Correlations between constructs for JS and OC

| Variables | Mean | S.D. | JS | OC |
|---|---|---|---|---|
| Pay | 3.51 | 0.96 | 0.425*** | 0.444*** |
| TW | 4.03 | 0.85 | 0.407*** | 0.439*** |
| AUT | 3.62 | 0.93 | 0.251 | 0.230 |
| WS | 3.01 | 1.13 | -0.566*** | -0.445** |
| WL | 2.56 | 1.17 | -0.471*** | -0.507*** |
| PO | 3.03 | 0.99 | 0.510*** | 0.410*** |
| DT | 3.26 | 0.89 | 0.521*** | 0.496*** |
| ROU | 3.11 | 1.12 | 0.565*** | 0.355** |
| RA | 3.71 | 1.01 | -0.468*** | -0.349 |
| RC | 2.68 | 0.93 | -0.445** | -0.439** |
| WE | 3.83 | 0.91 | 0.637*** | 0.555*** |
| ABS | 3.37 | 0.94 | -0.578*** | -0.618*** |

* Correlations were significant at $p < .05$
** Correlations were significant at $p < .01$
*** Correlations were significant at $p < .001$

**Table 4.13:** Results of SEM hypothesis testing for Job Satisfaction

| Hypothesis | Proposed hypothesis relationship | Positive or Negative | Estimate results | P | Results |
|---|---|---|---|---|---|
| H2a | ABS -> JS | - | -0.041 | 0.668 | Non-significant |
| H2b | PO -> JS | + | 0.205 | 0.034 | Significant |
| H2c | Pay -> JS | - | -0.053 | 0.526 | Non-significant |
| H2d | RA -> JS | - | -0.123 | 0.118 | Non-significant |
| H2e | RC -> JS | - | -0.127 | 0.145 | Non-significant |
| H2f | ROU -> JS | - | -0.193 | 0.042 | Significant |
| H2g | TW -> JS | + | 0.112 | 0.131 | Non-significant |
| H2h | WE -> JS | + | 0.218 | 0.023 | Significant |
| H2i | WL -> JS | + | 0.084 | 0.380 | Non-significant |
| H2j | WS -> JS | + | 0.017 | 0.868 | Non-significant |

* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

H2b predicted that promotion opportunity has a significant effect on their job satisfaction. As evident from Table 4.12, the correlation coefficient between the two variables is .510, and the *p*-value is less than .001, which implies the manufacturing workers satisfied with their jobs if their promotion opportunity is high. Moreover, the results of the regression test indicated that a significant negative association between promotion opportunity and job satisfaction ($\beta$ = .205, $p$ = .034). Thus, hypothesis H2e was supported.

H2c stated that pay has a significant positive effect on their job satisfaction. As evident from Table 4.12, the correlation coefficient between the two variables is .425, and the *p*-value is less than .001. However, the results of the regression test indicated that an insignificant positive association between pay and job satisfaction ($\beta$ = -.053, $p$ = .526). Thus, hypothesis H2c was rejected.

The results in Table 4.12 show that there is a significant association between role ambiguity and job satisfaction ($r$ = -.468, $p$ < .001). But the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = -.123, $p$ = .118), as shown in Table 4.13. Therefore, hypothesis H2d was rejected.

H2e predicted that role conflict has a significant effect on their job satisfaction. The results in Table 4.12 show that there is a significant association between role conflict and job satisfaction ($r$ = -.445, $p$ < .01). However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = -.127, $p$ = .145), as shown in Table 4.13. Therefore, hypothesis H2e was rejected.

As shown in Table 4.12, routinization has a significant association with job satisfaction ($r$ = .565, $p$ < .001). Moreover, regression test result shows that there is an insignificant influence of these two variables ($\beta$ = .193, $p$ = .042), as shown in Table 4.13. Therefore, hypothesis H2f was supported.

Team-worker showed positive significant correlations with job satisfaction ($r$ = .407, $p$ < .001), as shown in Table 4.12. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .112, $p$ = .131), as shown in Table 4.13. Therefore, hypothesis H2g was rejected.

H2h predicted that the working environment has a significant, positive effect on job satisfaction. As evident from Table 4.12, a significant positive relationship

between working environment and job satisfaction ($r$ = .637, $p$ < .001) presented in the correlation test, which indicated that if manufacturing workers are satisfied with their working environment also satisfied with their jobs. Moreover, the path coefficient between the two variables is .218, and the $p$-value is .023, as shown in Table 4.13. Accordingly, H2h was supported.

H2i stated that workload has a significant negative effect on their job satisfaction. As evident from Table 4.12, the correlation coefficient between the two variables is -.471, and the $p$-value is less than .001. However, the results of the regression test indicated that an insignificant association between workload and job satisfaction ($\beta$ = .084, $p$ = .380). Thus, hypothesis H2i was rejected.

As shown in Table 4.12, work stress has a significant negative correlation with job satisfaction ($r$ = -.566, $p$ < .001). But regression test result shows that there is an insignificant influence of these two variables ($\beta$ = .017, $p$ = .868), as shown in Table 4.13. Therefore, hypothesis H2j was rejected.

#### 4.4.3.5 Hypotheses Testing for Organizational Commitment

In the regression testing, ten hypotheses were postulated and tasted for organizational commitment. The results reported in Table 4.14 provide support for one hypothesis (H3a) and reject night hypotheses (H3b, …, H3j). Those hypotheses that were supported are significant at a confidence level of either $p$ < .000, .01 or .05.

H3a predicted that absenteeism has a significant, positive effect on organizational commitment. As evident from Table 4.14, the path coefficient between the two variables is -.22 and the $p$-value are .003. Also, a significant negative relationship between absenteeism and organizational commitment ($r$ = -.618, $p$ < .001) presented in the correlation test, as shown in Table 4.12. Accordingly, H3a was supported.

H3b predicted that promotion opportunity has a significant effect on their organizational commitment. As evident from Table 4.12, the correlation coefficient between the two variables is .410, and the $p$-value is less than .001. However, the results of the regression test indicated that an insignificant negative association between promotion opportunity and organizational commitment ($\beta$ = -.135, $p$ = .093), as shown in Table 4.14. Thus, hypothesis H3b was rejected.

**Table 4.14:** Results of SEM hypothesis testing for Organizational Commitment

| Hypothesis | Proposed hypothesis relationship | Positive or Negative | Estimate results | P | Results |
|---|---|---|---|---|---|
| H3a | ABS -> OC | - | -0.22 | 0.003 | Significant |
| H3b | PO -> OC | - | -0.135 | 0.093 | Non-significant |
| H3c | Pay -> OC | + | 0.113 | 0.110 | Non-significant |
| H3d | RA -> OC | + | 0.08 | 0.311 | Non-significant |
| H3e | RC -> OC | + | 0.109 | 0.165 | Non-significant |
| H3f | ROU -> OC | - | -0.07 | 0.365 | Non-significant |
| H3g | TW -> OC | + | 0.042 | 0.557 | Non-significant |
| H3h | WE -> OC | + | 0.089 | 0.331 | Non-significant |
| H3i | WL -> OC | - | -0.051 | 0.544 | Non-significant |
| H3j | WS -> OC | - | -0.005 | 0.938 | Non-significant |

* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

H3c stated that pay has a significant positive effect on their organizational commitment. As evident from Table 4.12, the correlation coefficient between the two variables is .444, and the $p$-value is less than .001. However, the results of the regression test indicated that an insignificant positive association between pay and organizational commitment ($\beta = .113$, $p = .110$). Thus, hypothesis H3c was rejected.

The results in Table 4.12 show that there is an insignificant association between role ambiguity and organizational commitment ($r = -.349$, $p > .05$). Moreover, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta = .08$, $p = .311$), as shown in Table 4.14. Therefore, hypothesis H3d was rejected.

H3e predicted that role conflict has a significant effect on their organizational commitment. The results in Table 4.12 show that there is a significant association between role conflict and organizational commitment ($r = -.439$, $p < .01$). However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta = .109$, $p = .165$), as shown in Table 4.14. Therefore, hypothesis H3e was rejected.

As shown in Table 4.12, routinization has a significant association with organizational commitment ($r$ = .355, $p$ < .01). But regression test result shows that there is an insignificant influence of these two variables ($\beta$ = -.070, $p$ = .365), as shown in Table 4.14. Therefore, hypothesis H3f was rejected.

Team-worker showed positive significant correlations with organizational commitment ($r$ = .439, $p$ < .001), as shown in Table 4.12. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .042, $p$ = .557), as shown in Table 4.14. Therefore, hypothesis H3g was rejected.

H3h predicted that the working environment has a significant, positive effect on organizational commitment. As evident from Table 4.12, a significant positive relationship between working environment and organizational commitment ($r$ = .555, $p$ < .001) presented in the correlation test, which indicated that if manufacturing workers are satisfied with their working environment also have a level of commitment to the organization. However, results of the regression test indicated that an insignificant association between working environment and organizational commitment ($\beta$ = .089, $p$ = .331). Thus, hypothesis H3h was rejected.

H3i stated that workload has a significant negative effect on their organizational commitment. As evident from Table 4.12, the correlation coefficient between the two variables is -.507, and the $p$-value is less than .001. However, the path coefficient between the two variables is -.051 and the $p$-value is .544, as shown in Table 4.14. Accordingly, H3i was rejected.

As shown in Table 4.12, work stress has a significant negative correlation with organizational commitment ($r$ = -.445, $p$ < .01). But regression test result shows that there is an insignificant influence of these two variables ($\beta$ = -.005, $p$ = .938), as shown in Table 4.14. Therefore, hypothesis H3j was rejected.

## 4.5 Termination Intention Analysis

To assess dimensions for the termination intention, which concept was first proposed, exploratory factor analysis (EFA) was performed on the survey items with regard to the variables that are antecedent to the termination intention. Because there was no a priori theory about which items belong to the construct of termination intention, EFA was performed before confirmatory factor analysis (CFA). By examining the results from a principal components analysis, we can arrive at the number of factors for termination intention. After EFA, which explores the factor structure, we continue to perform the next step with the CFA which determines the factor structure of the dataset. In another words, we would use CFA to confirm that factor structure which was extracted in the EFA. In the last step, we will test the hypothesis by using structural equation modeling and draw our conclusions.

### 4.5.1 Exploratory Factor Analysis

The essential criteria for EFA are the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity which is mentioned in Chapter 3.5. The table 4.15 presents the KMO and Bartlett's test of latent variables and results showed the KMO measure of sampling adequacy at a value of 0.822 (> 0.50) and Bartlett's test of sphericity is significant at $p$ = .000, indicating that the data were appropriate for the factor analysis.

**Table 4.15:** KMO and Bartlett's Test

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .822 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 3145.313 |
| | df | 780 |
| | Sig. | .000 |

**Table 4.16:** Rotated Component Matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WFC2 | .804 | | | | | | | | | | |
| WL2 | .792 | | | | | | | | | | |
| WFC1 | .790 | | | | | | | | | | |
| WL1 | .751 | | | | | | | | | | |
| WFC3 | .738 | | | | | | | | | | |
| WL3 | .631 | | | | | | | | | | |
| LEA2 | | .846 | | | | | | | | | |
| LEA3 | | .804 | | | | | | | | | |
| LEA4_V | | .706 | | | | | | | | | |
| LEA1 | | .616 | | | | | | | | | |
| JP4 | | | .810 | | | | | | | | |
| JP3 | | | .804 | | | | | | | | |
| JP2 | | | .795 | | | | | | | | |
| JP1 | | | .710 | | | | | | | | |
| OC4 | | | | .837 | | | | | | | |
| OC5 | | | | .745 | | | | | | | |
| OC3 | | | | .605 | | | | | | | |
| OC1 | | | | .555 | | | | | | | |
| ABS1 | | | | .527 | | | | | | | |
| DT2 | | | | | .819 | | | | | | |
| RA2 | | | | | .818 | | | | | | |
| RA1 | | | | | .805 | | | | | | |
| ROU1 | | | | | .573 | | | | | | |
| WS1 | | | | | | .731 | | | | | |
| WS3 | | | | | | .721 | | | | | |
| WS2 | | | | | | .663 | | | | | |
| Pay1 | | | | | | | .750 | | | | |
| Pay3 | | | | | | | .701 | | | | |
| Pay2 | | | | | | | .685 | | | | |
| RC2 | | | | | | | | .786 | | | |
| RC3 | | | | | | | | .753 | | | |
| RC1 | | | | | | | | .691 | | | |
| PO1_V | | | | | | | | | .676 | | |
| JS3_V | | | | | | | | | .574 | | |
| JS2 | | | | | | | | | .543 | | |
| JS1 | | | | | | | | | .518 | | |
| TW2 | | | | | | | | | | .824 | |
| TW1 | | | | | | | | | | .821 | |
| AUT2 | | | | | | | | | | | .844 |
| AUT1 | | | | | | | | | | | .811 |
| Eigenvalues | 10.687 | 3.488 | 2.723 | 2.324 | 1.956 | 1.527 | 1.443 | 1.398 | 1.205 | 1.132 | 1.061 |
| % of Variance | 26.718 | 8.719 | 6.808 | 5.810 | 4.891 | 3.817 | 3.608 | 3.495 | 3.012 | 2.830 | 2.653 |
| Cumulative % | 26.718 | 35.437 | 42.245 | 48.055 | 52.946 | 56.763 | 60.371 | 63.866 | 66.877 | 69.708 | 72.361 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 9 iterations.

As we mentioned in the literature review, there is no study that refers to the employee termination intention. Thus, we make an assumption that all the factors are related to turnover intention will also affect termination intention. So, it is now possible to run the factor analysis with all the survey items concerning the termination intention using SPSS based on the item removal criteria mentioned in Chapter 3.5. The results show that the factor structure is not clean because there are cross-loading items and low factor loading items on the factors. According to the item removal criteria, we removed the unqualified items to achieve better factor structure. The updated Pattern Matrix with clean factor structure can be found in Table 4.16.

Table 4.16 provides the results of rotating all the latent variables. Now it is possible to find out that the factor structure is very clean, as the convergence and discriminant validity is evident with all survey items possessing high loadings on the factors. Varimax with Kaiser Normalization was used in the factor matrix rotation, and only those factors loading less than 0.5 were eliminated.

In determining the number of components to retain, the literature has multiple methods and criteria on whether a factor is statistically important to be chosen. There are two commonly used methods that were selected as criteria for EFA in our study, one is the eigenvalue-one (EV-ONE) rule (Kaiser, 1960), also called the Kaiser-Guttman rule, and the other one is the cumulative percentage of the total variance (Hatcher, 1994).

EV-ONE rule recommended the retention of factors with eigenvalues greater than one, which means that its factor contributes more to the total variance than a single z since each z has a variance of one and discard the rest. As shown in the scree plot in Figure 4.2, there were eleven factors with eigenvalues greater than one that should be retained.

The other criterion for factor selection is the cumulative percentage of the total variance rule. Hatcher (Hatcher, 1994) points out that the initial subset of factors should be selected if the sum of whose eigenvalues first exceeds 70% (or 80%) of the total variance. As shown in Table 4.16, evidence from the output report of SPSS shows that more than 70% of the cumulative (72.36%) variance is explained by the factors, and it illustrated that the eleven factors have sufficient representation of the model.

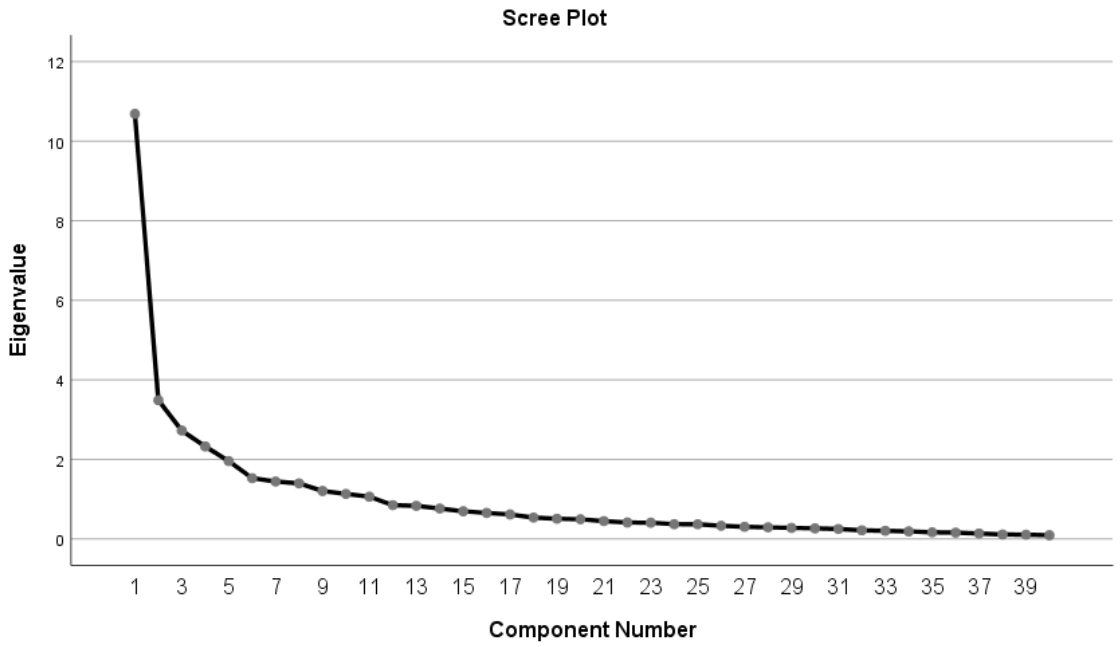



**Figure 4.2:** Scree Plot

As shown in Table 4.16, constructs 'Workload' (WL) and 'Work-family Conflict' (WFC) were merged into a single construct 'Work-family Conflict' (WFC) as items converged to form a single construct. Item ABS1 from constructing 'Absenteeism' (ABS) was merged into construct 'Organizational Commitment' (OC) and forms a new construct 'Organizational Commitment' (OC). Item DT2 from 'Developing or Training' (DT) and item ROU1 from 'Routinization' (ROU) were both merged into construct 'Role Ambiguity' (RA) and forms a new construct 'Role Ambiguity' (RA). New construct 'Job Satisfaction' (JS) was also formed with the merge of item 'Promotion Opportunity 1' (PO1) and the elimination of item 'Job Satisfaction 4' (JS4). The constructs 'Working Environment' (WE), 'Absenteeism' (ABS), 'Developing or Training' (DT), 'Routinization' (ROU) and 'Promotion Opportunity' (PO) were entirely eliminated. However, constructs 'Leadership' (LEA), 'Job Performance' (JP), 'Work Stress' (WS), 'Pay' (PS), 'Role Conflict' (RC), Team-worker (TW) and Autonomy (AUT) keep the original items with no changes made. Thus, after running the factor analysis with all the survey items, eleven factors were added as new columns in the dataset, and these eleven variables, instead of the original survey items, were used as the response

variables of the termination intention in the remainder of this study. After exploratory factor analysis to determine the factor structure of the dataset, the CFA was conducted to impute the composite factors of the termination intention.

### 4.5.2 Confirmatory Factor Analysis

In the EFA, we extracted eleven factors as the independent variables of termination intention; in the CFA we will confirm the factor structure extracted in the EFA. The EFA was performed by using SPSS, and the CFA was performed by using smartPLS. It is absolutely necessary to establish construct reliability, as well as convergent and discriminant validity when doing the CFA. We will continue using a two-stage procedure (Anderson & Gerbing, 1988) for path analysis as we performed in the turnover intention analysis.

#### 4.5.2.1 Measurement Model Analysis (Outer Model)

After exploratory factor analysis and elimination of the unqualified items of the survey questionnaire, confirmatory factor analysis was performed to confirm the factor structure of termination intention. Reliability and validity test were very necessary for future work.

***Reliability analysis***

As shown in Table 4.17, all constructs in the termination intention model demonstrated sufficient levels (0.70 or greater) of internal consistency reliability. The Cronbach's Alpha value range was from 'Pay' (PS) with a value of 0.721 to 'Workload' (WL) with a value of 0.902. Composite reliability also tested to make sure the model has adequate reliability. The value estimated for each of the constructs ranged from 0.847 (Organizational Commitment) to 0.923 (Workload), which illustrates adequate reliability for the termination model because all the values are greater than the general rule of thumb (0.7). Thus, all the values obtained from the Cronbach's Alpha and Composite reliability indicate that the variables in the termination intention study have a satisfactory level of internal consistency.

**Table 4.17:** Internal consistency reliability of the survey instrument

| Variables | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| JP | 0.842 | 0.893 | 0.676 |
| LEA | 0.878 | 0.915 | 0.728 |
| OC | 0.796 | 0.847 | 0.583 |
| Pay | 0.721 | 0.870 | 0.770 |
| RA | 0.849 | 0.905 | 0.762 |
| RC | 0.752 | 0.854 | 0.663 |
| TW | 0.769 | 0.891 | 0.804 |
| TEI | 0.758 | 0.863 | 0.689 |
| WL | 0.902 | 0.923 | 0.670 |

***Validity analysis***

- *Convergent validity*

The Average Variance Extracted (AVE) and indicator reliability (factor loading) was also used for determining the internal consistency convergent validity test. As shown in Table 4.17, the AVE values range from 'Organizational Commitment' with a value of 0.583 to 'Team-worker' with a value of 0.804. The results showed sufficient evidence of convergence of the study construct because all constructs satisfy the AVE cutoff criterion of 0.5.

- *Discriminant validity*

The evidence of the discriminant validity of the termination model was evident after inspection of the magnitude of the correlations between the various subscales, as shown in Table 4.18. The values of the square root of AVE along the diagonal are greater than others in the corresponding row and column. Thus, it is evident that the study has adequate construct validity.

All the eliminated items based on the exploratory factor analysis and the criterion for elimination are listed in Table 4.19. The final structural model with eight new constructs obtained from the above process is further for hypothesis test and model fit analysis.

**Table 4.18:** Discriminant Validity

| | JP | LEA | OC | Pay | RA | RC | TW | TEI | WL |
|---|---|---|---|---|---|---|---|---|---|
| JP | 0.822 | | | | | | | | |
| LEA | 0.364 | 0.853 | | | | | | | |
| OC | 0.466 | 0.538 | 0.764 | | | | | | |
| Pay | 0.004 | 0.322 | 0.289 | 0.878 | | | | | |
| RA | 0.104 | 0.186 | 0.229 | 0.357 | 0.873 | | | | |
| RC | -0.258 | -0.406 | -0.279 | -0.206 | -0.321 | 0.814 | | | |
| TW | 0.249 | 0.275 | 0.318 | 0.203 | 0.32 | -0.286 | 0.897 | | |
| TEI | -0.404 | -0.379 | -0.278 | -0.155 | -0.193 | 0.371 | -0.283 | 0.83 | |
| WL | -0.332 | -0.515 | -0.385 | -0.201 | -0.301 | 0.432 | -0.248 | 0.363 | 0.818 |

**Table 4.19:** Eliminated items for termination intention

| Factor | Eliminated Item | Criterion for Elimination | Explanation |
|---|---|---|---|
| Pay (PS) | Pay2 | Factor loading less than 0.5 | This item is more related to another construct. |
| Autonomy (AUT) | AUT1<br>AUT2 | Cronbach's Alpha less than 0.7 | For construct autonomy, one item has Cronbach's Alpha less than 0.7, the other item also eliminated. |
| Work Stress (WS) | WS1<br>WS2<br>WS3 | Cronbach's Alpha less than 0.7 | For construct autonomy, two items have Cronbach's Alpha less than 0.7, the entire construct also eliminated. |
| Promotion Opportunity (PO) | PO1<br>PO2 | factor loading less than 0.5 | For construct promotion opportunity, one item more related to another construct, so the other item also eliminated. |
| Developing or Training (DT) | DT1 | Factor loading less than 0.5 | This item is more related to another construct. |
| Routinization (ROU) | ROU1<br>ROU2 | factor loading less than 0.5 | For construct routinization, one item more related to another construct, so the other item also eliminated. |
| Working Environment (WE) | WE1<br>WE2 | Factor loading less than 0.5 | For construct working environment, one item more related to another construct, so the other item also eliminated. |
| Absenteeism (ABS) | ABS1<br>ABS2<br>ABS3 | AVE less than 0.5 | For construct absenteeism, two items cause AVE less than 0.5, so the entire construct eliminated. |
| Organizational Commitment (OC) | OC2 | Cross loading | This item also related to another construct. |

#### 4.5.2.2 Structural Model Analysis (Inner Model)

The exploratory factor analysis was performed, and construct measures that are reliable and valid have been confirmed in the previous section, we will continue to report the assessment of the structural model results in this section. Eight factors were derived from the exploratory factor analysis and measurement model analysis. The key criteria for assessing the structural model included path coefficients, the coefficient of determination $R^2$, effect size $f^2$ and the predictive relevance $Q^2$ are also examined in the following sections.

***Collinearity Assessment***

As we represented in Chapter 3, the collinearity between each set of predictor variables should be examined before the structural model evaluation and hypothesis testing. As shown in Table 4.20, the predictor variable of 'Leadership' to latent variable of 'Leadership' had the highest VIF value of 1.835, which is quite less than the threshold value of 5. Thus, we can confirm that there is no collinearity among predictors in the structural model.

**Table 4.20:** Collinearity assessment

| Variables | VIF (TEI) |
|---|---|
| JP | 1.414 |
| LEA | 1.835 |
| OC | 1.713 |
| Pay | 1.310 |
| RA | 1.344 |
| RC | 1.397 |
| TW | 1.247 |
| WL | 1.574 |

### *Path Coefficients*

Path coefficients represented the hypothesized relationships among the constructs and obtained after running the PLS-SEM algorithm. The significance of the path coefficients obtained after running the bootstrapping in smartPLS and is determined by *p*-value. Table 4.21 shows the estimated path coefficients and the significance level. Comparing the relative importance of factors that affect 'Termination Intention' (TUI), it is observed that job performance (-.273) and leadership (-.143) were most important, followed by team-workers (-.107), role conflict (.168), and other factors. However, after running the bootstrapping, it is found that two factors, namely job performance and role conflict, have a significant effect on termination intention in the structural model. This result suggests that the manufacturing organization should be aware that the worker's termination intention is terminated by their job performance and role conflict.

### *The coefficient of Determination $R^2$*

The coefficient of determination $R^2$ can be used to test how well the model fits the data. The $R^2$ value for 'Termination Intention' (TEI) is 0.242. According to Hair in 2011, the $R^2$ value of 0.20 considered high in exploratory research in behavior studies. Thus, we can conclude that it is substantial for the model to fit the data in termination intention studies.

**Table 4.21:** Size and Significance of Path Coefficients

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|---|---|
| JP -> TEI | -0.273 | -0.259 | 0.096 | 2.859 | 0.004 |
| LEA -> TEI | -0.143 | -0.147 | 0.107 | 1.336 | 0.182 |
| OC -> TEI | 0.066 | 0.030 | 0.112 | 0.587 | 0.557 |
| Pay -> TEI | -0.042 | -0.037 | 0.101 | 0.417 | 0.677 |
| RA -> TEI | -0.016 | -0.029 | 0.090 | 0.183 | 0.855 |
| RC -> TEI | 0.168 | 0.184 | 0.074 | 2.269 | 0.023 |
| TW -> TEI | -0.107 | -0.100 | 0.099 | 1.078 | 0.281 |
| WL -> TEI | 0.111 | 0.106 | 0.090 | 1.228 | 0.219 |

***Effect Size $f^2$***

As shown in Table 4.22, the effect size $f^2$ of all the predicting factors also obtained after running the PLS-SEM algorithm. It is easily observed that 'Job performance' (JP) and 'Role Conflict' have the above medium effect size of 0.074 and 0.029, respectively. This indicates that this variable is the influential factor affecting 'Termination Intention' (TEI). Furthermore, all other factors except OC, RA, and WL have a small effect size.

***Predictive Relevance $Q^2$***

The predictive relevance $Q^2$ values for termination intention were also obtained after running blindfolding procedure. The results show that the $Q^2$ values for termination intention were .173 and this is concluded that the path model has predictive relevance because the $Q^2$ value is greater than the criterion value of zero.

### 4.5.3 Hypotheses Testing for Termination Intention

#### 4.5.3.1 Correlation Analysis for Termination Intention

The correlations and strength of different variables were also examined by using canonical correlation coefficients methods, and the results were list as Table 4.23. It easily finds that job performance, leadership, organizational commitment, role conflict, team-worker, and workload have a significant relationship with termination intention. However, there was no significant relationship found between pay, role ambiguity, and termination intention. Detailed expatiations are reported in Table 4.23.

#### 4.5.3.2 Hypotheses Testing for Termination Intention

In this study, eight hypotheses were postulated and tested for termination intention. The results reported in Table 4.24 provide support for two hypotheses (H4a, H4f) and reject six hypotheses (H4b, H4c, H4d, H4e, H4g, H4h). Those hypotheses that were supported are significant at a confidence level of either $p < .000$, .01 or .05.

**Table 4.22:** Effect Size $f^2$

| Factors | TEI |
|---|---|
| JP | 0.074 |
| LEA | 0.016 |
| OC | 0.004 |
| Pay | 0.002 |
| RA | 0.000 |
| RC | 0.029 |
| TW | 0.013 |
| WL | 0.011 |

**Table 4.23:** Correlations between constructs

| Variables | Mean | S.D. | JP | LEA | OC | Pay | RA | RC | TW | WL | TEI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JP | 4.04 | 0.63 | 1.000 | | | | | | | | |
| LEA | 4.07 | 0.82 | 0.505*** | 1.000 | | | | | | | |
| OC | 3.68 | 0.90 | 0.529*** | 0.588*** | 1.000 | | | | | | |
| Pay | 3.51 | 0.96 | 0.103 | 0.429*** | 0.411*** | 1.000 | | | | | |
| RA | 3.59 | 0.98 | -0.191 | -0.240 | -0.321 | -0.359** | 1.000 | | | | |
| RC | 2.68 | 0.93 | -0.300 | -0.479*** | -0.332* | -0.346** | 0.370** | 1.000 | | | |
| TW | 4.03 | 0.85 | 0.335* | 0.349* | 0.395** | 0.246* | -0.387*** | -0.291* | 1.000 | | |
| WL | 2.50 | 1.10 | -0.393 | -0.554*** | -0.506*** | -0.321 | 0.371* | 0.473*** | -0.312 | 1.000 | |
| TEI | 2.00 | 0.97 | -0.439*** | -0.480*** | -0.369** | -0.203 | 0.270 | 0.417** | -0.314** | 0.431** | 1.000 |

* Correlations were significant at $p < .05$
** Correlations were significant at $p < .01$
*** Correlations were significant at $p < .001$

**Table 4.24:** Results of SEM hypothesis testing for Termination Intention

| Hypothesis | Proposed hypothesis relationship | Positive or Negative | Estimate results | P | Results |
|---|---|---|---|---|---|
| H4a | JP -> TEI | - | -0.273 | 0.004** | Significant |
| H4b | LEA -> TEI | - | -0.143 | 0.182 | Non-significant |
| H4c | OC -> TEI | + | 0.066 | 0.557 | Non-significant |
| H4d | Pay -> TEI | - | -0.042 | 0.677 | Non-significant |
| H4e | RA -> TEI | - | -0.016 | 0.855 | Non-significant |
| H4f | RC -> TEI | + | 0.168 | 0.023* | Significant |
| H4g | TW -> TEI | - | -0.107 | 0.281 | Non-significant |
| H4h | WL -> TEI | + | 0.111 | 0.219 | Non-significant |

* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

H4a predicted that job performance has a significant effect on termination intention. As evident from Table 4.24, the path coefficient between the two variables is -.273 and the *p*-value is less than .004. This illustrated significant negative influence of job performance to termination intention. Also, as shown in Table 4.23, a significant negative relationship between job performance to termination intention ($r = -.439$, $p < .001$) presented in the correlation test, suggested that the manufacturing workers who have higher job performance also have lower termination intention. Accordingly, H4a was supported.

The results in Table 4.23 show that there is a significant association between leadership and termination intention ($r = -.480$, $p < .001$). This indicated that if the manufacturing workers are satisfied with their leadership, their intention to termination also decreases. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta = -.143$, $p = .182$), as shown in Table 4.24. Therefore, hypothesis H4b was rejected.

Organizational commitment showed negative significant correlations with termination intention ($r = -.369$, $p < .01$), as shown in Table 4.23. This implies that the manufacturing workers who have higher organizational commitment will have lower termination intention. However, the results of testing the structural equation

model indicated an insignificant influence of these two variables ($\beta$ = .066, $p$ = .557), as shown in Table 4.24. Therefore, hypothesis H4c was rejected.

H4d stated that pay has a significant negative effect on their termination intention. As evident from Table 4.23, the correlation coefficient between the two variables is -.203, and the $p$-value is greater than .05. This illustrates that there was no significant correlation between pay and termination intention. Further, results of the regression test indicated an insignificant negative association between pay and termination intention ($\beta$ = -.042, $p$ = .677). Thus, hypothesis H4d was rejected.

H4e predicted that role ambiguity has a significant effect on their termination intention. As evident from Table 4.23, the correlation coefficient between the two variables is .270, and the $p$-value is greater than .05. This illustrates that there was no significant correlation between role ambiguity and termination intention. Moreover, the results of the regression test indicated an insignificant negative association between role ambiguity and termination intention ($\beta$ = -.016, $p$ = .855). Thus, hypothesis H4e was rejected.

Role conflict showed positive significant correlations with termination intention ($r$ = .417, $p$ < .01), as shown in Table 4.23. This implies that the manufacturing workers who have a higher role conflict also have higher termination intention. Moreover, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = .168, $p$ = .023), as shown in Table 4.24. Therefore, hypothesis H4f was supported.

The results in Table 4.23 show that there is a significant association between team-worker and termination intention ($r$ = -.314, $p$ < .01). This implies that if manufacturing workers' team-worker perspective increase, their intention of termination decreases. However, the results of testing the structural equation model indicated an insignificant influence of these two variables ($\beta$ = -.107, $p$ = .281), as shown in Table 4.24. Therefore, hypothesis H4g was rejected.

H4h predicted that workload has a significant effect on termination intention. As evident from Table 4.23, the correlation coefficient between the two variables is .431, and the $p$-value is less than .01. This illustrates that there was a significant, positive correlation between workload and termination intention. However, the results of the

regression test indicated an insignificant positive association between workload and termination intention ($\beta$ = .111, $p$ = .219). Thus, hypothesis H4h was rejected.

## 4.6 Group Analysis

To investigate differences on manufacturing worker's intention, this study compared different worker groups across the variable of turnover intention and termination intention, using Mann-Whitney U test to compare two sample means that come from the same population, and Kruskal-Wallis test (one-way ANOVA on ranks) to compare multiple sample means that come from the same population.

### 4.6.1 Mann-Whitney U Test for Gender Test

A non-parametric test, Mann-Whitney U test was used to test whether the two groups, namely males and females, were similar in their perceptions in terms of job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC), job performance (JP), turnover intention (TEI) and termination intention (TEI). The results are reported in Table 4.25 and Table 4.26.

**Table 4.25:** Ranks for Gender

| Constructs | Gender | N | Mean Rank | Position in Mean Rank |
|---|---|---|---|---|
| Job Satisfaction | Male | 110 | 74.33 | 1 |
| | Female | 28 | 50.52 | 2 |
| Organizational Commitment | Male | 110 | 71.02 | 1 |
| | Female | 28 | 63.54 | 2 |
| Leadership | Male | 110 | 72.95 | 1 |
| | Female | 28 | 55.93 | 2 |
| Work-family Conflict | Male | 110 | 67.72 | 2 |
| | Female | 28 | 76.50 | 1 |
| Job Performance | Male | 110 | 70.70 | 1 |
| | Female | 28 | 64.80 | 2 |
| Turnover Intention | Male | 110 | 65.55 | 2 |
| | Female | 28 | 85.00 | 1 |
| Termination Intention | Male | 110 | 69.18 | 2 |
| | Female | 28 | 70.77 | 1 |

**Table 4.26:** Test Statistics for Gender

| | JS | OC | LEA | WFC | JP | TUI | TEI |
|---|---|---|---|---|---|---|---|
| Mann-Whitney U | 1008.5 | 1373.0 | 1160.0 | 1344.0 | 1408.5 | 1106.0 | 1504.5 |
| Wilcoxon W | 1414.5 | 1779.0 | 1566.0 | 7449.0 | 1814.5 | 7211.0 | 7609.5 |
| Z | -2.845 | -.889 | -2.065 | -1.056 | -.721 | -2.310 | -.190 |
| Asymp. Sig. (2-tailed) | .004** | .374 | .039* | .291 | .471 | .021* | .849 |

Grouping Variable: Gender
* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

Table 4.25 shows the results of the mean rank with regard to gender and the eight study constructs examined in this study, namely job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC), job performance (JP), turnover intention (TEI) and termination intention (TEI).

On examining Table 4.26, statistically significant differences were found between gender and job satisfaction ($p < .004$), leadership ($p < .039$) and turnover intention ($p < .021$). However, statistically insignificant differences were found between gender and organizational commitment ($p < .374$), work-family conflict ($p < .291$), job performance ($p < .471$), termination intention ($p < .849$). A detailed discussion with regard to gender and constructs are listed as following.

In regard to gender categories and job satisfaction, the mean rank shows that males (74.33) experience higher levels of job satisfaction than females (50.52), and the significance of $p$-value is .004. This implies that male manufacturing workers are more satisfied with their jobs than female manufacturing workers. Inconsistent with previous studies, which found that job satisfaction of females in the United Kingdom (UK) is significantly lower in male-dominated professions (Sloane, 2000). However, Andrew (1997) argued that the gender satisfaction differential disappears for the young, the higher-educated, professionals and those in male-dominated workplaces.

The results in Table 4.25 indicated that females seem to experience lower levels of organizational commitment than males. Unfortunately, this is statistically

insignificant ($p$ = .374). Thus, there is no significant difference found between male and female manufacturing workers in organizational commitment.

With regard to gender categories and leadership, we found that there is a significant difference ($p$ = .039) between male and female manufacturing workers in leadership, as shown in Table 4.26. And the mean rank result in Table 4.25 suggested that males (72.95) experience higher levels of leadership than females (55.93).

With regard to gender categories and work-family conflict, a statistically insignificant ($p$ = .291) difference was found between male and female manufacturing workers in work-family conflict, which implies that male and female manufacturing workers have no significant difference in work-family conflict. The similarly results found in gender categories and job performance ($p$ = .471).

In regard to gender categories and turnover intention, the mean rank shows that males (65.55) have lower levels of turnover intention than females (85.00), and the significance of $p$-value is .021, as reported in Table 4.25 and 4.26, respectively. This implies that female manufacturing workers have more intention to leave their organization than male workers. Previous studies also confirmed this result. The enormous time demands of certain professions that present difficulties to employees who have extensive family responsibilities cause the tendency of females to have higher turnover intentions to leave their current jobs than males, as reported by Greenhaus et al. (1997). Callister (2006) also reported that female competence is associated with traits of toughness and self-promotion, since their feelings of exclusion and marginalization and desire to quit the job.

For the last construct, termination intention, there is no significant difference found between male and female manufacturing as the $p$-value of .849.

### 4.6.2 Kruskal-Wallis Test for Length of Service Test

Kruskal-Wallis test, a non-parametric method for testing whether samples originate from the same distribution, compares two or more independent samples of equal or different sample sizes. The score of mean rank for each group is converted into ranks and then mean rank is compared.

Table 4.27 reports on the mean ranks and position in mean rank regarding the length of service and the various constructs and Table 4.28 reports on the chi-square tests and the significance. Table 4.27 shows the results of the Kruskal-Wallis test for variation length of service categories with eight job or organization related behavior aspects examined in this study, namely job satisfaction (JS), organizational commitment (OC), leadership (LEA), work-family conflict (WFC), job performance (JP), turnover intention (TEI) and termination intention (TEI).

When examining Table 4.28, significant differences were found between the various length of service categories, job satisfaction ($p$ = .034) and turnover intention ($p$ = .034). However, statistically insignificant differences were found between the various length of service categories and organizational commitment ($p$ = .184), leadership ($p$ = .146), work-family conflict ($p$ = .066), job performance ($p$ = .153) and termination intention ($p$ = .732). A detailed discussion with regard to length of service and constructs are listed as follows.

According to Table 4.28, a chi-square ($\chi^2$) of 12.060 was observed with 5 degree of freedom (df) and the $p$-value of .034. The results illustrated that there is a significant difference in the length of service in job satisfaction. According to Table 4.27, with regard to various length of service categories and job satisfaction, the mean ranking shows a trend of falling initially and then rising with the length of service. Those workers in the higher length of service category '21 or more' and 'Less than 1 year' seem to record higher levels of job satisfaction compared to other length of service categories. Workers that are working at the organization around '3 - 5+' years seem to be somewhat in lowest agreement with their job satisfaction.

With regard to length of service categories and organizational commitment ($p$ = .184), leadership ($p$ = .146), work-family conflict ($p$ = .066) and job performance ($p$ = .153), there is no significant difference in various length of service categories of these constructs.

**Table 4.27:** Ranks for Length of Service

| Constructs | Length of Service | N | Mean Rank | Position in Mean Rank |
|---|---|---|---|---|
| Job Satisfaction | Less than 1 year | 33 | 82.18 | 2 |
| | 1 - 2+ | 33 | 58.56 | 5 |
| | 3 - 5+ | 19 | 52.89 | 6 |
| | 6 - 10+ | 13 | 67.58 | 4 |
| | 11 - 20+ | 18 | 68.17 | 3 |
| | 21 or more | 22 | 83.45 | 1 |
| Organizational Commitment | Less than 1 year | 33 | 75.52 | 2 |
| | 1 - 2+ | 33 | 67.71 | 5 |
| | 3 - 5+ | 19 | 48.37 | 6 |
| | 6 - 10+ | 13 | 74.04 | 3 |
| | 11 - 20+ | 18 | 69.56 | 4 |
| | 21 or more | 22 | 78.68 | 1 |
| Leadership | Less than 1 year | 33 | 80.64 | 1 |
| | 1 - 2+ | 33 | 74.79 | 2 |
| | 3 - 5+ | 19 | 55.45 | 6 |
| | 6 - 10+ | 13 | 63.46 | 4 |
| | 11 - 20+ | 18 | 56.36 | 5 |
| | 21 or more | 22 | 71.32 | 3 |
| Work-family Conflict | Less than 1 year | 33 | 52.92 | 6 |
| | 1 - 2+ | 33 | 73.12 | 3 |
| | 3 - 5+ | 19 | 72.84 | 4 |
| | 6 - 10+ | 13 | 90.15 | 1 |
| | 11 - 20+ | 18 | 75.78 | 2 |
| | 21 or more | 22 | 68.70 | 5 |
| Job Performance | Less than 1 year | 33 | 64.00 | 5 |
| | 1 - 2+ | 33 | 79.85 | 2 |
| | 3 - 5+ | 19 | 54.29 | 6 |
| | 6 - 10+ | 13 | 84.62 | 1 |
| | 11 - 20+ | 18 | 67.89 | 3 |
| | 21 or more | 22 | 67.75 | 4 |
| Turnover Intention | Less than 1 year | 33 | 59.58 | 5 |
| | 1 - 2+ | 33 | 82.00 | 2 |
| | 3 - 5+ | 19 | 84.89 | 1 |
| | 6 - 10+ | 13 | 75.19 | 3 |
| | 11 - 20+ | 18 | 62.44 | 4 |
| | 21 or more | 22 | 54.75 | 6 |
| Termination Intention | Less than 1 year | 33 | 70.26 | 3 |
| | 1 - 2+ | 33 | 73.86 | 2 |
| | 3 - 5+ | 19 | 69.50 | 4 |
| | 6 - 10+ | 13 | 66.08 | 5 |
| | 11 - 20+ | 18 | 56.56 | 6 |
| | 21 or more | 22 | 74.43 | 1 |

**Table 4.28:** Test Statistics for Length of Service

| | JS | OC | LEA | WFC | JP | TUI | TEI |
|---|---|---|---|---|---|---|---|
| Kruskal-Wallis H | 12.060 | 7.529 | 8.187 | 10.360 | 8.063 | 12.023 | 2.789 |
| df | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Asymp. Sig. | .034* | .184 | .146 | .066 | .153 | .034* | .732 |

Kruskal Wallis Test
Grouping Variable: Length of Service
* Significant at $p < .05$
** Significant at $p < .01$
*** Significant at $p < .001$

According to Table 4.28, a chi-square ($x^2$) of 12.023 was observed with 5 degrees of freedom (df) and the $p$-value of .000. These results also indicate that there is a significant difference in the length of service in turnover intention. According to Table 4.27, with regard to turnover intention and various length of service categories, the mean ranking shows that workers in the length of service categories '21 or more' and 'Less than 1 year' experience less propensity to leave the organization while those who have the length of service of '3 - 5+' show high levels of intentions to leave.

For the last construct, termination intention, there is no significant difference found in the various length of service categories as the $p$-value of .732.

## 4.7 Discussion and Implication

In the turnover intention study, the results by correlation analysis indicated that all predictors, except job performance, have a significant correlation with turnover intention, and all predictors, except autonomy and role ambiguity, have a significant correlation with job satisfaction and organizational commitment, respectively. The regression analysis results show that job satisfaction and organizational commitment are significant positive predictors, but the work-family conflict is a significant negative predictor of turnover intention. Working environment and absenteeism are both significant positive predictors of job satisfaction and organizational commitment, respectively. While in the termination intention study, the results by correlation analysis suggested that all predictors, except pay and role ambiguity, have a

significant correlation with termination intention. The regression analysis results imply that job performance is the only significant negative predictor of termination intention. The implication of the results is discussed and addressed in the following.

### 4.7.1 Significant Factor of Turnover Intention

The primary goal of this study was to investigate the relationships among job satisfaction, organizational commitment, leadership, work-family conflict, job performance and turnover intention in a sample of Tennessee manufacturing workers. Both positive and negative findings are summarized below, and their theoretical and practical implications are briefly discussed as follows.

Many different measuring instruments for turnover intention have been used in past studies. However, the mean scores and the percentages of the high perception method could provide a direct reference for potential turnover behaviors. The score for the five items for turnover intention ranged from 2.18 to 2.51, and the mean score of the overall perception of turnover intention was 2.37, which is very close to the five-range-scale 2 - disagree. The participants who chose 1 - strongly disagree and 2 - disagree were considered to have the high turnover intention; in contrast, those who chose 5 - strongly agree and 4 - agree were considered to have low turnover intention. Based on the frequency results, the percentage of low turnover intention participants for each item of turnover intention were 58.0%, 58.0%, 57.2%, 63.0% and 69.6%; however, the percentage of high turnover intention participants for each item of turnover intention was 19.6%, 19.6%, 21.0%, 10.9% and 10.9. Although this implies that the turnover intention of manufacturing workers was much smaller than that of other industries, such as IT workers or health workers, more attention should be paid to manufacturing workers in Tennessee to reduce their turnover intention.

The hypothesis test results show that job satisfaction and organizational commitment have a significant negative effect on turnover intention, but work-family conflict has a significant positive effect on turnover intention. This result illustrates that job satisfaction, organizational commitment, and work-family conflict are the determinants of turnover intention for manufacturing workers.

#### 4.7.1.1 Job Satisfaction

The results of our model indicated that job satisfaction had a significant negative impact on turnover intention and support the work of Hellman and his colleagues (Hellman, 1997), who also have concluded that the significant negative relationship between job satisfaction and turnover intention. This result offers an explanation that if workers are satisfied with their job, they can reduce their turnover intentions (Lu, While & Barriball, 2005). However, some scholars argue that job satisfaction has no significant net influence on turnover intention and only serve as a mediating variable between the other variables and turnover intention (Price & Mueller, 1981). The significant positive relationship between job satisfaction and organizational commitment illustrate that greater job satisfaction produces greater organizational commitment. Similar conclusions were drawn by Williams and Hazer who reported that the absence of job satisfaction, such as achievement, recognition or job content often leads to the reduction of organizational commitment. This serves as an implication that the management in manufacturing organizations should develop a deeper understanding of a manufacturing worker's job satisfaction, and then develop strategies accordingly that will help to the improvement of the conditions of the workforce.

As evidence from the results, we concluded that promotion opportunity, routinization, and working environment are the determinants of the job satisfaction, and we recommended that increase the manufacturing worker's job satisfaction through the improvement of its determinants. First, the management should create advancement opportunities for their workers, although it is difficult for some traditional industry, such as manufacturing industry. However, a promotion refers the advancement of an employee from one job position to another job position that not only has a higher-level job title but also has a higher salary range or higher-level job responsibilities in an organization. Thus, management should give more opportunity to promote their employees to a higher salary range, a higher level job title or a higher level job responsibilities position. Second, the belief is that routinization decreases turnover by its negative impact on job satisfaction and this is consisting of our findings. Thus, reduce the repetitious in the manufacturing work in another method

to improve workers' job satisfaction. Third, management should improve the working environment for the workers, such as lean manufacturing. In a lean manufacturing environment, workers learn to perform a variety of tasks while taking an active role in process improvements instead of specializing in performing routine tasks in the traditional manufacturing conditions.

#### 4.7.1.2 Organizational Commitment

Consistent with many previous studies, there is a significant negative relationship between organizational commitment and turnover intention (Nipius, 2012). It was confirmed that employees turn increases the intentions to stay with the organization when they feel happy at work, and a sense of commitment develops. Allen and Meyer (Allen and Meyer, 1990) proposed the three-component model, which contains effective, continuous and normative, and proved that organizational commitment is related negatively to intention to leave. Some studies showed the insignificant effect of organizational commitment on turnover intention due to the poor response and biases of the respondent (Iqbal, 2012). They argued that organizational commitment no more plays a role in decreasing turnover intention if an employee comes with best opportunities or required working conditions. Therefore, the results suggested that management develop relevant strategies to restore an equitable organizational culture, decrease the workers unpleasant emotional state, and then reduce the quit behaviors such as voluntary turnover intention.

On the other way, absenteeism has a significant negative impact on the work and work-related attitudes such as organizational commitment and job satisfaction, and this confirmed in our test. Hanisch and Hulin (1991) theorized that absenteeism reflects "invisible" attitudes such as job dissatisfaction and low level of organizational commitment. Thus, management should figure out the reasons for employee's absenteeism, and then develop strategies that will contribute to reduce the absenteeism and increase the level of organizational commitment.

#### 4.7.1.3 Work-Family Conflict

The causal model also showed that work-family conflict negatively influenced job satisfaction but positively affected turnover intention, which had also been proved in many other studies. Lu et al. (2017) believed that there is a positive relationship between work characteristics (night shifts, minimal control over work hours or unpredictable scheduling requirements) and work-family conflict, and then positively related to turnover intention. The results also showed that work-family conflict positive impact on the turnover intention with job satisfaction as a mediator. Hence, the manufacturing workers who suffer higher work-family conflict also had lower job satisfaction and higher turnover intention. Thus, the present findings provide several important practical implications for management regarding the work-family conflict. The first recommendation for reducing work-family conflict is that the manufacturing organization would offer formal work-family policies such as flexible work schedules for their workers. Second, adequate support should be provided for the employees from the manufacturing organizations. For example, the management should provide adequate support when the employee is addressing their family obligations.

### 4.7.2 Insignificant Factor of Turnover Intention

Hypothesis test results show that leadership and job performance have an insignificant negative effect on turnover intention, and this illustrates that leadership and job performance are the insignificant factors of turnover intention for manufacturing workers.

#### 4.7.2.1 Leadership

Leadership, one of the variables given considerable attention in the literature review as a significant determinant and intervening variable, was found to have a significant net influence on job satisfaction and organizational commitment but no significant net influence on turnover intention. This finding is consistent with the finding of a previous investigation on job satisfaction that a lack of effective leadership skills negatively affected employee job satisfaction. Thus, manufacturing workers' perceptions of leadership skills have a significant positive impact on their job

satisfaction and organizational commitment. Surprisingly, some previous research, such as the study conducted on assistant coaches in the USA by Wells and Peachey (Wells and Peachey, 2011), proved a significant negative relationship between leadership behavior and turnover intention, but our results showed an insignificant relationship between these two variables. The reason for rejecting this hypothesis is that leadership is not an important factor in manufacturing workers' turnover intentions. However, job satisfaction and organizational commitment are both very important mediating variables for leadership and turnover intention.

#### 4.7.2.2 Job Performance

Unexpectedly, there is no significant relationship between job performance and turnover intention. A study conducted by Carraher et al. (Carraher & Buckley 2008) concluded that for nurses who had poor job performance exhibited the symptoms of intention to quit, such as the search for a new job or absent from work. However, in our study, job performance is not a significant predictor for turnover intention.

### 4.7.3 Significant Factor of Termination Intention

The primary goal of the termination intention study has been to investigate relationships among factors and termination intention in a sample of Tennessee manufacturing workers. It was found that both job performance and role conflict have a significant effect on termination intention and their theoretical and practical implications briefly discussed as follows.

The mean scores and the percentages of high perception method could also provide a direct reference for the potential termination intention. The score for the five items in the termination intention ranged from 1.30 (TEI3_V) to 1.88 (TEI1), and the mean score of overall perception of turnover intention was 1.67 which is located in between five-range-scale 1 - strongly disagree and 2 - disagree. The participants who chose 1-strongly disagree and 2-disagree were considered low termination intention, and those who chose 5-strongly agree and 4-agree were considered high termination intention. Based on the frequency results, the percentage of low termination intention (cumulative percent of 'strongly disagree' and 'disagree')

participants for each item of termination intentions were 77.5%, 79.7%, and 68.9%, however, the percentage of high termination intention (cumulative percent of 'strongly agree' and 'agree') participants for each item of termination intention were 4.3%, 4.3%, and 15.9%. For TEI1 (I believe that the organization is seeking to terminate me soon) and TEI2 (I will probably be fired in the near future), only 4.3% of participants have the idea that they will be terminated by the organization, but around 80% of participants thought that the organization would not fire them. On the other hand, 15.9% of participants, which in TEI3 (I do NOT think that I am in danger of being fired from my current employer), believe that they are 'in danger of being fired' from the current organization, but around 70% of participants thought that they are not 'in danger of being fired' by the organization. This implies that termination intention of manufacturing workers was relatively low, but attention still has to be taken.

#### 4.7.3.1 Job Performance

Hypothesis test results show that job performance has a significant negative effect on termination intention, and it implies that job performance is the determinant of termination intention for manufacturing workers. This finding indicated that manufacturing workers' job performance reflects invisible attitudes, such as low level of termination intentions. In other words, the manufacturing workers who have high job performance also have a low level of intention that the organization would terminate them. And we can also get a direct reference from the mean scores and the percentages of high perception method. The score for the five items in the job performance ranged from 4.00 (JP1) to 4.07 (JP3), and the mean score of overall perception of job performance was 4.04, which is higher than the five-range-scale 4 - agree. The frequency results imply that the percentage of low job performance (cumulative percent of 'strongly disagree' and 'disagree') participants for each item of 'Job Performance' was 1.4%, 0.7%, 0%, and 1.4%, however, the percentage of high job performance (cumulative percent of 'strongly agree' and 'agree') participants for each item of 'Job Performance' were 89.1%, 83.3%, 84.1%, and 84.1%. JP1 (I think my supervisors were satisfied with my work) results in Table C.47 indicated that 89.1% of participants believe their supervisors were satisfied with their work, but only 1.4%

of participants were not. The result of JP2 in Table C.48 suggested that 83.3% of participants believe they can finish their work on time and only 0.7% of participants believe they can not. JP3 results in Table C.49 show that 84.1% of participants think that they would solve a problem initiative and none of the participants think they would not. JP4 (I was able to fulfill my responsibilities) results in Table C.50 indicated that 84.1% of participants believe that they would fulfill their responsibilities, but only 1.4% of participants were not. Thus, the results of mean scores and percentages of high perception confirmed that the most manufacturing workers who have high job performance also have a low level of termination intention.

#### 4.7.3.2 Role Conflict

It was shown that role conflict has a significant positive effect on termination intention, and it also indicated that role conflict is the determinant of termination intention for manufacturing workers. The frequency results imply that the percentage of low role conflict participants for each item of 'Role Conflict' was 29.7%, 52.9%, and 49.3%, while the percentage of high role conflict participants for each item of 'Role Conflict' was 27.5%, 18.8%, and 49.3%. Especially around half of the participants agree on the statement of CR3 which is 'Sometimes, I work under incompatible policies and guidelines.' Thus, the manufacturing workers are going to be stressed if they do not know what they're supposed to be doing due to reasons, such as a lack of guidance, training, or a poor onboarding process, among other things. So, there are some recommendations that an organization or employee can work to resolve the possible factors involved in role conflict. First, a manufacturing company should ensure that their employees have a clearly defined set of roles, from the information of employee handbooks, onboarding sessions, and with training or continuing education. Second, the organization should provide clear guidance, instructions, or a well-known onboarding process among workers.

### 4.7.4 Insignificant Factor of Termination Intention

The results revealed by hypothesis test in the research suggested that leadership, organizational commitment, pay, role ambiguity, team-worker, and workload are not

significant predictors of manufacturing workers' termination intention. However, all of these factors, except pay and role ambiguity, have a significant relationship with termination intention. Thus, management still needs to be aware of these factors importance since they are job-related factors and may be mediated by other determinants factors.

## 4.8 Summary

In this chapter, research findings, based on the survey data, were discovered and presented. The survey data were examined and analyzed to identify factors associated with an employee's turnover intention and termination intention. Demographics represent the basic situation, such as gender, race, age, length of service and job group, of the respondents. In the turnover intention study, confirmative factor analysis was used to analyze the proposed factors and research model. However, in termination intention research, both the exploratory factor analysis and confirmative factor analysis were used to eliminate some survey items that were not internally consistent with the overall measured variables and explore the possible relationship between factors and termination intention. In group analysis, Mann-Whitney U test revealed that there were significant differences in job satisfaction, leadership and turnover intention between male and female workers, moreover, the Kruskal Wallis test suggested that there were significant differences in job satisfaction and turnover intention on the various length of service categories.

The purpose of this chapter was to analyze the data using appropriate statistic procedures and report the results with interpretation. Findings in this chapter were ultimately aggregated to answer the research questions and guided to formulate discussions and implications. Those discussions and implications are discussed in detail at the end of this chapter. The research overview, contributions, limitations, future work, and conclusion will be addressed in the next chapter.

# CHAPTER 5: CONCLUSIONS

## 5.1 Research Overview

This study primarily investigated the factors affecting turnover intention and termination intention of manufacturing workers. A comprehensive literature review was performed to investigate the possible factors affecting turnover and termination intention and a conceptual framework was proposed to study the turnover and termination intention among manufacturing workers. The instrument, an empirical survey questionnaire, was conducted based on the conceptual framework factors in the literature review, and hypotheses were proposed and tested to reveal the relationship between the factors and the turnover and termination intention. Data were collected in a large manufacturing organization in the East Tennessee area. The measurement model analysis, such as consistency reliability, convergent validity, and discriminant validity, and the structural model analysis, such as path coefficients, the level of the $R^2$ values, the $f^2$ effect size and the predictive relevance $Q^2$, were performed prior to the hypothesis testing. The research was carried out in the sequence of answering the research questions as follows:

- *What are the factors that impact employees' turnover intention in a manufacturing organization? What is the relationship between factors and turnover intention? And among these factors, which one has a more significant impact on employees' turnover intention?*

The first group research question was concerned with the investigation of what factors affect turnover intention among manufacturing workers. In order to answer this question, a comprehensive literature review was performed to find all of the possible factors that affect turnover intentions. The literature review shows some factors may directly affect turnover intention, such as job satisfaction and organizational commitment, and some factors may indirectly affect turnover intention, such as pay, autonomy and role ambiguity. A survey instrument was designed by referring the turnover intention, and job satisfaction related questionnaire from previous literature and necessary changes were made to better fit

the research purpose. The survey instrument contains two groups of question items. The first group of question items investigated the relationship between factors and turnover intention, while the second group of question items tested the relationship between factors, which directly affect job satisfaction and organizational commitment while indirectly affecting turnover intention. A causal research model was developed based on Price's (1977) turnover intention model to show how these variables are affecting each other. Three groups of research hypotheses were developed based on the turnover intention model for the purpose of answering the first group question.

In order to evaluate the feasibility and eliminate problems of the questionnaire and improve the success and effectiveness of the investigation, a pilot study was conducted on participants recruited from a related manufacturing company. The internal consistency reliability and the face and content validities were tested in the pilot study. Based on the result of the pilot study, a revised instrument (final survey questionnaire) consisted of sixty 5-Likert scale questions with regard to employee's turnover intention which was proposed and it was reliable and valid. Around 180 surveys were distributed for the data collection. A total of 147 responses (81.7%) were collected and the final sample consisting of 138 valid survey questionnaire after data screening.

After evaluating the instrument and finishing the data collection, this research performed the model evaluation as to sustain the quality of the model and the factor structure. Preliminary factor analysis (e.g., principal component analysis) was performed to eliminate the items that did not meet the loading criteria. The model evaluation followed a two-stage modeling approach, namely measurement model analysis, and structural model analysis. In measurement model analysis, this research tested the reliability and validities again to make sure the instrument was reliable and valid. . Reliability tests consists of two methods, one is Cronbach's Alpha, with the value range from 'Pay' (PS) of .721 to 'Turnover Intention' (TUI) of .913; and the other one is composite reliability, with the value range from 'Work Stress' (WS) of .838 to 'Turnover Intention' (TUI) of .935. Average Variance Extracted (AVE) used to test the internal convergent validity and results show that all variables have an acceptable level of convergent validity because the smallest AVE value is .539 which

comes from 'Organizational commitment' (OC) and is greater than the cutoff criterion value of 0.50. The square root of AVE value along the diagonal being greater than any other value in the corresponding row and column implies the adequate discriminant validity. Following the structural model analysis, which mainly examined the path coefficients, the coefficient of determination $R^2$, effect size $f^2$ and the predictive relevance $Q^2$. The results of the path coefficients test represent that 'Job Satisfaction' (JS), 'Organizational Commitment' (OC) and 'Work-family Conflict' (WFC) significantly impacted 'Turnover Intention' (TUI). It is moderate that the model fits the data as the $R^2$ value for 'Turnover Intention' (TUI), 'Job satisfaction' (JS) and 'Organizational Commitment' (OC) are .572, .542 and .640, respectively. An above medium effect size indicating that 'Turnover Intention' (TUI) was significantly affected by three variables, which are 'Job Satisfaction' (JS), 'Organizational Commitment' (OC) and 'Work-family Conflict' (WFC) and special attention should be paid to these by the organization. The predictive relevance $Q^2$ values greater than zero also suggested that the path model has predictive relevance. Followed by the correlation analysis and regression hypothesis testing, which were also shown by this research. Canonical correlation coefficients methods were used to confirm the relationship existence of different variables and its direction and strength, however, the pairwise or the partial correlation effect was not considered in this kind of analysis. From the correlation analysis results, it is easy to find that job satisfaction ($r$ = -.729, $p$ < .001), organizational commitment ($r$ = -.697, $p$ < .001) and leadership ($r$ = -.475, $p$ < .001) have a strong and negative relationship with turnover intention, while work-family conflict ($r$ = .602, $p$ < .001) has a strong and positive relationship with turnover intention. PLS regression analysis suggested that the job satisfaction ($\beta$ = -.410, $p$ = .000), organizational commitment ($\beta$ = -.316, $p$ = .002) and work-family conflict ($\beta$ = .303, $p$ = .000) were significant predictors of turnover intention, but job performance ($\beta$ = .084, $p$ = .346) and leadership ($\beta$ = .128, $p$ = .277) were insignificant predictors of turnover intention. Although leadership has an insignificant affect on turnover intention, it has a significant net influence on job satisfaction ($\beta$ = .272, $p$ = .01). It was also found that work-family conflict insignificantly affects job satisfaction ($\beta$ = -.171, $p$ = .153), however, job satisfaction significantly, positively affects

organizational commitment ($\beta$ = .536, $p$ = .000). Altogether, job satisfaction, organizational commitment, and work-family conflict explained significant portions of the variance in manufacturing worker's turnover intention ($R^2$ = .572).

The results of correlation analysis indicated that pay, team-worker, promotion opportunity, developing or training, routinization and working environment have a significant, positive correlation with job satisfaction and organizational commitment, respectively. On the contrary, work stress, workload, role conflict, and absenteeism have a significant, negative correlation with job satisfaction and organizational commitment, respectively. Role ambiguity was found to have a significant, negative correlation with job satisfaction but no significant correlation with organizational commitment. And the results of testing the structural equation model indicated that promotion opportunity ($\beta$ = .205, $p$ = .034) and working environment ($\beta$ = .218, $p$ = .023) has a significant, positive effect on job satisfaction, routinization ($\beta$ = -.193, $p$ = .042) has a significant, negative effect on job satisfaction, and absenteeism ($\beta$ = -.220, $p$ = .003) has a significant, negative effect on organizational commitment.

- *What are the factors that impact employees' termination intention in a manufacturing organization? What is the relationship between factors and termination intention? And among these factors, which one has a more significant impact on employees' termination intention?*

It's very difficult to answer the second question of what are the factors that impact employees' termination intention in a manufacturing organization because we first proposed the terminology of termination intention and there was no related information found in the previous literature. Thus, we decided to use the same method, which researchers studied on turnover intention, to study termination intention. Termination intention is a measurement of whether a business' or organization's employees intention is that the organization plans to remove employees from positions, it normally refers to an employee's intention that the organization will terminate their jobs. So we reviewed the literature and found out all the job related and organizational related factors as the antecedents of manufacturing worker's termination intention. We also developed a causal model to investigate the relationship between possible factors and termination intention.

We continued to use the revised instrument and collected data to perform our study on termination intention. Unlike directly examining the turnover intention model, exploratory factor analysis (EFA) was performed on the survey items with regard to the variables that are antecedent to the termination intention. Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were performed prior to the EFA to check the ensured appropriateness of this procedure, and the results show that the data were appropriate for factor analysis. Kaiser-Guttman rule and the cumulative percentage of the total variance were selected as criteria for EFA in our study and 11 factors as the independent variables of termination intention were retained based on these two methods. The same process (e.g., model evaluation) was conducted on the study of termination intention to sustain the quality of the model and the factor structure. In measurement model analysis, reliability and validities were tested for future data analysis. Cronbach's Alpha value range from 'Pay' (PS) with a value of .721 to 'Workload' (WL) with a value of .902 and composite reliability value ranged from .847 in 'Organizational Commitment' (OC) to .923 in 'Workload' (WL), which illustrates that the termination intention model has adequate reliability. The 'Organizational commitment' (OC) has the smallest Average Variance Extracted (AVE) value of 0.583 which is greater than the cutoff criterion value of .50, and this confirmed that all variables have an acceptable level of convergent validity. Discriminant validity also meets the criteria as the square root of AVE value along the diagonal are greater than any other value in the corresponding row and column. In the structural model analysis, the collinearity between each set of predictor variables was examined first, and the predictor variable of 'Leadership' to latent variable of 'Termination Intention' had the highest VIF value of $1.835 < 5.0$, which confirmed that there is no collinearity among predictors in the structural model. Path coefficients test indicated that job performance (-.273) and leadership (-.143) were the most important factors affecting 'Termination Intention' (TUI), while only the relationship between job performance and termination intention in the structural model is significant. The coefficient of determination $R^2$ value for 'Termination Intention' (TEI) is .242, and it is considered high in exploratory research in behavior studies. 'Job Performance' (JP) has an above medium effect size of .074, indicating

that this variable is the influential factor affecting 'Termination Intention' (TEI). And the predictive relevance $Q^2$ values for termination intention was .163, which concluded that the path model has predictive relevance.

Correlation analysis shows that termination intention has a significant relationship with job performance ($r$ = -.439, $p$ < .001), leadership ($r$ = -.480, $p$ < .001), organizational commitment ($r$ = -.369, $p$ < .01), role conflict ($r$ = .417, $p$ < .01), team-worker ($r$ = -.314, $p$ < .01) and workload ($r$ = .431, $p$ < .01). PLS regression analysis indicated that the job performance ($\beta$ = -.273, $p$ = .004) and role conflict ($\beta$ = .168, $p$ = .023) are the two significant factors that affects termination intention in a manufacturing organization. Totally, job performance and role conflict explained a significant portion of the variance in manufacturing worker's termination intention ($R^2$ = .242).

- *What are the differences in turnover intention and termination intention across manufacturing worker groups?*

To deepen the understanding of turnover intention and termination intention among worker groups, such as gender and length of service, as the answer to this question can help in analyzing demographic differences and thus lead to a more accurate, personalized implementation of turnover and termination intention. This study compared different worker groups across the variable of turnover intention and termination intention, using Mann-Whitney U test to compare two sample means of gender and Kruskal-Wallis test (one-way ANOVA on ranks) to compare multiple sample means of a length of service.

The results from the Mann-Whitney U test for gender test concluded that statistically significant differences were found between gender and job satisfaction ($p$ < .004), leadership ($p$ < .039) and turnover intention ($p$ < .021). The mean rank represents that females (50.52) experience lower levels of job satisfaction than males (74.33), and this indicated that the male manufacturing workers are more satisfied with their jobs than the female workers. The mean rank result of males (72.95) experience higher levels of leadership than females (55.93) suggested that male manufacturing workers are more satisfied with their leaders than the female workers. Moreover, the mean rank shows that males (65.55) have lower levels of turnover

intention than females (85.00) which implies that female manufacturing workers have more intention to leave their organization than male workers. While statistically insignificant differences between gender and organizational commitment ($p < .374$), work-family conflict ($p < .291$), job performance ($p < .471$) and termination intention ($p < .849$) suggested that there is no significant difference between male and female manufacturing workers among these constructs.

The results from the Kruskal-Wallis test for length of service test indicated that significant differences were found between the various length of service categories and the job satisfaction ($p = .034$) and turnover intention ($p = .034$). The mean ranking of various length of service categories in job satisfaction shows a trend of falling initially and then rising with the length of service, but the mean ranking of various length of service categories in turnover intention suggested that the manufacturing workers' intention to leave their organization increased first and then decreased with the length of service. On the contrary, statistically insignificant differences were found between the various length of service categories and organizational commitment ($p = .184$), leadership ($p = .146$), work-family conflict ($p = .066$), job performance ($p = .153$) and termination intention ($p = .732$) and implies that there is no significant difference between the various length of service categories among these constructs.

## 5.2 Contributions

This research demonstrated factors that impact manufacturing workers' turnover intention and termination intention and introduced its contributions from both theoretical and practical perspectives.

### 5.2.1 Theoretical Contribution

There were many researchers that investigated the relationship between factors and turnover intention and drew conclusions that different reasons could cause the employee to leave their organization in the different industry. However, these researches mainly focus on the high turnover rate industries, such as IT workers and nurses.

Our study represents the first theoretical contribution of a quantitative approach in a substantive area of research within the manufacturing industry. As the economy gets better and the turnover rate in a manufacturing industry gets higher, the turnover intention of manufacturing workers needs more attention and research.

A second theoretical contribution of this study is to represent a causal model with all of the possible factors which affect an employee's turnover intention. Contrary to some previous studies that reported limited few variables to affect turnover intention, this study provided all of the possible factors and investigated their relationship with turnover intention.

The third theoretical contribution is the concept of employee termination intention and is being proposed for the first time and developed a causal model to investigate the factors that affect their termination intention. Moreover, our study of termination intention offers important specific recommendations for future research, and we hope to guide further research toward a deeper understanding of the employee turnover phenomenon.

### 5.2.2 Practical Contribution

Being the first study to investigate the relationship between factors and employee turnover and termination intention in the manufacturing organization, the current study represented the practical contribution as in the following.

The first practical contribution is to propose one practical survey questionnaire of turnover and termination intention for human resource in the manufacturing organization. This survey questionnaire can be used as an important tool by management within the manufacturing organization and other similar institutions or even other institutions in different industries.

The other practical contribution of this study is that the statistics results indicate the significant and insignificant factors for turnover and termination intention and can provide meaningful insights and conclusions to management for future organizational planning and policymaking. Since the model of turnover intention paid attention to all of the possible factors, some strategies could be derived from the model by understanding and controlling the predictors of job satisfaction, organizational

commitment, and work-family conflict. Moreover, strategies could also be derived from the causal model of termination intention by understanding that work performance is the main and only significant predictor for employee's termination intention.

## 5.3 Limitations

Every study has its strengths, weakness, and limitations. There is no doubt that our study had several limitations and are listed as follows.

The main limitation of this study was that the results had limited generalizability since all variables were measured with data collected from a single manufacturing company with only 138 valid datasets, which may limit the external validity. Nonetheless, the results of our study did provide insight into reasons that manufacturing workers exhibited turnover intentions and the predictor of the turnover intentions.

The second limitation of this study was that our study used a self-report questionnaire, which may produce a lack of control over respondents or a significant threat in common method variance. The potential bias effects and limitations of the generalization of this study due to the convenience sampling method adopted in this research should be included as well.

The third limitation was that the cross-sectional method was used in this study and it could be a disadvantage for the research. Due to the fact that the cross-sectional method can measure perceptions and intentions at a single point in time, the results are not guaranteed to be a good representative. Therefore, longitudinal data could be collected in future research to help predict turnover and termination intention over time and enhance the understanding of causality and interrelationships between variables, turnover and termination intentions.

## 5.4 Future Work

This research study mainly investigated manufacturing workers' turnover and termination intention. So, the possible future work from two aspects could be explained, namely turnover intention and termination intention.

For turnover intention, the possible future work listed as follows.

- *One suggestion for further study would be to repeat the current study using different test instruments or different research techniques. Since the unexpected finding of the relationship between leadership and turnover intention was found to be insignificant, future research may benefit on the use of a different test instrument, such as a single-item measure of leadership and turnover intention.*
- *A longitudinal study could be conducted to investigate the manufacturing workers' turnover intention over time. In other words, it was recommended that the factors and turnover intention relationship be examined in light of economic conditions. Muchinsky and Morrow (1980) proposed a turnover model and predicted that the relationship between job satisfaction and turnover is moderated by time (e.g., economic conditions). Specifically, employees are more likely to keep their jobs in times of economic recession or high unemployment, while are more likely to a turnover if they are not satisfied with their jobs in the time of a better economy.*

For termination intention, the possible future work is listed as follows.

- *More studies could be conducted to investigate the manufacturing workers' termination intention in different industry and/or in different areas/countries. This study was conducted in one large manufacturing organization, and therefore a study at another industry or area could help with the generalization of the study and further validate research findings.*
- *We use a cross-sectional survey for this research; further research also needs to focus on a different time and check whether the relationship between factors and termination intention would change with time (e.g., economic conditions). The organization or company is quick to lay off employees in times of economic recession, and this is also easy to increase the employees' termination intention.*

## 5.5 Conclusion

In this study of one large manufacturing company, we tested the relationship between job satisfaction, organizational commitment, leadership, work-family conflict, job performance, and turnover intention. The results concluded that the turnover intention of manufacturing workers was significantly associated with job satisfaction, organizational commitment, and work-family conflict. Leadership was also significant for turnover intention, but their efforts on turnover intention were fully mediated by job satisfaction and organizational commitment. Job performance was not a critical factor of turnover intention for manufacturing workers. Moreover, absenteeism and working environment significantly affect job satisfaction and organizational commitment. On the other hand, the employee's termination intention was only significantly affected by job performance. Hence, our research suggested that the policymakers and administrators in the manufacturing company should develop appropriate policies which focus on job satisfaction, organizational commitment and work-family conflict to achieve the objective of reducing turnover intention and focus on job performance to decrease termination intention. Measures should be taken to enhance the worker's job satisfaction and organizational commitment, balance the work-family conflict,and improve the leadership style.

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# APPENDIX

# Appendix A: Employee Turnover Intention Survey

Dear participant,

Thank you very much for participating in this study, your answers will help us to understand better how you feel about your work and this plant. Please be assured that your responses will be kept completely confidential. There will be no attempt to identify any individual person from the answers to the survey. Your participation is voluntary, and you may withdraw at any time and can decline to answer any survey items.

If you have questions about your rights as a participant, you may contact the University of Tennessee IRB Compliance Officer at utkirb@utk.edu or (865) 974-7697.

Thank you in advance for your participation. Your help is greatly appreciated and critical to this research!

Instructions:

- *All survey questions use the following response scale:*
- *1. Strongly Disagree 2. Disagree 3. Neither Agree nor Disagree 4. Agree 5. Strongly agree*
- *Please fill in each item with a circle the number.*
- *Choose one number per question.*

| **1. Pay** | **Strongly Disagree** | **Disagree** | **Neither Agree nor Disagree** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|
| I feel I am being paid a fair amount of the work I do. | 1 | 2 | 3 | 4 | 5 |
| The benefits package we have is equitable. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| I feel satisfied with my chances of salary increases. | 1 | 2 | 3 | 4 | 5 |
| **2. Team-worker** | | | | | |
| I like the people I work with. | 1 | 2 | 3 | 4 | 5 |
| The team I work with communicates well together. | 1 | 2 | 3 | 4 | 5 |
| **3. Autonomy** | | | | | |
| Usually, my supervisor does NOT have to approve my decisions before I can take action. | 1 | 2 | 3 | 4 | 5 |
| I can usually do what I want on my job without consulting my supervisor. | 1 | 2 | 3 | 4 | 5 |
| **4. Work Stress** | | | | | |
| I feel exhausted after daily work. | 1 | 2 | 3 | 4 | 5 |
| I often feel depressed and unhappy at work. | 1 | 2 | 3 | 4 | 5 |
| The job difficulty usually brings me sleeplessness. | 1 | 2 | 3 | 4 | 5 |
| **5. Workload** | | | | | |
| I am unable to meet out the demands of my job. | 1 | 2 | 3 | 4 | 5 |
| I work for long hours, on overtime and even on holidays. | 1 | 2 | 3 | 4 | 5 |
| I feel tired during the day due to excessive workload. | 1 | 2 | 3 | 4 | 5 |
| **6. Promotion Opportunity** | | | | | |
| There is really too little chance for promotion on my job. | 1 | 2 | 3 | 4 | 5 |
| Those who do well on the job stand a fair chance of being promoted. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| I am satisfied with my chances for promotion. | 1 | 2 | 3 | 4 | 5 |
| **7. Developing or Training** | | | | | |
| I am satisfied with the career advancement opportunities offered by my organization. | 1 | 2 | 3 | 4 | 5 |
| I am satisfied with the job-related training my organization offers. | 1 | 2 | 3 | 4 | 5 |
| **8. Routinization** | | | | | |
| I have the opportunity to do some different things in my job. | 1 | 2 | 3 | 4 | 5 |
| The duties in my job are repetitious. | 1 | 2 | 3 | 4 | 5 |
| **9. Role Ambiguity** | | | | | |
| I know exactly what is expected of me in my job. | 1 | 2 | 3 | 4 | 5 |
| I feel certain about how much authority I have. | 1 | 2 | 3 | 4 | 5 |
| **10. Role Conflict** | | | | | |
| Job requests from my administrator and team-workers are often conflicting. | 1 | 2 | 3 | 4 | 5 |
| I receive an assignment without adequate resources and materials to execute it. | 1 | 2 | 3 | 4 | 5 |
| Sometimes, I work under incompatible policies and guidelines. | 1 | 2 | 3 | 4 | 5 |
| **11. Working Environment** | | | | | |
| My workplace is safe. | 1 | 2 | 3 | 4 | 5 |
| Overall, I am satisfied with my workplace. | 1 | 2 | 3 | 4 | 5 |
| **12. Absenteeism** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| I am always feeling courageous before my daily work activities. | 1 | 2 | 3 | 4 | 5 |
| There are no disruptions in the amount of sleep I get before my scheduled academic activities. | 1 | 2 | 3 | 4 | 5 |
| My work is NOT interfering with activities going on at home. | 1 | 2 | 3 | 4 | 5 |
| **13. Job Satisfaction** | | | | | |
| I feel a sense of pride in doing my job. | 1 | 2 | 3 | 4 | 5 |
| My job is enjoyable. | 1 | 2 | 3 | 4 | 5 |
| I sometimes feel my job is meaningless. | 1 | 2 | 3 | 4 | 5 |
| Overall, I am satisfied with my job. | 1 | 2 | 3 | 4 | 5 |
| **14. Organizational Commitment** | | | | | |
| I am very happy being a member of this organization. | 1 | 2 | 3 | 4 | 5 |
| I do NOT feel a 'strong' sense of belonging to my organization. | 1 | 2 | 3 | 4 | 5 |
| I am loyal to this organization because I have invested a lot in it, emotionally, socially, and economically. | 1 | 2 | 3 | 4 | 5 |
| I feel that I owe this organization quite a bit because of what it has done for me. | 1 | 2 | 3 | 4 | 5 |
| My organization deserves my loyalty because of its treatment towards me. | 1 | 2 | 3 | 4 | 5 |
| **15. Leadership** | | | | | |
| My supervisor is quite competent in doing his/her job. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| My supervisor and l have a good working relationship. | 1 | 2 | 3 | 4 | 5 |
| My supervisor is willing to help me when I need help. | 1 | 2 | 3 | 4 | 5 |
| My supervisor is unfair to me. | 1 | 2 | 3 | 4 | 5 |
| **16. Work-family conflict** | | | | | |
| The demands of my work interfere with my home and family life. | 1 | 2 | 3 | 4 | 5 |
| The amount of time my job takes up makes it difficult to fulfill family responsibilities. | 1 | 2 | 3 | 4 | 5 |
| Due to work-related duties, I have to make changes to my plans for family activities. | 1 | 2 | 3 | 4 | 5 |
| **17. Job Performance** | | | | | |
| I think my supervisors were satisfied with my work. | 1 | 2 | 3 | 4 | 5 |
| I managed to plan my work so that it was done on time. | 1 | 2 | 3 | 4 | 5 |
| I took the initiative when there was a problem to be solved. | 1 | 2 | 3 | 4 | 5 |
| I was able to fulfill my responsibilities. | 1 | 2 | 3 | 4 | 5 |
| **18. Turnover Intention** | | | | | |
| I have actively searched for a new job in other organization. | 1 | 2 | 3 | 4 | 5 |
| I have actually looked for other jobs after I entered the current company. | 1 | 2 | 3 | 4 | 5 |
| I frequently think about quitting my job in this organization. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| I have a plan to switch to other business or sector. | 1 | 2 | 3 | 4 | 5 |
| I have a desire to leave my job in this organization. | 1 | 2 | 3 | 4 | 5 |
| **19. Termination Intentions** | | | | | |
| I believe that the organization is seeking to terminate me soon. | 1 | 2 | 3 | 4 | 5 |
| I will probably be fired in the near future. | 1 | 2 | 3 | 4 | 5 |
| I do NOT think that I am in danger of being fired from my current employer. | 1 | 2 | 3 | 4 | 5 |

**20. Please indicate your gender.**

| | |
|---|---|
| Male | 1 |
| Female | 2 |

**21. Please indicate your race.**

| | |
|---|---|
| White / Caucasian | 1 |
| African-American | 2 |
| Hispanic / Latin | 3 |
| Native American | 4 |
| Asian / Pacific Islander | 5 |
| Other | 6 |

**22. Please indicate your age.**

| | |
|---|---|
| Under 21 | 1 |
| 22 - 25 | 2 |
| 26 - 30 | 3 |
| 31 - 40 | 4 |
| 41 - 50 | 5 |
| 51 or more | 6 |

**23. Please indicate your highest academic qualification.**

| | |
|---|---|
| High school graduate | 1 |
| Bachelor | 2 |
| Master | 3 |
| Ph.D. | 4 |
| Other | 5 |

**24. Please indicate your salary range.**

| | |
|---|---|
| Under $30,000 | 1 |
| $30,001 - $40,000 | 2 |
| $40,001 - $50,000 | 3 |
| $50,001 - $75,000 | 4 |
| $75,001 - $100,000 | 5 |
| More than $100,000 | 6 |

**25. How many years have you been working for the current organization?**

| | |
|---|---|
| Less than 1 year | 1 |
| 1 - 2+ | 2 |
| 3 - 5+ | 3 |
| 6 - 10+ | 4 |
| 11 - 20+ | 5 |
| 21 or more | 6 |

**26. Please indicate your job group.**

| | |
|---|---|
| Team Member | 1 |
| Team Leader / QA Inspector | 2 |
| Area Coordinator | 3 |
| Office Group / Sales Rep | 4 |
| Manager | 5 |

# Appendix B: UTK IRB Approval Letter

THE UNIVERSITY of TENNESSEE
KNOXVILLE
Office of Research & Engagement
INSTITUTIONAL REVIEW BOARD (IRB)

1534 White Ave.
Knoxville, TN 37996-1529
865-974-7697
fax 865-974-7400

April 11, 2017

Yuting Li,
UTK - College of Engineering - Industrial & Information Engineering

**Re: UTK IRB-17-03505-XM**
**Study Title:** Job satisfaction, organization commitment, leadership, environment factors and turnover intention in large organization.

Dear Yuting Li:

The Administrative Section of the UTK Institutional Review Board (IRB) reviewed your application for the above referenced project. The IRB determined that your application is eligible for **exempt** review under 45 CFR 46 Category 2. In accord with 45 CFR 46.116(d), informed consent may be altered, with the cover statement used in lieu of an informed consent interview. The requirement to secure a signed consent form is waived under 45 CFR 46.117(c)(2). Willingness of the subject to participate will constitute adequate documentation of consent. Your application has been determined to comply with proper consideration for the rights and welfare of human subjects and the regulatory requirements for the protection of human subjects.

This letter constitutes full approval of your application (version 1.0), Informed consent statement (version 1.2), Recruitment Script (version1.0), and Survey Questionnaire (version 1.0), stamped approved by the IRB on 04/11/2017 for the above referenced study.

In the event that volunteers are to be recruited using solicitation materials, such as brochures, posters, web-based advertisements, etc., these materials must receive prior approval of the IRB.

Any alterations (revisions) in the protocol, consent cover statement, or survey must be promptly submitted to and approved by the UTK Institutional Review Board prior to implementation of these revisions. You have individual responsibility for reporting to the Board in the event of unanticipated or serious adverse events and subject deaths.

Sincerely,

Colleen P. Gilrane

**Colleen P. Gilrane, Ph.D.**
Chair

# Appendix C: Scale Frequency and Descriptive Statistics

## C.1 Scale Frequencies

**Table C.1:** Frequency table of Pay 1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 3.6 | 3.6 | 3.6 |
| | Disagree | 12 | 8.7 | 8.7 | 12.3 |
| | Neither Agree or Disagree | 17 | 12.3 | 12.3 | 24.6 |
| | Agree | 86 | 62.3 | 62.3 | 87.0 |
| | Strongly Agree | 18 | 13.0 | 13.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.2:** Frequency table of Pay 2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 0 | 0 | 0 | 0 |
| | Disagree | 10 | 7.2 | 7.2 | 7.2 |
| | Neither Agree or Disagree | 24 | 17.4 | 17.4 | 24.6 |
| | Agree | 88 | 63.8 | 63.8 | 88.4 |
| | Strongly Agree | 16 | 11.6 | 11.6 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.3:** Frequency table of Pay 3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 3.6 | 3.6 | 3.6 |
| | Disagree | 21 | 15.2 | 15.2 | 18.8 |
| | Neither Agree or Disagree | 51 | 37.0 | 37.0 | 55.8 |
| | Agree | 51 | 37.0 | 37.0 | 92.8 |
| | Strongly Agree | 10 | 7.2 | 7.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.4:** Frequency table of TW1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 0 | 0 | 0 | 1.4 |
| | Neither Agree or Disagree | 15 | 10.9 | 10.9 | 12.3 |
| | Agree | 71 | 51.4 | 51.4 | 63.8 |
| | Strongly Agree | 50 | 36.2 | 36.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.5:** Frequency table of TW2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 3.6 | 3.6 | 3.6 |
| | Disagree | 5 | 3.6 | 3.6 | 7.2 |
| | Neither Agree or Disagree | 24 | 17.4 | 17.4 | 24.6 |
| | Agree | 76 | 55.1 | 55.1 | 79.7 |
| | Strongly Agree | 28 | 20.3 | 20.3 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.6:** Frequency table of AUT1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 13 | 9.4 | 9.4 | 10.9 |
| | Neither Agree or Disagree | 26 | 18.8 | 18.8 | 29.7 |
| | Agree | 77 | 55.8 | 55.8 | 85.5 |
| | Strongly Agree | 20 | 14.5 | 14.5 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.7:** Frequency table of AUT2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 22 | 15.9 | 15.9 | 17.4 |
| | Neither Agree or Disagree | 37 | 26.8 | 26.8 | 44.2 |
| | Agree | 58 | 42.0 | 42.0 | 86.2 |
| | Strongly Agree | 19 | 13.8 | 13.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.8:** Frequency table of WS1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 0 | 0 | 0 | 0 |
| | Disagree | 11 | 8.0 | 8.0 | 8.0 |
| | Neither Agree or Disagree | 29 | 21.0 | 21.0 | 29.0 |
| | Agree | 64 | 46.4 | 46.4 | 75.4 |
| | Strongly Agree | 34 | 24.6 | 24.6 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.9:** Frequency table of WS2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 17 | 12.3 | 12.3 | 12.3 |
| | Disagree | 54 | 39.1 | 39.1 | 51.4 |
| | Neither Agree or Disagree | 47 | 34.1 | 34.1 | 85.5 |
| | Agree | 18 | 13.0 | 13.0 | 98.6 |
| | Strongly Agree | 2 | 1.4 | 1.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.10:** Frequency table of WS3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 16 | 11.6 | 11.6 | 11.6 |
| | Disagree | 55 | 39.9 | 39.9 | 51.4 |
| | Neither Agree or Disagree | 35 | 25.4 | 25.4 | 76.8 |
| | Agree | 26 | 18.8 | 18.8 | 95.7 |
| | Strongly Agree | 6 | 4.3 | 4.3 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.11:** Frequency table of WL1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 30 | 21.7 | 21.7 | 21.7 |
| | Disagree | 59 | 42.8 | 42.8 | 64.5 |
| | Neither Agree or Disagree | 21 | 15.2 | 15.2 | 79.7 |
| | Agree | 17 | 12.3 | 12.3 | 92.0 |
| | Strongly Agree | 11 | 8.0 | 8.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.12:** Frequency table of WL2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 37 | 26.8 | 26.8 | 26.8 |
| | Disagree | 56 | 40.6 | 40.6 | 67.4 |
| | Neither Agree or Disagree | 21 | 15.2 | 15.2 | 82.6 |
| | Agree | 16 | 11.6 | 11.6 | 94.2 |
| | Strongly Agree | 8 | 5.8 | 5.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.13:** Frequency table of WL3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 13 | 9.4 | 9.4 | 9.4 |
| | Disagree | 35 | 25.4 | 25.4 | 34.8 |
| | Neither Agree or Disagree | 42 | 30.4 | 30.4 | 65.2 |
| | Agree | 40 | 29.0 | 29.0 | 94.2 |
| | Strongly Agree | 8 | 5.8 | 5.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.14:** Frequency table of PO1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 25 | 18.1 | 18.1 | 22.5 |
| | Neither Agree or Disagree | 48 | 34.8 | 34.8 | 57.2 |
| | Agree | 51 | 37.0 | 37.0 | 94.2 |
| | Strongly Agree | 8 | 5.8 | 5.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.15:** Frequency table of PO2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 8 | 5.8 | 5.8 | 5.8 |
| | Disagree | 24 | 17.4 | 17.4 | 23.2 |
| | Neither Agree or Disagree | 46 | 33.3 | 33.3 | 56.5 |
| | Agree | 49 | 35.5 | 35.5 | 92.0 |
| | Strongly Agree | 11 | 8.0 | 8.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.16:** Frequency table of PO3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 8 | 5.8 | 5.8 | 5.8 |
| | Disagree | 29 | 21.0 | 21.0 | 26.8 |
| | Neither Agree or Disagree | 47 | 34.1 | 34.1 | 60.9 |
| | Agree | 51 | 37.0 | 37.0 | 97.8 |
| | Strongly Agree | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.17:** Frequency table of DT1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 28 | 20.3 | 20.3 | 24.6 |
| | Neither Agree or Disagree | 43 | 31.2 | 31.2 | 55.8 |
| | Agree | 60 | 43.5 | 43.5 | 99.3 |
| | Strongly Agree | 1 | .7 | .7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.18:** Frequency table of DT2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 15 | 10.9 | 10.9 | 15.2 |
| | Neither Agree or Disagree | 44 | 31.9 | 31.9 | 47.1 |
| | Agree | 70 | 50.7 | 50.7 | 97.8 |
| | Strongly Agree | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.19:** Frequency table of ROU1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 8 | 5.8 | 5.8 | 5.8 |
| | Disagree | 16 | 11.6 | 11.6 | 17.4 |
| | Neither Agree or Disagree | 30 | 21.7 | 21.7 | 39.1 |
| | Agree | 71 | 51.4 | 51.4 | 90.6 |
| | Strongly Agree | 13 | 9.4 | 9.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.20:** Frequency table of ROU2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 13 | 9.4 | 9.4 | 9.4 |
| | Disagree | 56 | 40.6 | 40.6 | 50.0 |
| | Neither Agree or Disagree | 35 | 25.4 | 25.4 | 75.4 |
| | Agree | 22 | 15.9 | 15.9 | 91.3 |
| | Strongly Agree | 12 | 8.7 | 8.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.21:** Frequency table of RA1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 12 | 8.7 | 8.7 | 13.0 |
| | Neither Agree or Disagree | 11 | 8.0 | 8.0 | 21.0 |
| | Agree | 74 | 53.6 | 53.6 | 74.6 |
| | Strongly Agree | 35 | 25.4 | 25.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.22:** Frequency table of RA2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 2.2 | 2.2 | 2.2 |
| | Disagree | 18 | 13.0 | 13.0 | 15.2 |
| | Neither Agree or Disagree | 37 | 26.8 | 26.8 | 42.0 |
| | Agree | 61 | 44.2 | 44.2 | 86.2 |
| | Strongly Agree | 19 | 13.8 | 13.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.23:** Frequency table of RC1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 9 | 6.5 | 6.5 | 6.5 |
| | Disagree | 32 | 23.2 | 23.2 | 29.7 |
| | Neither Agree or Disagree | 59 | 42.8 | 42.8 | 72.5 |
| | Agree | 35 | 25.4 | 25.4 | 97.8 |
| | Strongly Agree | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.24:** Frequency table of RC2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 15 | 10.9 | 10.9 | 10.9 |
| | Disagree | 58 | 42.0 | 42.0 | 52.9 |
| | Neither Agree or Disagree | 39 | 28.3 | 28.3 | 81.2 |
| | Agree | 22 | 15.9 | 15.9 | 97.1 |
| | Strongly Agree | 4 | 2.9 | 2.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.25:** Frequency table of RC3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 15 | 10.9 | 10.9 | 10.9 |
| | Disagree | 53 | 38.4 | 38.4 | 49.3 |
| | Neither Agree or Disagree | 2 | 1.4 | 1.4 | 50.7 |
| | Agree | 50 | 36.2 | 36.2 | 87.0 |
| | Strongly Agree | 18 | 13.0 | 13.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.26:** Frequency table of WE1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 2.2 | 2.2 | 2.2 |
| | Disagree | 10 | 7.2 | 7.2 | 9.4 |
| | Neither Agree or Disagree | 23 | 16.7 | 16.7 | 26.1 |
| | Agree | 73 | 52.9 | 52.9 | 79.0 |
| | Strongly Agree | 29 | 21.0 | 21.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.27:** Frequency table of WE2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 2 | 1.4 | 1.4 | 5.8 |
| | Neither Agree or Disagree | 29 | 21.0 | 21.0 | 26.8 |
| | Agree | 75 | 54.3 | 54.3 | 81.2 |
| | Strongly Agree | 26 | 18.8 | 18.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.28:** Frequency table of ABS1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 4 | 2.9 | 2.9 | 2.9 |
| | Disagree | 9 | 6.5 | 6.5 | 9.4 |
| | Neither Agree or Disagree | 67 | 48.6 | 48.6 | 58.0 |
| | Agree | 50 | 36.2 | 36.2 | 94.2 |
| | Strongly Agree | 8 | 5.8 | 5.8 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.29:** Frequency table of ABS2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 7 | 5.1 | 5.1 | 5.1 |
| | Disagree | 15 | 10.9 | 10.9 | 15.9 |
| | Neither Agree or Disagree | 51 | 37.0 | 37.0 | 52.9 |
| | Agree | 56 | 40.6 | 40.6 | 93.5 |
| | Strongly Agree | 9 | 6.5 | 6.5 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.30:** Frequency table of ABS3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 25 | 18.1 | 18.1 | 22.5 |
| | Neither Agree or Disagree | 28 | 20.3 | 20.3 | 42.8 |
| | Agree | 61 | 44.2 | 44.2 | 87.0 |
| | Strongly Agree | 18 | 13.0 | 13.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.31:** Frequency table of JS1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 2 | 1.4 | 1.4 | 2.9 |
| | Neither Agree or Disagree | 16 | 11.6 | 11.6 | 14.5 |
| | Agree | 86 | 62.3 | 62.3 | 76.8 |
| | Strongly Agree | 32 | 23.2 | 23.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.32:** Frequency table of JS2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 2.2 | 2.2 | 2.2 |
| | Disagree | 10 | 7.2 | 7.2 | 9.4 |
| | Neither Agree or Disagree | 40 | 29.0 | 29.0 | 38.4 |
| | Agree | 67 | 48.6 | 48.6 | 87.0 |
| | Strongly Agree | 18 | 13.0 | 13.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.33:** Frequency table of JS3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 16 | 11.6 | 11.6 | 11.6 |
| | Disagree | 62 | 44.9 | 44.9 | 56.5 |
| | Neither Agree or Disagree | 40 | 29.0 | 29.0 | 85.5 |
| | Agree | 16 | 11.6 | 11.6 | 97.1 |
| | Strongly Agree | 4 | 2.9 | 2.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.34:** Frequency table of JS4

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 6 | 4.3 | 4.3 | 5.8 |
| | Neither Agree or Disagree | 29 | 21.0 | 21.0 | 26.8 |
| | Agree | 78 | 56.5 | 56.5 | 83.3 |
| | Strongly Agree | 23 | 16.7 | 16.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.35:** Frequency table of OC1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | .7 | .7 | .7 |
| | Disagree | 2 | 1.4 | 1.4 | 2.2 |
| | Neither Agree or Disagree | 27 | 19.6 | 19.6 | 21.7 |
| | Agree | 73 | 52.9 | 52.9 | 74.6 |
| | Strongly Agree | 35 | 25.4 | 25.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.36:** Frequency table of OC2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 20 | 14.5 | 14.5 | 14.5 |
| | Disagree | 65 | 47.1 | 47.1 | 61.6 |
| | Neither Agree or Disagree | 35 | 25.4 | 25.4 | 87.0 |
| | Agree | 16 | 11.6 | 11.6 | 98.6 |
| | Strongly Agree | 2 | 1.4 | 1.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.37:** Frequency table of OC3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 1.4 | 1.4 | 1.4 |
| | Disagree | 1 | .7 | .7 | 2.2 |
| | Neither Agree or Disagree | 28 | 20.3 | 20.3 | 22.5 |
| | Agree | 77 | 55.8 | 55.8 | 78.3 |
| | Strongly Agree | 30 | 21.7 | 21.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.38:** Frequency table of OC4

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 3.6 | 3.6 | 3.6 |
| | Disagree | 21 | 15.2 | 15.2 | 18.8 |
| | Neither Agree or Disagree | 56 | 40.6 | 40.6 | 59.4 |
| | Agree | 43 | 31.2 | 31.2 | 90.6 |
| | Strongly Agree | 13 | 9.4 | 9.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.39:** Frequency table of OC5

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 4.3 | 4.3 | 4.3 |
| | Disagree | 9 | 6.5 | 6.5 | 10.9 |
| | Neither Agree or Disagree | 46 | 33.3 | 33.3 | 44.2 |
| | Agree | 65 | 47.1 | 47.1 | 91.3 |
| | Strongly Agree | 12 | 8.7 | 8.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.40:** Frequency table of LEA1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | .7 | .7 | .7 |
| | Disagree | 1 | .7 | .7 | 1.4 |
| | Neither Agree or Disagree | 20 | 14.5 | 14.5 | 15.9 |
| | Agree | 82 | 59.4 | 59.4 | 75.4 |
| | Strongly Agree | 34 | 24.6 | 24.6 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.41:** Frequency table of LEA2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 2.2 | 2.2 | 2.2 |
| | Disagree | 1 | .7 | .7 | 2.9 |
| | Neither Agree or Disagree | 15 | 10.9 | 10.9 | 13.8 |
| | Agree | 77 | 55.8 | 55.8 | 69.6 |
| | Strongly Agree | 42 | 30.4 | 30.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.42:** Frequency table of LEA3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 4 | 2.9 | 2.9 | 2.9 |
| | Disagree | 1 | .7 | .7 | 3.6 |
| | Neither Agree or Disagree | 16 | 11.6 | 11.6 | 15.2 |
| | Agree | 77 | 55.8 | 55.8 | 71.0 |
| | Strongly Agree | 40 | 29.0 | 29.0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.43:** Frequency table of LEA4

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 46 | 33.3 | 33.3 | 33.3 |
| | Disagree | 63 | 45.7 | 45.7 | 79.0 |
| | Neither Agree or Disagree | 19 | 13.8 | 13.8 | 92.8 |
| | Agree | 7 | 5.1 | 5.1 | 97.8 |
| | Strongly Agree | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.44:** Frequency table of WFC1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 24 | 17.4 | 17.4 | 17.4 |
| | Disagree | 62 | 44.9 | 44.9 | 62.3 |
| | Neither Agree or Disagree | 30 | 21.7 | 21.7 | 84.1 |
| | Agree | 19 | 13.8 | 13.8 | 97.8 |
| | Strongly Agree | 3 | 2.2 | 2.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.45:** Frequency table of WFC2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 23 | 16.7 | 16.7 | 16.7 |
| | Disagree | 61 | 44.2 | 44.2 | 60.9 |
| | Neither Agree or Disagree | 30 | 21.7 | 21.7 | 82.6 |
| | Agree | 22 | 15.9 | 15.9 | 98.6 |
| | Strongly Agree | 2 | 1.4 | 1.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.46:** Frequency table of WFC3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 22 | 15.9 | 15.9 | 15.9 |
| | Disagree | 52 | 37.7 | 37.7 | 53.6 |
| | Neither Agree or Disagree | 33 | 23.9 | 23.9 | 77.5 |
| | Agree | 27 | 19.6 | 19.6 | 97.1 |
| | Strongly Agree | 4 | 2.9 | 2.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.47:** Frequency table of JP1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | .7 | .7 | .7 |
| | Disagree | 1 | .7 | .7 | 1.4 |
| | Neither Agree or Disagree | 13 | 9.4 | 9.4 | 10.9 |
| | Agree | 98 | 71.0 | 71.0 | 81.9 |
| | Strongly Agree | 25 | 18.1 | 18.1 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.48:** Frequency table of JP2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 0 | 0 | 0 | 0 |
| | Disagree | 1 | .7 | .7 | .7 |
| | Neither Agree or Disagree | 22 | 15.9 | 15.9 | 16.7 |
| | Agree | 91 | 65.9 | 65.9 | 82.6 |
| | Strongly Agree | 24 | 17.4 | 17.4 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.49:** Frequency table of JP3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 0 | 0 | 0 | 0 |
| | Disagree | 0 | 0 | 0 | 0 |
| | Neither Agree or Disagree | 22 | 15.9 | 15.9 | 15.9 |
| | Agree | 85 | 61.6 | 61.6 | 77.5 |
| | Strongly Agree | 31 | 22.5 | 22.5 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.50:** Frequency table of JP4

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | .7 | .7 | .7 |
| | Disagree | 1 | .7 | .7 | 1.4 |
| | Neither Agree or Disagree | 20 | 14.5 | 14.5 | 15.9 |
| | Agree | 86 | 62.3 | 62.3 | 78.3 |
| | Strongly Agree | 30 | 21.7 | 21.7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.51:** Frequency table of TUI1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 28 | 20.3 | 20.3 | 20.3 |
| | Disagree | 52 | 37.7 | 37.7 | 58.0 |
| | Neither Agree or Disagree | 31 | 22.5 | 22.5 | 80.4 |
| | Agree | 20 | 14.5 | 14.5 | 94.9 |
| | Strongly Agree | 7 | 5.1 | 5.1 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.52:** Frequency table of TUI2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 30 | 21.7 | 21.7 | 21.7 |
| | Disagree | 50 | 36.2 | 36.2 | 58.0 |
| | Neither Agree or Disagree | 31 | 22.5 | 22.5 | 80.4 |
| | Agree | 20 | 14.5 | 14.5 | 94.9 |
| | Strongly Agree | 7 | 5.1 | 5.1 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.53:** Frequency table of TUI3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 28 | 20.3 | 20.3 | 20.3 |
| | Disagree | 51 | 37.0 | 37.0 | 57.2 |
| | Neither Agree or Disagree | 30 | 21.7 | 21.7 | 79.0 |
| | Agree | 19 | 13.8 | 13.8 | 92.8 |
| | Strongly Agree | 10 | 7.2 | 7.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.54:** Frequency table of TUI4

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 34 | 24.6 | 24.6 | 24.6 |
| | Disagree | 53 | 38.4 | 38.4 | 63.0 |
| | Neither Agree or Disagree | 36 | 26.1 | 26.1 | 89.1 |
| | Agree | 10 | 7.2 | 7.2 | 96.4 |
| | Strongly Agree | 5 | 3.6 | 3.6 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.55:** Frequency table of TUI5

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 36 | 26.1 | 26.1 | 26.1 |
| | Disagree | 60 | 43.5 | 43.5 | 69.6 |
| | Neither Agree or Disagree | 27 | 19.6 | 19.6 | 89.1 |
| | Agree | 11 | 8.0 | 8.0 | 97.1 |
| | Strongly Agree | 4 | 2.9 | 2.9 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.56:** Frequency table of TEI1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 54 | 39.1 | 39.1 | 39.1 |
| | Disagree | 53 | 38.4 | 38.4 | 77.5 |
| | Neither Agree or Disagree | 25 | 18.1 | 18.1 | 95.7 |
| | Agree | 5 | 3.6 | 3.6 | 99.3 |
| | Strongly Agree | 1 | .7 | .7 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.57:** Frequency table of TEI2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 58 | 42.0 | 42.0 | 42.0 |
| | Disagree | 52 | 37.7 | 37.7 | 79.7 |
| | Neither Agree or Disagree | 22 | 15.9 | 15.9 | 95.7 |
| | Agree | 6 | 4.3 | 4.3 | 100.0 |
| | Strongly Agree | 0 | 0 | 0 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

**Table C.58:** Frequency table of TEI3

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 7 | 5.1 | 5.1 | 5.1 |
| | Disagree | 15 | 10.9 | 10.9 | 15.9 |
| | Neither Agree or Disagree | 21 | 15.2 | 15.2 | 31.2 |
| | Agree | 63 | 45.7 | 45.7 | 76.8 |
| | Strongly Agree | 32 | 23.2 | 23.2 | 100.0 |
| | Total | 138 | 100.0 | 100.0 | |

## C.2 Scale Descriptive Statistics

**Table C.59:** Descriptive statistics for all survey items

| | | N | | Mean | Std. Error of Mean | Median | Std. Deviation | Variance | Skewness | Std. Error of Skewness | Kurtosis | Std. Error of Kurtosis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Valid | Missing | | | | | | | | | |
| 1 | Pay1 | 137 | 1 | 3.72 | 0.079 | 4.00 | 0.929 | 0.864 | -1.202 | 0.207 | 1.398 | 0.411 |
| 2 | Pay2 | 137 | 1 | 3.80 | 0.063 | 4.00 | 0.739 | 0.546 | -0.763 | 0.207 | 0.730 | 0.411 |
| 3 | Pay3 | 135 | 3 | 3.30 | 0.081 | 3.00 | 0.947 | 0.897 | -0.360 | 0.209 | -0.200 | 0.414 |
| 4 | TW1 | 138 | 0 | 4.21 | 0.064 | 4.00 | 0.749 | 0.561 | -1.211 | 0.206 | 3.326 | 0.410 |
| 5 | TW2 | 136 | 2 | 3.85 | 0.079 | 4.00 | 0.918 | 0.843 | -1.145 | 0.208 | 1.817 | 0.413 |
| 6 | AUT1 | 135 | 3 | 3.72 | 0.076 | 4.00 | 0.886 | 0.786 | -0.784 | 0.209 | 0.520 | 0.414 |
| 7 | AUT2 | 137 | 1 | 3.50 | 0.083 | 4.00 | 0.971 | 0.943 | -0.328 | 0.207 | -0.543 | 0.411 |
| 8 | WS1 | 137 | 1 | 3.88 | 0.075 | 4.00 | 0.878 | 0.771 | -0.481 | 0.207 | -0.385 | 0.411 |
| 9 | WS2 | 137 | 1 | 2.53 | 0.079 | 2.00 | 0.924 | 0.854 | 0.236 | 0.207 | -0.344 | 0.411 |
| 10 | WS3 | 137 | 1 | 2.65 | 0.090 | 2.00 | 1.054 | 1.112 | 0.362 | 0.207 | -0.591 | 0.411 |
| 11 | WL1 | 137 | 1 | 2.20 | 0.088 | 2.00 | 1.035 | 1.071 | 0.928 | 0.207 | 0.443 | 0.411 |
| 12 | WL2 | 137 | 1 | 1.99 | 0.078 | 2.00 | 0.911 | 0.831 | 0.842 | 0.207 | 0.356 | 0.411 |
| 13 | WL3 | 137 | 1 | 3.00 | 0.092 | 3.00 | 1.071 | 1.147 | -0.219 | 0.207 | -0.754 | 0.411 |
| 14 | PO1 | 136 | 2 | 3.22 | 0.083 | 3.00 | 0.964 | 0.929 | -0.356 | 0.208 | -0.370 | 0.413 |
| 15 | PO2 | 136 | 2 | 3.23 | 0.088 | 3.00 | 1.025 | 1.051 | -0.346 | 0.208 | -0.422 | 0.413 |
| 16 | PO3 | 137 | 1 | 3.09 | 0.081 | 3.00 | 0.951 | 0.904 | -0.438 | 0.207 | -0.548 | 0.411 |
| 17 | DT1 | 137 | 1 | 3.16 | 0.078 | 3.00 | 0.909 | 0.827 | -0.623 | 0.207 | -0.564 | 0.411 |
| 18 | DT2 | 136 | 2 | 3.35 | 0.075 | 4.00 | 0.872 | 0.761 | -0.941 | 0.208 | 0.492 | 0.413 |
| 19 | ROU1 | 137 | 1 | 3.64 | 0.081 | 4.00 | 0.954 | 0.910 | -1.116 | 0.207 | 1.231 | 0.411 |
| 20 | ROU2 | 137 | 1 | 3.77 | 0.072 | 4.00 | 0.842 | 0.710 | -0.806 | 0.207 | 0.954 | 0.411 |
| 21 | RA1 | 137 | 1 | 4.19 | 0.054 | 4.00 | 0.636 | 0.405 | -0.703 | 0.207 | 1.731 | 0.411 |
| 22 | RA2 | 137 | 1 | 3.73 | 0.074 | 4.00 | 0.862 | 0.743 | -0.495 | 0.207 | 0.056 | 0.411 |
| 23 | RC1 | 137 | 1 | 2.93 | 0.078 | 3.00 | 0.917 | 0.841 | -0.217 | 0.207 | -0.351 | 0.411 |
| 24 | RC2 | 137 | 1 | 2.58 | 0.084 | 2.00 | 0.983 | 0.965 | 0.399 | 0.207 | -0.371 | 0.411 |
| 25 | RC3 | 136 | 2 | 2.52 | 0.074 | 2.50 | 0.860 | 0.740 | 0.037 | 0.208 | -0.624 | 0.413 |
| 26 | WE1 | 137 | 1 | 3.83 | 0.079 | 4.00 | 0.920 | 0.847 | -0.923 | 0.207 | 0.907 | 0.411 |
| 27 | WE2 | 138 | 0 | 3.82 | 0.077 | 4.00 | 0.906 | 0.821 | -1.185 | 0.206 | 2.188 | 0.410 |
| 28 | ABS1 | 137 | 1 | 3.42 | 0.068 | 3.00 | 0.801 | 0.642 | -0.113 | 0.207 | 0.389 | 0.411 |
| 29 | ABS2 | 136 | 2 | 3.36 | 0.077 | 3.00 | 0.900 | 0.810 | -0.655 | 0.208 | 0.463 | 0.413 |
| 30 | ABS3 | 137 | 1 | 3.47 | 0.088 | 4.00 | 1.029 | 1.060 | -0.629 | 0.207 | -0.230 | 0.411 |
| 31 | JS1 | 137 | 1 | 4.04 | 0.063 | 4.00 | 0.736 | 0.542 | -1.191 | 0.207 | 3.528 | 0.411 |
| 32 | JS2 | 136 | 2 | 3.63 | 0.076 | 4.00 | 0.886 | 0.784 | -0.614 | 0.208 | 0.507 | 0.413 |
| 33 | JS3 | 137 | 1 | 2.50 | 0.081 | 2.00 | 0.948 | 0.899 | 0.536 | 0.207 | 0.028 | 0.411 |
| 34 | JS4 | 136 | 2 | 3.82 | 0.070 | 4.00 | 0.815 | 0.665 | -0.828 | 0.208 | 1.327 | 0.413 |
| 35 | OC1 | 137 | 1 | 4.01 | 0.065 | 4.00 | 0.762 | 0.581 | -0.619 | 0.207 | 0.943 | 0.411 |

**Table C.59: Continued**

| | | N | | Mean | Std. Error of Mean | Median | Std. Deviation | Variance | Skewness | Std. Error of Skewness | Kurtosis | Std. Error of Kurtosis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Valid | Missing | | | | | | | | | |
| 36 | OC2 | 137 | 1 | 2.39 | 0.079 | 2.00 | 0.926 | 0.857 | 0.507 | 0.207 | -0.114 | 0.411 |
| 37 | OC3 | 135 | 3 | 3.96 | 0.066 | 4.00 | 0.771 | 0.595 | -0.815 | 0.209 | 1.920 | 0.414 |
| 38 | OC4 | 136 | 2 | 3.28 | 0.083 | 3.00 | 0.964 | 0.929 | -0.185 | 0.208 | -0.221 | 0.413 |
| 39 | OC5 | 137 | 1 | 3.49 | 0.078 | 4.00 | 0.908 | 0.825 | -0.773 | 0.207 | 0.815 | 0.411 |
| 40 | LEA1 | 137 | 1 | 4.07 | 0.060 | 4.00 | 0.699 | 0.488 | -0.746 | 0.207 | 2.033 | 0.411 |
| 41 | LEA2 | 136 | 2 | 4.12 | 0.068 | 4.00 | 0.799 | 0.638 | -1.367 | 0.208 | 3.639 | 0.413 |
| 42 | LEA3 | 136 | 2 | 4.07 | 0.072 | 4.00 | 0.840 | 0.706 | -1.434 | 0.208 | 3.560 | 0.413 |
| 43 | LEA4 | 136 | 2 | 1.97 | 0.081 | 2.00 | 0.942 | 0.888 | 1.083 | 0.208 | 1.190 | 0.413 |
| 44 | WFC1 | 137 | 1 | 2.39 | 0.086 | 2.00 | 1.002 | 1.004 | 0.539 | 0.207 | -0.299 | 0.411 |
| 45 | WFC2 | 136 | 2 | 2.42 | 0.086 | 2.00 | 1.000 | 1.001 | 0.429 | 0.208 | -0.558 | 0.413 |
| 46 | WFC3 | 137 | 1 | 2.56 | 0.091 | 2.00 | 1.070 | 1.145 | 0.293 | 0.207 | -0.758 | 0.411 |
| 47 | WFC4 | 138 | 0 | 3.23 | 0.087 | 3.00 | 1.027 | 1.055 | -0.357 | 0.206 | -0.290 | 0.410 |
| 48 | WFC5 | 138 | 0 | 3.67 | 0.068 | 4.00 | 0.803 | 0.645 | -0.798 | 0.206 | 1.489 | 0.410 |
| 49 | JP1 | 137 | 1 | 4.05 | 0.052 | 4.00 | 0.610 | 0.372 | -1.011 | 0.207 | 4.719 | 0.411 |
| 50 | JP2 | 136 | 2 | 4.00 | 0.052 | 4.00 | 0.609 | 0.370 | -0.200 | 0.208 | 0.432 | 0.413 |
| 51 | JP3 | 137 | 1 | 4.07 | 0.053 | 4.00 | 0.621 | 0.385 | -0.043 | 0.207 | -0.376 | 0.411 |
| 52 | JP4 | 137 | 1 | 4.04 | 0.058 | 4.00 | 0.680 | 0.462 | -0.758 | 0.207 | 2.377 | 0.411 |
| 53 | TUI1 | 138 | 0 | 2.46 | 0.095 | 2.00 | 1.122 | 1.258 | 0.517 | 0.206 | -0.490 | 0.410 |
| 54 | TUI2 | 137 | 1 | 2.45 | 0.097 | 2.00 | 1.137 | 1.294 | 0.499 | 0.207 | -0.552 | 0.411 |
| 55 | TUI3 | 137 | 1 | 2.51 | 0.101 | 2.00 | 1.176 | 1.384 | 0.537 | 0.207 | -0.547 | 0.411 |
| 56 | TUI4 | 138 | 0 | 2.27 | 0.088 | 2.00 | 1.029 | 1.059 | 0.664 | 0.206 | 0.109 | 0.410 |
| 57 | TUI5 | 134 | 4 | 2.19 | 0.088 | 2.00 | 1.020 | 1.040 | 0.782 | 0.209 | 0.223 | 0.416 |
| 58 | TEI1 | 136 | 2 | 1.88 | 0.076 | 2.00 | 0.887 | 0.786 | 0.816 | 0.208 | 0.276 | 0.413 |
| 59 | TEI2 | 136 | 2 | 1.82 | 0.074 | 2.00 | 0.860 | 0.739 | 0.776 | 0.208 | -0.182 | 0.413 |
| 60 | TEI3 | 135 | 3 | 3.70 | 0.095 | 4.00 | 1.107 | 1.225 | -0.830 | 0.209 | 0.033 | 0.414 |

# Appendix D: Cross Loading and Factor Loading

## D.1 Cross loadings for the reflective measurement model

**Table D.1:** Cross loadings for the reflective measurement model

| | ABS | DT | WFC | JP | JS | LEA | OC | PS | PO | RA | RC | ROU | TW | TUI | WL | WS | WE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABS1 | .83 | .369 | -.496 | .173 | .431 | .38 | .562 | .342 | .299 | .318 | -.287 | .321 | .103 | -.46 | -.421 | -.385 | .34 |
| ABS2 | .849 | .396 | -.457 | .164 | .36 | .338 | .401 | .41 | .356 | .348 | -.348 | .234 | .229 | -.444 | -.355 | -.262 | .402 |
| ABS3 | .808 | .406 | -.72 | .268 | .393 | .413 | .434 | .221 | .324 | .377 | -.381 | .262 | .26 | -.462 | -.626 | -.335 | .401 |
| DT1 | .453 | .953 | -.331 | .012 | .416 | .242 | .382 | .564 | .738 | .545 | -.166 | .572 | .216 | -.46 | -.266 | -.473 | .495 |
| DT2 | .371 | .816 | -.222 | .035 | .265 | .113 | .142 | .342 | .518 | .711 | -.189 | .462 | .24 | -.222 | -.213 | -.338 | .367 |
| WFC1 | -.687 | -.274 | .926 | -.295 | -.431 | -.521 | -.469 | -.257 | -.236 | -.313 | .446 | -.229 | -.245 | .533 | .735 | .392 | -.278 |
| WFC2 | -.61 | -.317 | .93 | -.325 | -.427 | -.452 | -.364 | -.196 | -.302 | -.278 | .366 | -.267 | -.186 | .483 | .727 | .407 | -.26 |
| WFC3 | -.527 | -.295 | .87 | -.299 | -.423 | -.396 | -.387 | -.227 | -.309 | -.211 | .309 | -.224 | -.193 | .47 | .605 | .35 | -.191 |
| JP1 | .27 | .057 | -.361 | .838 | .363 | .466 | .398 | .089 | .042 | .135 | -.192 | .021 | .198 | -.256 | -.24 | -.042 | .187 |
| JP2 | .155 | .021 | -.252 | .777 | .302 | .243 | .284 | .092 | -.032 | .081 | -.27 | .08 | .202 | -.176 | -.223 | -.159 | .119 |
| JP3 | .154 | .003 | -.203 | .844 | .391 | .244 | .327 | .059 | -.015 | .06 | -.138 | .049 | .25 | -.192 | -.125 | -.071 | .137 |
| JP4 | .212 | -.018 | -.29 | .831 | .245 | .234 | .278 | .049 | -.098 | .084 | -.175 | .049 | .165 | -.229 | -.23 | .028 | .079 |
| JS1 | .28 | .139 | -.267 | .454 | .784 | .426 | .582 | .195 | .215 | .086 | -.278 | .126 | .273 | -.547 | -.224 | -.128 | .337 |
| JS2 | .338 | .334 | -.321 | .312 | .816 | .377 | .549 | .276 | .396 | .27 | -.295 | .46 | .24 | -.41 | -.32 | -.376 | .504 |
| JS3_V | .279 | .275 | -.342 | .226 | .696 | .401 | .497 | .314 | .269 | .118 | -.344 | .264 | .264 | -.566 | -.259 | -.241 | .341 |
| JS4 | .575 | .488 | -.522 | .275 | .841 | .579 | .646 | .444 | .46 | .423 | -.387 | .414 | .389 | -.591 | -.427 | -.514 | .556 |
| LEA1 | .392 | .226 | -.428 | .418 | .56 | .839 | .532 | .401 | .184 | .176 | -.391 | .214 | .303 | -.382 | -.359 | -.424 | .424 |
| LEA2 | .364 | .14 | -.414 | .352 | .437 | .87 | .475 | .323 | .139 | .182 | -.302 | .154 | .234 | -.269 | -.338 | -.243 | .426 |
| LEA3 | .382 | .239 | -.383 | .252 | .525 | .884 | .497 | .435 | .249 | .147 | -.344 | .087 | .184 | -.354 | -.366 | -.253 | .524 |
| LEA4_V | .421 | .128 | -.501 | .232 | .425 | .826 | .458 | .295 | .18 | .101 | -.359 | .108 | .223 | -.394 | -.405 | -.204 | .299 |
| OC1 | .445 | .219 | -.38 | .441 | .719 | .507 | .814 | .317 | .245 | .248 | -.298 | .288 | .318 | -.632 | -.337 | -.293 | .447 |
| OC2_V | .383 | .234 | -.414 | .156 | .347 | .451 | .578 | .329 | .138 | .281 | -.382 | .229 | .309 | -.399 | -.406 | -.315 | .35 |
| OC3 | .257 | .023 | -.135 | .367 | .349 | .32 | .602 | .124 | .058 | .099 | -.115 | .069 | .211 | -.288 | -.08 | -.121 | .287 |
| OC4 | .437 | .35 | -.263 | .209 | .533 | .34 | .809 | .364 | .315 | .254 | -.23 | .26 | .24 | -.448 | -.345 | -.273 | .451 |

**Table D.1: Continued**

| | ABS | DT | WFC | JP | JS | LEA | OC | PS | PO | RA | RC | ROU | TW | TUI | WL | WS | WE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OC5 | .535 | .334 | -.411 | .267 | .612 | .475 | .83 | .301 | .3 | .248 | -.229 | .249 | .179 | -.512 | -.378 | -.335 | .417 |
| PO1_V | .138 | .406 | -.147 | -.097 | .269 | .015 | .075 | .236 | .712 | .237 | -.122 | .253 | .106 | -.323 | -.126 | -.225 | .153 |
| PO2 | .428 | .684 | -.326 | .051 | .424 | .275 | .369 | .378 | .92 | .56 | -.224 | .395 | .285 | -.387 | -.243 | -.353 | .379 |
| PO3 | .359 | .728 | -.279 | -.066 | .39 | .202 | .257 | .436 | .926 | .51 | -.191 | .399 | .208 | -.35 | -.203 | -.355 | .36 |
| Pay2 | .336 | .353 | -.269 | .182 | .368 | .437 | .298 | .813 | .24 | .298 | -.319 | .258 | .266 | -.313 | -.244 | -.293 | .364 |
| Pay3 | .274 | .538 | -.193 | -.017 | .204 | .22 | .294 | .738 | .494 | .312 | -.144 | .317 | .144 | -.285 | -.181 | -.327 | .289 |
| RA1 | .326 | .615 | -.235 | .076 | .276 | .11 | .273 | .33 | .475 | .91 | -.292 | .417 | .288 | -.327 | -.185 | -.31 | .304 |
| RA2 | .434 | .596 | -.303 | .125 | .264 | .213 | .297 | .335 | .51 | .914 | -.296 | .406 | .304 | -.272 | -.285 | -.298 | .329 |
| RC1 | -.311 | -.11 | .288 | -.218 | -.269 | -.205 | -.15 | -.075 | -.221 | -.31 | .686 | -.002 | -.2 | .181 | .29 | .209 | -.222 |
| RC2 | -.3 | -.156 | .322 | -.131 | -.404 | -.403 | -.308 | -.301 | -.177 | -.216 | .871 | -.097 | -.205 | .326 | .285 | .267 | -.355 |
| RC3 | -.391 | -.196 | .402 | -.241 | -.337 | -.365 | -.349 | -.35 | -.16 | -.297 | .884 | -.068 | -.279 | .347 | .389 | .282 | -.443 |
| ROU1 | .34 | .604 | -.24 | .013 | .374 | .212 | .26 | .38 | .442 | .514 | -.133 | .904 | .373 | -.315 | -.225 | -.532 | .435 |
| ROU2_V | .268 | .469 | -.239 | .092 | .362 | .093 | .306 | .274 | .319 | .31 | -.009 | .912 | .15 | -.321 | -.193 | -.408 | .251 |
| TUI1 | -.403 | -.377 | .407 | -.268 | -.58 | -.371 | -.531 | -.367 | -.338 | -.343 | .387 | -.246 | -.245 | .871 | .31 | .332 | -.349 |
| TUI2 | -.357 | -.323 | .382 | -.237 | -.522 | -.294 | -.488 | -.324 | -.334 | -.239 | .266 | -.226 | -.152 | .854 | .28 | .219 | -.239 |
| TUI3 | -.519 | -.407 | .508 | -.153 | -.639 | -.365 | -.591 | -.343 | -.432 | -.288 | .302 | -.365 | -.267 | .875 | .402 | .433 | -.406 |
| TUI4 | -.523 | -.291 | .497 | -.273 | -.602 | -.407 | -.572 | -.32 | -.296 | -.227 | .367 | -.287 | -.252 | .872 | .32 | .301 | -.352 |
| TUI5 | -.538 | -.39 | .533 | -.201 | -.549 | -.33 | -.573 | -.378 | -.353 | -.314 | .231 | -.362 | -.295 | .832 | .486 | .403 | -.323 |
| TW1 | .179 | .154 | -.206 | .28 | .384 | .305 | .374 | .241 | .199 | .263 | -.267 | .235 | .942 | -.267 | -.234 | -.344 | .303 |
| TW2 | .254 | .335 | -.212 | .143 | .275 | .169 | .204 | .26 | .272 | .344 | -.229 | .296 | .85 | -.244 | -.252 | -.256 | .352 |
| WE1 | .266 | .352 | -.125 | .081 | .405 | .367 | .404 | .321 | .193 | .208 | -.337 | .27 | .314 | -.259 | -.204 | -.243 | .861 |
| WE2 | .516 | .518 | -.327 | .196 | .574 | .499 | .544 | .463 | .436 | .389 | -.422 | .388 | .324 | -.422 | -.433 | -.434 | .93 |
| WL1 | -.459 | -.185 | .62 | -.2 | -.268 | -.304 | -.334 | -.215 | -.118 | -.216 | .267 | -.15 | -.159 | .338 | .819 | .325 | -.22 |
| WL2 | -.511 | -.153 | .683 | -.272 | -.297 | -.402 | -.35 | -.122 | -.095 | -.167 | .356 | -.091 | -.24 | .338 | .84 | .208 | -.268 |
| WL3 | -.45 | -.323 | .611 | -.156 | -.41 | -.368 | -.395 | -.227 | -.332 | -.256 | .35 | -.306 | -.257 | .378 | .849 | .5 | -.42 |
| WS1 | -.23 | -.301 | .324 | -.007 | -.186 | -.159 | -.243 | -.094 | -.198 | -.198 | .168 | -.353 | -.162 | .255 | .43 | .714 | -.223 |
| WS2 | -.34 | -.465 | .314 | -.098 | -.429 | -.319 | -.41 | -.427 | -.431 | -.369 | .277 | -.507 | -.362 | .393 | .277 | .892 | -.395 |
| WS3 | -.393 | -.319 | .414 | -.044 | -.303 | -.297 | -.176 | -.228 | -.176 | -.171 | .29 | -.332 | -.237 | .269 | .395 | .775 | -.278 |
| Pay1 | .343 | .464 | -.16 | .036 | .375 | .371 | .381 | .897 | .346 | .298 | -.295 | .317 | .246 | -.381 | -.143 | -.274 | .428 |

## D.2 Factor loading and indicator reliability measure

**Table D.2:** Factor loading and indicator reliability measure

| Variables | Indicators | Factor Loadings | Indicator Reliability |
|---|---|---|---|
| Absenteeism | ABS1 | .830 | .689 |
| | ABS2 | .849 | .721 |
| | ABS3 | .808 | .653 |
| Developing or Training | DT1 | .953 | .908 |
| | DT2 | .816 | .666 |
| Work-family Conflict | WFC1 | .926 | .857 |
| | WFC2 | .930 | .865 |
| | WFC3 | .870 | .757 |
| Job Performance | JP1 | .838 | .702 |
| | JP2 | .777 | .604 |
| | JP3 | .844 | .712 |
| | JP4 | .831 | .691 |
| Job Satisfaction | JS1 | .784 | .615 |
| | JS2 | .815 | .664 |
| | JS3_V | .697 | .486 |
| | JS4 | .841 | .707 |
| Leadership | LEA1 | .839 | .704 |
| | LEA2 | .870 | .757 |
| | LEA3 | .884 | .781 |
| | LEA4_V | .826 | .682 |
| Organizational Commitment | OC1 | .814 | .663 |
| | OC2_V | .578 | .334 |
| | OC3 | .602 | .362 |
| | OC4 | .809 | .654 |
| | OC5 | .830 | .689 |
| Promotion Opportunity | PO1_V | .712 | .507 |
| | PO2 | .920 | .846 |
| | PO3 | .926 | .857 |
| Pay | Pay1 | .897 | .805 |
| | Pay2 | .813 | .661 |
| | Pay3 | .738 | .545 |
| Role Ambiguity | RA1 | .910 | .828 |
| | RA2 | .914 | .835 |
| Role Conflict | RC1 | .686 | .471 |
| | RC2 | .871 | .759 |
| | RC3 | .884 | .781 |
| Routinization | ROU1 | .904 | .817 |
| | ROU2_V | .912 | .832 |

**Table D.2: Continued**

| Variables | Indicators | Factor Loadings | Indicator Reliability |
|---|---|---|---|
| Turnover Intention | TUI1 | .871 | .759 |
| | TUI2 | .854 | .729 |
| | TUI3 | .875 | .766 |
| | TUI4 | .872 | .760 |
| | TUI5 | .832 | .692 |
| Team-worker | TW1 | .942 | .887 |
| | TW2 | .850 | .723 |
| Working Environment | WE1 | .861 | .741 |
| | WE2 | .930 | .865 |
| Workload | WL1 | .819 | .671 |
| | WL2 | .840 | .706 |
| | WL3 | .849 | .721 |
| Work Stress | WS1 | .714 | .510 |
| | WS2 | .892 | .796 |
| | WS3 | .775 | .601 |
| Termination Intention | TEI1 | .895 | .786 |
| | TEI2 | .882 | .790 |
| | TEI3 | .852 | .699 |

# VITA

Yuting Li was born in a small village in Yancheng, Jiangsu Province, China on September 15, 1983. He received his bachelor's degree in Material Science from Yancheng Institute of Technology in July 2005. He continued his graduate study in Chemistry and Chemical Engineering at Shenzhen University and obtained M.S. in June 2009. In August of 2011, he entered the University of Tennessee, Knoxville in Materials Science and Engineering department and received his master's degree in August of 2013. Then he joined the Department of Industrial and Systems Engineering at the University of Tennessee, Knoxville to begin his Ph.D. in January 2014. He served as a Graduate Teaching Assistant and Graduate Research Assistant in the department during his tenure as a Ph.D. candidate and completed his Ph.D. in May 2019.