ANTECEDENTS OF JOB ENGAGEMENT: THE MEDIATING ROLE OF PSYCHOLOGICAL STATES

by

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(Under the Direction of Wendy E. A. Ruona)

ABSTRACT

The purpose of this study was to examine the factors that influence job engagement, with a specific focus on the roles of psychological conditions that promote job engagement. This study aimed to contribute to the knowledgebase about how to foster job engagement based on a rigorous framework consisting of Kahn's (1990) theory of engagement and relevant motivational theories using a sample of 486 employees recruited via Amazon Mechanical Turk working in for-profit organizations in the United States.

The results of structural equation modeling revealed that financial rewards had a weak, positive relationship with job engagement (research question 1). Job autonomy and financial rewards were shown to have positive relationships with psychological meaningfulness, while learning culture and procedural justice were found to have positive relationships with psychological safety (research question 2). The results also showed that psychological meaningfulness strongly predicted job engagement (research question 3). In addition, psychological meaningfulness was found to mediate the relationships between job autonomy and job engagement and between financial rewards and job engagement (research question 4).

This study offers three distinct contributions. First, Kahn's (1990) theory of engagement at work has been further empirically supported, further evidencing the mediating role of psychological meaningfulness in the relationships between job elements and job engagement and evidencing the effects of job elements on psychological meaningfulness and the effect of work context on psychological safety. Second, psychological meaningfulness substantially predicted job engagement. Lastly, the findings indicate that the effects of rewards may depend more on how strongly they satisfy psychological needs rather than whether the rewards are intrinsic or extrinsic. Implications for theory, future research, and practice are discussed.

INDEX WORDS: Engagement, Antecedents of engagement, Predictors of engagement, Human resource development, Organization development, Work motivation

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DEDICATION

To God who loves me and gives me purpose

And we know that in all things God works for the good of those who love him, who have been called according to his purpose. (Roman 8:28)

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TABLE OF CONTENTS

Page

ACKNOWLEDGEMENTS v

LIST OF TABLES xi

LIST OF FIGURES xii

CHAPTER

1 INTRODUCTION 1

Challenges with Conceptualizations of Engagement 3

Challenges of Understanding Antecedents of Engagement in the Literature 5

The Framework for This Study: Exploring the Antecedents of Engagement 6

Statement of the Problem 9

Purpose of the Study 10

Significance of the Study 10

2 REVIEW OF THE LITERATURE 12

Conceptualizations of Engagement at Work 12

Foundations of Engagement at Work 31

Empirical Work on Antecedents of Engagement at Work 39

Guiding Framework for This Study 64

Development of Hypotheses for This Study 76

3 METHODOLOGY 92

Measurement Model 92

Instrumentation 95

Target Population and Sample 110

Data Collection 111

Data Preparation and Screening 116

Data Analyses 119

Delimitations of the Study 127

4 RESEARCH FINDINGS 128

Descriptive Analysis 128

Measurement Modeling 130

Structural Equation Modeling: Hypotheses Testing 134

Model Modification: Exploration of Parsimonious Models 139

Summary of the Results 144

5 SUMMARY, CONCLUSIONS, AND IMPLICATIONS 146

Summary of the Findings 146

Conclusions 147

Implications for Theory and Research 163

Implications for Practice 169

Limitations and Recommendations for Future Research 172

REFERENCES 175

APPENDICES

A THE INSTRUMENT USED IN THIS STUDY 209

B TALLY CHARTS: RESULTS OF THE SORT ACTIVITY 212

C SURVEY CRITIQUE SHEET 220

D THE INSTRUMENT USED IN THE PILOT STUDY 231

E RESULTS OF THE PILOT STUDY 238

F FINAL SURVEY INSTRUMENT 243

G DOCUMENT FOR PARTICIPANT RECRUITMENT 249

H CONSENT INFORMATION 251

I SUMMARY OF EMPIRICAL STUDIES DISCUSSED IN CHAPTER FIVE 254

LIST OF TABLES

Page

Table 2.1: Definitions of Engagement at Work 20

Table 2.2: Research Based on Kahn's Theory of Engagement 44

Table 2.3: Research Based on the Job Demands and Resources Model 48

Table 2.4: Research Based on Social Exchange Theory 51

Table 3.1: Multifaceted Survey Instrument Crafting Process 96

Table 3.2: Measures Adopted for This Study 98

Table 3.3: Results of Item Revisions through Instrumentation 109

Table 3.4: Demographic Information of the Sample 112

Table 4.1: Descriptive Statistics and Bivariate correlations 129

Table 4.2: Preliminary Hypotheses Testing: Results of Bivariate Correlation Analysis 129

Table 4.3: Fit Indices for the Measurement Model: Confirmatory Factor Analysis (n=486) 132

Table 4.4: Standardized Factor Loadings of the Items onto Corresponding Constructs 133

Table 4.5: Overall Fit of the Model 135

Table 4.6: Estimates of Standardized Path Coefficients 137

Table 4.7: Bootstrap Estimates of the Mediation Effects in the Proposed Model 139

Table 4.8: Fit Indices for the Alternative Models 141

Table 4.9: Comparison of the Regression Estimates: Model 1 and Model 2 143

Table 4.10: Summary of the Hypotheses Testing 144

LIST OF FIGURES

Page

Figure 1.1: Theoretical Framework of the Study.....9

Figure 2.1: Theoretical Model of Porter and Lawler's (1968) Study 73

Figure 3.1: Measurement Model of the Study 93

Figure 4.1: Results of Hypothesis Testing Using the Hypothesized Model.....137

Figure 4.2: Alternative Model (Full-mediation Effects) of Antecedents of Job Engagement.....143

Figure 5.1: The Relationships Between the Variables: The Results of the SEM Analysis 147

Figure 5.2: Guiding Framework of This Study.....165

Figure 5.3: The Environmental Factors Tested in this Study 168

CHAPTER 1

INTRODUCTION

"Companies with engaged employees outperform those without by up to 202%" (Dale Carnegie Training, 2014). Many studies conducted by consulting firms (e.g., Aon Hewitt, 2010; Gallup, 2013; SHRM, 2007) found that the level of employees' engagement in organizations is strongly related to organizational productivity and performance. The results of the research published in academic literature are consistent with those in practitioners' literature. For example, through a meta-analysis, Christian, Garza, and Slaughter (2011) revealed that employees' work engagement has a positive correlation with task performance. Rich, Lepine, and Crawford (2010) also showed the positive relationships between job engagement and task performance. In addition to organizational productivity, from the perspective of a healthy organization, which assumes that superior work efficiency and performance are led by employees' physical, mental, and social well-being (Wilson, Dejoy, Vandenberg, Richardson, & McGrath, 2004), engagement in work is viewed as an important factor for building a healthy organization (Jaimez & Bretones, 2011). This evidence clearly supports the argument that increasing levels of employees' engagement are critically important for an organization's success through people.

Despite the positive effect of engagement at work on performance and employee well-being, in organizations around the world, engagement levels are alarmingly low and stagnant for the past five years. According to Gallup's World Poll conducted at 160 countries in 2016, only 15% of full-time employees were engaged at work (Clifton, 2017), while 85% were not engaged.

Comparing these findings to those of the Gallup's State of the Global Workplace 2010 report, which showed that only 11% of employees were engaged in 2009 and 2010, engagement levels have not increased significantly. In a survey conducted by the Deloitte consulting firm, 79% of the participants of the survey (i.e., 2,000 out of 2,532 human resource leaders in 94 countries) responded that they have significant or urgent problems with employees' engagement and retention (Schwartz, Bersin, & Pelster, 2014). To address the issue of the low engagement level, organizations are increasingly working on enhancing employees' engagement levels by implementing various interventions, such as career development, continuing education, value alignment, pay raises, recognition, and performance reviews (Aon Hewitt, 2010; SHRM Foundation, 2012), investing a great deal of financial resources (Graber, 2015).

However, many engagement interventions implemented in organizations are not perceived as being successful. The following patterns are emphasized as causes of failure of engagement interventions. In many cases, interventions are designed without a clear understanding of what engagement at work is and what drives it (Gorey, 2014). In addition, organizations do not consider organizational contexts (e.g., an organizational culture, process, and structure), which affect the implementation of engagement programs (Murphy, 2014). Moreover, many organizations include interventions fostering extrinsic motivation without considering intrinsic motivation (Shirar, 2014). Because of the ineffectiveness of interventions implemented for engagement, they have not significantly increased employees' engagement levels.

In fact, there is a lack of evidence on drivers of engagement provided to practice. Researchers do not have a clear understanding about what interventions are more effective and how interventions work in organizational contexts. Although the concept of engagement at work

was introduced by Kahn in 1990, the literature on engagement is still in its early stages. Despite the popularity of engagement in literature, a small number of empirical studies have been conducted (Kim, Kolb, & Kim, 2013; Saks & Gruman, 2014; Shuck & Wollard, 2010; Van De Voorde, Van Veldhoven, & Veld, 2016). Furthermore, the lack of clear and consistent conceptualizations of engagement aligned with rigorous theoretical frameworks is pointed out as a serious gap in the literature (Shuck, 2013; Shuck & Wollard, 2010). Thus, to advance the engagement literature and to deal with engagement issues in practice, more research needs to investigate what and how factors lead to engagement at work based on a clear conceptualization and relevant and strong theoretical framework.

Challenges with Conceptualizations of Engagement

Although several studies conducted by consulting firms, such as Gallup, SHRM, and Towers Perrin, drew organizations' attention to employees' engagement, the terms used in their studies were not clearly defined (Macey & Schneider, 2008; Shuck & Wollard, 2010). For instance, Harter, Schmidt, and Hayes (2002), whose study was based on previous Gallup research, defined engagement as "an individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269). This definition, which compounds engagement with job satisfaction and involvement, led to the arguments of engagement as "old wine in a new bottle" (Saks, 2006, p. 601). For this reason, there have been disputes about the uniqueness and added usability of engagement in the scholarly literature (Christian, Garza, & Slaughter, 2011; Macey & Schneider, 2008; Shuck & Wollard, 2010; Shuck, Ghosh, Zigarmi, & Nimon, 2013).

Despite such confusion about the concept, engagement at work has been evolving based on researchers' efforts to differentiate it from other related constructs, such as job satisfaction, job involvement, and organizational commitment. For example, proposing nomological networks

among job involvement, job satisfaction, and organizational commitment, Shuck et al. (2013) argued that these constructs share some overlaps to some extent and, at the same time, are discriminant from one another. Furthermore, Shuck, Nimon, and Zigarmi (2017) empirically demonstrated nomological network of engagement with job attitudes by showing variance that engagement and job attitudinal variables shared. Christian et al. (2011) also provided evidence that engagement is distinct from job involvement, job satisfaction, and organizational commitment.

Most empirical studies have generally drawn from two major conceptualizations–Kahn's (1990) and Maslach, Schaufeli, and Leiter's (2001). Kahn (1990), who is a pioneer of the engagement construct, defined *personal engagement at work* as "the simultaneous employment and expression of a person's preferred self in task behaviors that promote connections to work and to others, personal presence, and active, full role performances" (p. 700). According to Kahn, this concept includes cognitive, emotional, and physical engagement. In contrast, Maslach et al. (2001) identified *job engagement* as the antithesis of job burnout and perceived job engagement as the psychological states of energy, involvement, and efficacy.

This study adopts Kahn's (1990) conceptualization because this concept more comprehensively explains the phenomenon of engagement by taking a holistic approach to self-in-role (i.e., cognitive, emotional, and physical aspects of role performance). Kahn's conceptualization can help us understand why engagement is distinguished from other related constructs, which represent fragmented aspects of self-in-role (Kahn, 1992). More specifically, for operationalizing Kahn's conceptualization, this study uses Rich et al.'s (2010) multidimensional construct of job engagement that is composed of cognitive, emotional, and behavioral engagement, drawn from Kahn's concept, because the contemporary construct

emphasizes the simultaneous self-expression in task behaviors at work. Thus, this study defines engagement as "the simultaneous investment of an individual's physical, cognitive, and emotional energy in active, full work performance" (Rich et al., 2010, p. 619), employing the term *job engagement* of various terms representing engagement.

Challenges of Understanding Antecedents of Engagement in the Literature

The number of published studies on engagement has increased over the past decade (Saks & Gruman, 2014), and research has demonstrated several predictors of engagement (discussed in detail in Chapter 2), including job resources (Crawford, Lepine, & Rich, 2010; Schaufeli & Bakker, 2004), coworker support (Andrew & Sofian, 2012; Shuck, Rocco, & Albornoz, 2011), support from leaders (Lee & Ok, 2015; May et al., 2004; Sarti, 2014), opportunities for learning (Sarti, 2014; Shuck, Rocco, & Albornoz, 2011), HRM practices (Alfes, Truss, Soane, Rees, & Gatenby, 2013; Van De Voorde, Veldhoven, & Veld, 2016), and core self-evaluations (Lee & Ok, 2015; Rich et al., 2010). Nonetheless, the following challenges in the extant literature need to be addressed. First, the role of psychological conditions in the development of engagement must be tested. Based on needs theories of motivation (Alderfer, 1972; Maslow, 1970) and the job characteristics model (Hackman & Oldham, 1980), Kahn's (1990) work emphasized the mediating role of psychological states in the relationships between organizational interventions and engagement. The role of psychological states is considered as a critical aspect of Kahn's framework, as Saks and Gruman (2014) pointed out that "Kahn's (1990) theory is more convincing as it specifies the psychological conditions that lead to engagement as well as the factors that influence each of the psychological conditions" (p. 163). However, very little research has examined the effects of psychological states, and thus, Kahn's theory of

engagement has not been tested thoroughly enough to provide rich knowledge on how to foster engagement.

In addition, even though Kahn (1990) showed the relationships among environmental and personal factors, psychological conditions, and engagement, more theories need to be integrated with Kahn's theory to better understand antecedents of engagement. More specifically, the factors Kahn suggested need to be translated into specific variables because they are still too vague to investigate their effects on engagement. Research also needs to examine the effects of various organizational interventions for job engagement, which were not shown in Kahn's study. To do this, research drawn from Kahn's theory (e.g., Alfes et al., 2013; Shuck et al., 2011; Shuck, Twyford, Reio, & Shuck, 2014), in general, combined Kahn's framework with or was grounded in other theories, such as Maslow's needs theory (1970) or social exchange theory, to build hypotheses and a measurement framework. This implies that Kahn's framework may have limitations in terms of providing in-depth knowledge of antecedents of engagement, and research needs to employ stronger, foundational theories as a guiding framework (Meyer & Gagné, 2008; Saks, 2006). Notwithstanding, many studies focused only on testing the direct effects of environmental factors on engagement by choosing several factors from Kahn's (1990) study rather than developing hypotheses by establishing a rigorous theoretical framework.

The Framework for This Study: Exploring the Antecedents of Engagement

Thus, this study attempts to address the gaps in the literature by grounding Kahn's (1990) theory in motivation theories. Motivation theories can be relevant theories to inform studies of antecedents of engagement, because engagement at work has been considered as a motivational concept. Although many researchers (e.g., Christian et al., 2011; Kim et al., 2013; Rich et al., 2010; Schaufeli & Bakker, 2004; Shuck et al., 2013) view engagement as a motivational concept,

there is little engagement research that used motivation theories explicitly as its guiding framework.

Motivation Theories Guiding the Present Study

This study combines Maslow's (1970) hierarchy of needs, Deci's (1971) intrinsic motivation, and Porter and Lawler's (1968) expectancy theory of motivation as a guiding framework. These theories can specifically explain how to initiate and increase job engagement by facilitating needs satisfaction and utilizing rewards. The motivational theories are briefly described in this section, but a detailed review is provided in Chapter 2.

Maslow's (1943, 1970) hierarchy of needs is a representative motivational theory undergirding Kahn's work (Shuck et al., 2011). Asserting the importance of human basic needs satisfaction, Maslow argued that human needs are hierarchical; higher-order needs (i.e., affiliation, esteem, and self-actualization) can be motives once lower-order needs (i.e., physiological needs and safety) are met. Maslow's need theory implies that organizations need to satisfy the needs of employees as human beings to initiate and sustain their action. Maslow's theory helps to understand the kinds of needs that must be satisfied at work in order to develop job engagement.

Deci's (1971) intrinsic motivation emphasizes the sustainability of intrinsic motivation and addresses why and how behaviors are aroused and maintained by internal rewards based on theories of human needs satisfaction. In contrast, Porter and Lawler's (1968) expectancy theory of motivation claims that intrinsic and extrinsic motivation needs to be considered together because human motivation is the sum of both types of motivation. The assumption of this study is consistent with Porter and Lawler's approach; considering the reality of organizations, extrinsic motivation should also be discussed to promote employee motivation effectively. Thus,

this study includes the mechanisms of both intrinsic and extrinsic motivation in its research model. While Deci's (1971) argument partly conflicts with Porter and Lawler's (1968) perspective, Deci's (1971) theory is useful for this study, because Deci specifically addresses what motivates a person and how a person is motivated in various contexts.

Environmental Factors: Job Elements and Work Context

This study categorizes the environmental factors to examine into job elements and work context. Motivational research (e.g., Ferris & Gilmore, 1984; Shalley, Gilson, & Blum, 2009) indicated that the roles of job elements and work context were distinguished. Thus, to better understand motivators at work, the effects of job elements and work context on motivational constructs need to be tested together (Ferris & Gilmore, 1984). The distinct roles of job elements and work context were also found in Kahn's (1990) study on engagement: the influencing factors of job elements were identified as the drivers of psychological meaningfulness, while those related to work context were shown to be the antecedents of psychological safety. Thus, this study divides drivers of engagement into job elements and work context and includes, on the basis of the guiding framework of this study, both intrinsic and extrinsic motivators in each category to examine the effects of antecedents on engagement.

Role of Psychological States in the Facilitation of Engagement

Motivational theories employed in the present study consider psychological states as important factors of human motivation. Maslow's (1943; 1970) theory relates to lower- and higher-order needs satisfaction, and Deci's (1971) theory addresses the psychological experiences of self-determination and competence. Porter and Lawler's (1968) theory is based on the cognitive evaluations of performance and outcomes resulting from the performance. In a similar vein, according to Kahn (1990), the important premise under engagement at work is that

people engage or disengage depending on their psychological experiences of self-in-role. Therefore, this study investigates the role of the psychological states, suggested by Kahn (1990), in the relationships between organizational interventions and engagement (Figure 1.1).

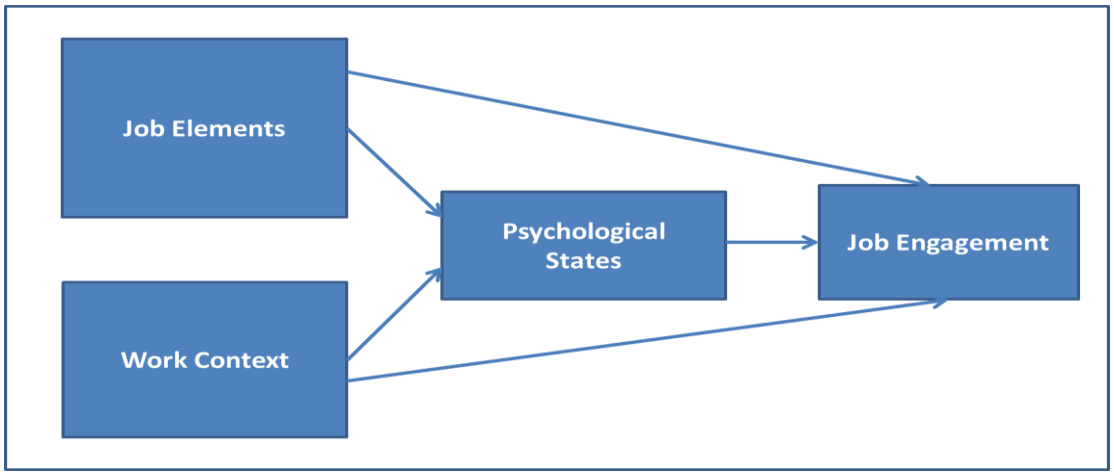


Figure 1.1. *Theoretical Framework of the Study*

Statement of the Problem

Organizations with highly engaged employees show increases in productivity and profits (Christian et al., 2011; Harter et al., 2002; Menguc, Auh, Fisher, & Haddad, 2013). Also, employees' engagement level is perceived to be one of the important indicators of a healthy organization (Jaimez & Bretones, 2011). Despite the importance of engagement at work, less than 20% of employees, globally, are actually engaged in their work (Clifton, 2017). Thus, we need to more clearly understand what conditions are necessary to enhance engagement at work.

What is engagement and how can we foster it in organizations? Providing rich knowledge about this question is critical, but the research literature on engagement is still in its infancy since the concept of personal engagement at work was coined by Kahn (1990). To be specific, research needs to use a clear and consistent conceptualization of engagement and a strong theoretical framework in order to expand the knowledge-base of engagement. Moreover, the role of psychological states in the development of engagement must be examined to advance Kahn's

theory of engagement. Therefore, this study adopts Kahn's (1990) conceptualization and employs Rich et al.'s (2010) multidimensional construct of job engagement to operationalize Kahn's conceptualization. This study attempts to build a theoretical framework by combining relevant and representative motivational theories (i.e., Deci, 1971; Maslow, 1970; Porter & Lawler, 1968) to better understand drivers of engagement.

Purpose of the Study

The purpose of this study is to examine the influencing factors of job engagement, with a specific focus on the roles of psychological conditions in promoting job engagement. In order to accomplish this purpose, the following research questions are proposed:

1. To what extent do the job elements and work context predict job engagement?
2. To what extent do the job elements and work context predict psychological states?
3. To what extent do psychological states predict job engagement?
4. To what extent do the psychological states mediate the relationships between job elements and job engagement and between work context and job engagement?

Significance of the Study

An increase in employees' engagement levels is a critical issue that needs to be addressed to retain employees, achieve organizational goals, and promote employees' well-being. In spite of the popularity of engagement at work in research and practice, however, engagement is a relatively new construct compared to other motivational concepts. The conceptualization of engagement was just introduced in 1990, and there is a lack of knowledge about this construct (Kim et al., 2013; Saks & Gruman, 2014; Shuck & Wollard, 2010). Accordingly, understanding the phenomenon of engagement and developing in-depth knowledge of how to foster engagement can contribute to knowledge expansion for HRD research and practice.

This study expands the literature on engagement as it more precisely measures Kahn's original conceptualization of personal engagement at work using a contemporary instrument of job engagement. By doing so, this study can help researchers in both academic fields and practice to more clearly understand the construct of engagement and connect the construct to research on engagement antecedents. Also, this study can advance the knowledge base by grounding job engagement in a rigorous theoretical framework, congruent with the conceptualization adopted. This theoretical framework explains what, how, and why certain factors influence engagement. Moreover, this study examines the role of psychological conditions in the relationships between organizational interventions and job engagement, which is missing in the literature. Finally, by considering both extrinsic and intrinsic motivators and by including both job elements and work context, this study takes a more balanced and integrative approach to job engagement.

This study makes significant contributions to the HRD practice by providing evidence on what interventions can be used and how organizations can effectively implement interventions to enhance the level of job engagement. Organizational interventions to promote engagement can be more successful when they are designed and implemented based on clear understanding of what engagement is and how engagement develops. Additionally, by taking job-related interventions and organizational context together and by considering intrinsic motivators as well as extrinsic motivators, organizations can explore more comprehensive ways for engagement interventions.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter aims to explore gaps in the literature on engagement at work and provide rationales pertinent to the research questions postulated in Chapter 1. To do this, in this chapter, previous theoretical and conceptual work and empirical studies are summarized, synthesized, and critiqued. This chapter consists of five major sections. The first section is conceptualizations of engagement. In the second section, foundations of engagement are addressed. The third section reviews empirical work on antecedents of engagement. The fourth section describes a guiding framework for this study. In the last section, hypotheses addressing the research questions of the present study are developed in terms of the relationships between possible influencing factors and job engagement based on a review of the literature.

Conceptualizations of Engagement at Work

The term, engagement at work, has been used with various meanings in different ways. Although the construct of engagement at work was introduced to the academic community by Kahn in 1990, empirical studies on engagement were not conducted until the early 2000s. Before researchers became interested in engagement, practitioners in consulting firms (e.g., Gallup, SHRM, and Towers Perrin) conducted studies on employee engagement (Shuck & Wollard, 2010). However, such studies caused confusion about employees' engagement, because they used the meaning of employee engagement compounded with job satisfaction and involvement (Macey & Schneider, 2008; Shuck & Wollard, 2010). For this reason, there have been disputes about the uniqueness and the added usability of engagement in the academic community

(Christian, Garza, & Slaughter, 2011; Macey & Schneider, 2008). Thus, it is important for researchers to identify the definitions of engagement as the first step to conduct research. This section reviews the definitions of engagement derived from early and contemporary conceptualizations of engagement at work in scholarly literature. When reviewing the definitions, the terms used in the foundational studies are be described along with the respective researchers.

Definitions Derived from Early Conceptualizations

Three representative definitions of engagement emerged in the 1990s and early 2000s. Two major definitions (i.e., Kahn, 1990; and Maslach, Schaufeli, & Leiter, 2001) have been utilized in the academic literature, whereas the other definition (i.e., Harter, Schmidt, & Hayes, 2002) has mostly been used in the reports and articles of practitioner journals (e.g., Corporate Leadership Council, 2004; Towers Perrin, 2003; 2007) (Shuck & Wollard, 2010).

In scholarly literature, Kahn (1990), a pioneer in the study of engagement at work, defined *personal engagement* as "the simultaneous employment and expression of a person's preferred self in task behaviors that promote connections to work and to others, personal presence, and active, full role performances" (p. 700). According to Kahn (1990), engaged people become cognitively vigilant and use their knowledge and skills for task performance (cognitive engagement), and they feel empathy toward others around them at work and become energetic (emotional engagement). Also, engaged people are physically involved in their work (physical engagement). Kahn assumed that personal engagement and disengagement are momentary rather than static, because people invest their whole selves into task behaviors as responses to the ebbs and flows of their day-to-day work. Kahn argued that the dynamic feature

of personal engagement differentiates the concept itself from other constructs of organizational behavior, which connote an employee's generalized state maintaining average levels over time.

Another definition of engagement has materialized in the academic literature on job burnout. Maslach, Schaufeli, and Leiter (2001) defined job burnout as "a prolonged response to chronic emotional and interpersonal stressors on the job" (p. 405). According to the researchers, the construct of job burnout consisted of exhaustion, cynicism, and inefficacy. Maslach et al. (2001) identified *job engagement* as the antithesis of job burnout. In this vein, *burnout* was identified as "an erosion of engagement" (Maslach & Leiter, 1997, p. 24), and job engagement was composed of energy (instead of exhaustion), involvement (rather than cynicism), and efficacy (as opposed to ineffectiveness) (Maslach & Leiter, 1997; Maslach et al., 2001).

Lastly, Harter, Schmidt, and Hayes (2002), whose study was based on previous Gallup research, defined *employee engagement* as "an individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269). Although Harter et al.'s definition facilitated a great deal of interest of practitioners in employee engagement by linking engagement to organizational profits (Shuck & Wollard, 2010), the definition contributed to the confusion about the concept of engagement and led to the argument about engagement as "old wine in a new bottle" (Saks, 2006, p. 601).

Definitions Derived from Contemporary Conceptualizations

Contemporary conceptualizations of engagement drew from the early conceptualizations. To address the confusion, as described in the previous section, regarding what engagement is, researchers attempted to differentiate engagement from other similar constructs.

Building from the burnout literature, Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) examined the dimensions of *job engagement* and burnout through confirmatory factor

analysis. Schaufeli et al. critiqued Kahn's (1992) concept of engagement as not providing an operationalized construct, despite the comprehensiveness of psychological presence based on role theory. Schaufeli et al. took a different approach from that of Kahn, which viewed engagement as one's responses to "the momentary ebbs and flows of those days" (Kahn, 1990, p. 693), by defining job engagement as "a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (p. 74).

When it comes to the components of job engagement, Schaufeli et al. (2002) and Schaufeli and Bakker (2004) identified job engagement as a multidimensional construct (i.e., a higher-order structure) that consists of vigor, dedication, and absorption. Vigor relates to high activation, while dedication involves high identification. Absorption means full concentration. As opposed to Maslach and Leiter's (1997) conceptualization of job engagement, Schaufeli et al. argued that job engagement and burnout are independent, negatively related concepts rather than directly opposite ones. Specifically, vigor and dedication are directly opposite of the components of burnout (i.e., exhaustion and cynicism, respectively), whereas absorption is independent of reduced efficacy that composes burnout. This means that a person who currently experiences burnout can also sometimes have an engaged moment.

Saks (2006) raised an issue that many studies in practitioners' journals defined employee engagement based on practice instead of theory and empirical studies. According to Saks, most of the definitions in practice are similar to affective organizational commitment and organizational citizenship behavior. In his research, the first empirical study in the engagement literature, Saks (2006) defined *employee engagement* by combining various definitions in the scholarly literature, which included Kahn (1990, 1992), Rothbard (2001), Maslach et al., (2001), and Schaufeli et al., (2002). To be specific, employee engagement is defined as "a distinct and

unique construct that consists of cognitive, emotional, and behavioral components that are associated with individual role performance" (p. 602). Also, according to Saks, engagement involves the states of attention (i.e., cognitive availability) and absorption (intensity of an employee's focus on a role). In addition, engagement, a persistent affective-cognitive state, is composed of energy, involvement, and efficacy or vigor, dedication, and absorption. However, Saks' composite definition entails an internal contradiction; Kahn conceptualized engagement at work as a momentary psychological state, whereas Schaufeli et al. (2002) perceived the construct to be persistent and pervasive instead of a momentary and persistent state.

Macey and Schneider's (2008) conceptualization of *employee engagement* is so comprehensive that it includes not only psychological states but also traits and behaviors and that it encompasses various work attitudes, such as satisfaction, involvement, commitment, and organizational citizenship behavior. Macey and Schneider argued that the meaning of employee engagement has evolved from the practitioner community and agreed with some practitioners' view that engagement has developed in the literature on work attitudes. According to Macey and Schneider (2008), whether the definitions of engagement are drawn from scholarly literature or practitioners' literature, the definitions have commonalities; those definitions represent employees' desirable state related to organizational purpose and connote "involvement, commitment, passion, enthusiasm, focused effort, and energy" (p. 4).

Based on the common aspects of the definitions of engagement in previous work, Macey and Schneider considered employee engagement as a multidimensional construct containing both attitudinal and behavioral components (i.e., affective state and role performance) instead of a psychological construct, as opposed to Kahn's (1990) conceptualization. Macey and Schneider proposed a framework illustrating the elements of employee engagement; trait engagement as

one's disposition, state engagement, such as feelings of energy and absorption, and behavioral engagement, including extra-role behavior. Trait engagement affects state engagement, and, in turn, state engagement influences behavioral engagement. The propositions formulated by Macey and Schneider propose nomological networks between employee engagement and other traditional constructs of job attitudes; they perceived those job attitudes to be the facets of engagement. Macey and Schneider claimed that this framework would provide researchers and practitioners with clearer understanding of the concept of engagement. However, Saks (2008) critiqued Macey and Schneider' framework that by repackaging various constructs, their concept of engagement leads to jangle fallacy and confuses researchers about the meaning and measurement of engagement. Griffin, Parker, and Neal (2008) also disagreed with Macey and Schneider's perspective that behavioral engagement is one of the dimensions of engagement and that state engagement leads to behavioral engagement. Griffin et al. (2008) argued that because various contextual factors affect the link between state engagement and behavioral engagement, the inclusion of both dimensions in one construct causes confusion. Griffin et al. indicated that by encompassing a variety of behavioral constructs, Macey and Schneider' concept of engagement is likely to be unspecific and overly vague.

Adopting Kahn's (1990) conceptualization of engagement as the framework for their research, Rich, Lepine, and Crawford (2010) considered *job engagement* to be a motivational concept, "the harnessing of an employee's full self in terms of physical, cognitive, and emotional energies to work role performances" (p. 617). Based on this definition, Rich et al. argued that Kahn's conceptualization suggests a relationship between engagement and job performance and more comprehensively explains self-in-role from a holistic approach than other motivational constructs, which account for narrow aspects of employees' selves at work. Based on Kahn's

(1992) notion of engagement, Rich et al. emphasized that engagement can be observed, because it relates to the behavioral investment of cognitive, emotional, and physical energies into one's job performance. Rich et al. also pointed out that engagement involves the simultaneous investment of self into one's role at work rather than the sum of fragmented energies. Therefore, they conceptualized job engagement as a multidimensional, motivational construct consisting of an employee's cognitive, emotional, and physical energies related to his or her work role.

In their seminal review that explored various foundations of the engagement conceptualizations, Shuck and Wollard (2010) claimed that the disjointed approaches are likely to cause misconceptualizations and misinterpretations of engagement. Shuck and Wollard argued that particularly in the field of HRD, consistency in conceptualizing engagement is needed to develop and implement interventions. Through their analysis of the conceptualizations of engagement, Shuck and Wollard argued that a decision about whether or not to be engaged in one's work relates to personal decision-making at a certain point as individuals rather than a group of employees as a whole. This argument is consistent with Kahn (1990), Harter et al. (2002), Saks (2006), and Macey and Schneider (2008). Furthermore, Shuck and Wollard rejected the notion that engagement contains physical properties; instead, they identified *employee engagement* as a psychological state that is manifested behaviorally, as employee engagement is a forward-moving state. By synthesizing these aspects of engagement, Shuck and Wollard (2010) proposed a working definition of employee engagement as: "an individual employee's cognitive, emotional, and behavioral state directed toward desired organizational outcomes" (p. 103). This definition is rooted in Kahn's (1990) conceptualization in that it encompasses an employee's cognitive, emotional, and behavioral states. Also, by clarifying the moving state of engagement

and by linking engagement to organizational outcomes, the conceptualization provides implications for HRD research and practice.

To develop an agreed-upon definition of work engagement, Christian et al. (2011) conducted a meta-analytic study. Christian et al. built their definition of *work engagement* on Kahn's (1990) definition, which was found to be the most commonly used definition in many previous studies. Christian et al. defined work engagement as "a relatively enduring state of mind referring to the simultaneous investment of personal energies in the experience or performance of work" (p.95). More specifically, first, Christian et al.'s definition of engagement connotes a psychological connection with task performance rather than an attitude toward one's work or the organization. Second, Christian et al. identified work engagement as multiple dimensions, as it represents the simultaneous and holistic investment of one's self into his or her role. Christian et al. particularly viewed engagement as a high-order construct, because the correlations among each dimension were shown to be strong in previous studies. Lastly, Christian et al. indicated that work engagement is "relatively enduring but may fluctuate over time" (p. 94). Because of the dynamic feature, according to Christian et al., engagement can also be affected by individual differences.

The definitions reviewed (Table 2.1) in this section show that most of the conceptualizations of engagement view engagement as a higher-order, multidimensional construct. More specifically, Kahn's (1990) conceptualization and the contemporary ones drawn from Kahn's concept contain three components of engagement in terms of cognitive, emotional, and behavioral aspects of self-in-role. The inclusion of three components consistently reflects Kahn's (1990) conceptualization of engagement. Maslach et al.'s (2001) conceptualization and the contemporary ones built on job burnout literature also identify engagement as a second-order,

multidimensional construct. These concepts are composed of energy, involvement, and efficacy or consisted of vigor, dedication, and absorption. Each component was developed to address each component of job burnout.

Table 2.1.

Definitions of Engagement at Work

Citation	Term	Definition
Kahn (1990)	Personal engagement	"The simultaneous employment and expression of a person's preferred self in task behaviors that promote connections to work and to others, personal presence, and active, full role performances" (p. 700).
Maslach, Schaufeli, and Leiter (2001)	Job engagement	Job engagement is perceived to be the antithesis of job burnout, which is defined as "a prolonged response to chronic emotional and interpersonal stressors on the job" (p. 405).
Harter, Schmidt, and Hayes (2002)	Employee engagement	"An individual's involvement and satisfaction with as well as enthusiasm for work" (p. 269).
Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002)	Job engagement	"A more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (p. 74).
Saks (2006)	Employee engagement	"A distinct and unique construct that consists of cognitive, emotional, and behavioral components that are associated with individual role performance" (p. 602).
Macey and Schneider's (2008)	Employee engagement	Employees' desirable state related to organizational purpose. Engagement connotes "involvement, commitment, passion, enthusiasm, focused effort, and energy" (p. 4).
Rich, Lepine, and Crawford (2010)	Job engagement	"The harnessing of an employee's full self in terms of physical, cognitive, and emotional energies to work role performances" (p. 617).
Shuck and Wollard (2010)	Employee engagement	"An individual employee's cognitive, emotional, and behavioral state directed toward desired organizational outcomes" (p. 103).
Christian, Garza, and Slaughter (2011)	Work engagement	"A relatively enduring state of mind referring to the simultaneous investment of personal energies in the experience or performance of work" (p.95).

This study adopts Kahn's (1990) conceptualization of personal engagement because the definition represents one's simultaneous investment of the holistic self into job performance. More specifically, this study utilizes. Rich et al.'s (2010) multidimensional construct consisting of cognitive, emotional, and behavioral engagement, drawn from Kahn's concept, as the

construct emphasizes the simultaneous self-expression at work. Kahn's conceptualization of engagement can differentiate the concept of engagement from other constructs related to organizational behaviors. Regarding a term for engagement, this study used *job engagement* because the study operationalizes engagement with Rich et al.'s (2010) job engagement construct, focusing on an individual's harnessing of the full self in job performance. In this chapter, several terms referring to engagement at work (e.g., engagement, engagement at work, employee engagement, work engagement, and job engagement) are employed to reflect the contexts in which the terms were utilized.

Engagement at Work and Other Job Attitude Variables

There have been debates over the uniqueness and the added usability of the construct of engagement in academia. For example, Newman, Joseph, Sparkman, and Carpenter (2011) argued that engagement is a blend of other job attitude constructs, such as job satisfaction, job involvement, and organizational commitment. In fact, generally in social science, when a new construct emerges, there is a dispute as to whether or not it is unique. In this sense, Shuck, Ghosh, Zigarmi, and Nimon (2013) asserted that these debates could facilitate the progress of a newly developed construct. As a newly emerged construct, engagement needs to be clarified in terms of the additional advantages that the construct can contribute to research in the organizational behavior literature.

In the literature on engagement, researchers have made an effort to advance the concept of engagement by comparing and contrasting it to other job attitude variables. The following section presents comparisons made between engagement and other representative job attitudinal constructs (i.e., job satisfaction, job involvement, and organization commitment), which have been identified as similar concepts to engagement by researchers (e.g., Newman et al., 2011).

Through the comparison, engagement can be more clearly conceptualized and identified as a unique construct in the organizational behavior literature.

Engagement and job satisfaction. Job satisfaction refers to an automatic, emotional reaction to a job based on a person's perception of whether he or she has achieved or can achieve his or her values or needs through a job (Locke, 1969). Based on Locke's definition, Weiss and Cronpanzano (1996) emphasized emotional elements when defining job satisfaction. According to Locke (1969), the level of job satisfaction depends on the degrees of discrepancies between individuals' values or needs (e.g., Morse, 1953; Porter, 1962) and the actual state of a job. To capture the phenomenon of job satisfaction, the overall assessment of one's job (e.g., the extent to which a person likes his or her job) and the facets of a job (e.g., pay, job challenge, and empowerment) were measured (Pinder, 2007).

When it comes to antecedents of job satisfaction, contextual factors and individual traits were both found to be predictors of job satisfaction. To be specific, in the meta-analytic research on frontline registered nurses' job satisfaction, conducted by Saber (2014), task requirements, empowerment, and control were shown to be the strongest predictors of job satisfaction, while autonomy and stress were found to moderately predict job satisfaction. In Judge, Piccolo, Podsakoff, Shaw, and Rich's (2010) meta-analysis study on the relationship between pay and job satisfaction in the workplace, pay level had a weak relationship with job satisfaction. Bruk-Lee, Khoury, Nixon, Goh, and Spector (2009) conducted a meta-analysis regarding the relationship between personality and job satisfaction. In this study, Bruk-Lee et al. found that job satisfaction was positively correlated to an internal locus of control, positive affectivity, and the personality characteristic achievement striving. Also, negative relationships were found between an external locus of control, trait anger, Machiavellianism, negative affectivity/trait anxiety, and the

personality characteristic global and impatience/irritability. The personality trait neuroticism was most strongly and negatively related to job satisfaction.

As consequences of job satisfaction, researchers argued that productivity, employee turnover, and absenteeism were influenced by job satisfaction (Pinder, 2007). However, the relationships between job satisfaction and its consequences are not always direct; according to Weick (1969), job satisfaction will have a direct link to performance if employees believe that their efforts will lead to a reduction in equivocality.

Several similarities and differences exist between job satisfaction and engagement. Job satisfaction involves emotional reactions to one's job. Similar to job satisfaction, engagement also includes positive emotional attitudes toward a job. However, engagement involves a high level of activation or energy, while job satisfaction connotes happiness, pleasantness, or cheerfulness, (Erickson, 2005; Macey & Schneider, 2008). In this vein, engagement differs conceptually from job satisfaction in that engagement emphasizes willingness to invest energy, passion, and affection (Macey & Schneider, 2008), and it is characterized by "urgency, focus, and intensity" (Macey, Schneider, Barbera, & Young, 2009, p. 40), focusing less on satiation and contentment, which are the main elements of job satisfaction (Macey & Schneider, 2008; Macey et al., 2009; Shuck et al., 2013). In addition, engagement emphasizes the person's relationship with the work itself, whereas job satisfaction is related to need contentment through a job (Maslach et al., 2001). Similarly, Kahn's (1990) definition of engagement implies that a job or task is a field in which employees use and express their selves and a means by which they connect themselves to others and the world. Furthermore, engagement is dynamic because it involves employees' response to "the momentary ebbs and flows" (Kahn, 1990, p.693) based on day-to-day interactions between employees and their jobs or job conditions (Kahn, 1990; Shuck

et al., 2013), whereas job satisfaction involves a general, global perception of the job (Heger, 2007).

When it comes to predicting performance, because engagement is more inclusive than job satisfaction, engagement, conceptually, can explain performance better than job satisfaction can. Although the assumption about job satisfaction is that employees satisfied with their jobs become more productive in order to maintain their jobs (Wright, 2006), job satisfaction, which connotes an inactive, unmoving, and static state of fulfillment, is not directly related to performance because satisfied employees are likely to put an effort into maintaining a certain level of status quo (Shuck et al., 2013) or a current state of happiness (Rich, Lepine, & Crawford, 2010). In contrast, engagement has behavioral implications (Shuck et al., 2013), as it involves the investment of individuals' resources into their tasks (Christian et al., 2011; Kahn, 1990; Macey & Schneider, 2008; Rich et al., 2010; Shuck et al., 2013) and thus connotes a progressively forward-moving state (Erickson, 2005) that contributes to organizational outcomes (Shuck et al., 2013).

Engagement and organizational commitment. Organizational commitment refers to "the strength of an individual's identification with and involvement in a particular organization" (Porter, Steers, Mowday, & Boulian, 1974, p. 604). Researchers perceived organizational commitment as a multidimensional construct. According to Porter et al. (1974), organizational commitment has three interrelated characteristics: "(a) a strong belief in and acceptance of the organization's goals and values, (b) the willingness to exert considerable effort on behalf of the organization, and (c) a definite desire to maintain organizational membership" (p. 604). Suggesting that organizational commitment involves a desire, a need, or an obligation to maintain organizational membership based on value and goal congruence, Meyer and Allen

(1991) proposed three components of organizational commitment—affective, normative, and continuance commitment. Affective commitment involves "an employee's emotional attachment to, identification with, and involvement in the organization" (p. 67). Continuance commitment refers to "an awareness of the costs associated with leaving the organization" (p. 67), facilitated by the transactions between an employee and his or her organization. Normative commitment is defined as "a feeling of obligation to continue employment" (p.67), based on a person's intrinsic responsibility formed by his or her socialization. That is, organizational commitment includes behavioral aspects for the purpose of maintaining organizational membership based on shared values and interests (Mowday, 1998).

The following factors were demonstrated as predictors of organizational commitment in previous research. First, an individual's demographic characteristics, such as an employee's educational level, age, and work experience affect the level of organizational commitment (Pinder, 2008; Steers, 1977). Also, one's disposition, such as the need for achievement, has an influence on organizational commitment. In addition to individual characteristics, environmental factors affect the level of organizational commitment. Specifically, the degree to which one's organization meets an employee's expectations (Arnold & Feldman, 1982; Steers, 1977), participation in the decision- making process (Rhodes & Steers, 1981), perceived organizational support (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), organizational justice (Meyer et al., 2002), role clarity (or ambiguity) and conflict (Jamal, 1984; Meyer et al., 2002), and transformational leadership (Meyer et al., 2002) were found to be the antecedents of organizational commitment. Moreover, some components of job characteristics (i.e., skill variety and job scope) and group-leader relations (i.e., task interdependence, leader communication, and participative leadership) demonstrated positive relationships with organizational commitment

(Mathieu & Zajac, 1990). Job satisfaction was also revealed as an antecedent of organizational commitment (O'Reilly & Caldwell, 1981).

In terms of consequences of organizational commitment, organizational commitment showed a strong, negative relationship with intention to leave (Mathieu & Zajac, 1990), withdrawal cognition, and turnover (Meyer et al., 2002). Particularly, affective commitment proved to have the strongest, positive correlations with organizational outcomes, including performance and organizational citizenship behavior, and the strongest, negative correlations with individual outcomes, such as stress and work-family conflict (Meyer et al., 2002).

In addition, research has revealed moderators in the relationships between organizational commitment and its consequences. For example, a type of job (e.g., sales vs. non-sales) and organizational cultures (e.g., collectivism vs. individualism) moderated the relationships between organizational commitment and job performance (Jaramillo, Mulki, & Marshall, 2005). In the relationship between organizational commitment and turnover, employees' career stages proved to be the moderators of the relationship (Cohen, 1991).

The following similarities and differences between engagement and organizational commitment were indicated by researchers. Engagement and organizational commitment are similar in that they both involve an attachment-like state, which implies behavioral aspects and organizational outcomes (Shuck et al., 2013). However, the two constructs are distinct because the reference of each one regarding attachment is different. Specifically, the construct of engagement proposed by Kahn (1990) involves a person's attachment to the role or task (Erickson, 2005; Macey & Schneider, 2008; Maslach et al., 2001; Shuck et al., 2013), whereas organizational commitment relates to an individual's attachment to and attitude toward the organization (Christian et al., 2011; Saks, 2006; Shuck et al., 2013). Additionally, the nature of

the two constructs is different. Kahn (1990) indicated that engagement fluctuates according to an employee's interpretation of work and various work conditions, whereas organizational commitment is, conceptually and empirically, relatively stable so that one can maintain the average level of organizational commitment over time. This means that organizational commitment is influenced very little by day-to-day events at work (Mowday, Steers, & Porter, 1979; Shuck et al., 2013). Furthermore, the intentions of engagement and organizational commitment are also different: Engagement focuses on the investment of personal resources in the role or the job based on psychological experiences in work and work conditions, and such investment leads to organizational outcomes, consequently (Shuck et al., 2013). In contrast, employees who have a high degree of organizational commitment make an effort to achieve an organizational goal because they involve themselves in the organization (Porter et al., 1974). In terms of the relationship with work outcomes, in empirical studies (e.g., Menguc et al., 2013), the variable of engagement was used without adding other constructs because it can explain comprehensive aspects of a person's role performance. On the other hand, Harrison et al. (2006) and Newman and Harrison (2008) argued that instead of a single, specific, narrow construct, such as organizational commitment, various predictors of performance need to be used together to understand employee work behavior (Shuck et al., 2013). This argument implies that organizational commitment is not sufficient to explain employee behavior at work and organizational or job performance (Brown, 1996).

Engagement and job involvement. When job involvement had emerged as a new construct, researchers attempted to conceptualize job involvement by differentiating it from job satisfaction and intrinsic motivation (Lawler & Hall, 1970). Job involvement connotes the relationship between a person's job and his or her self-concept (Pinder, 2008). Lodahl (1964)

defined job involvement as “the degree to which a person is identified psychologically with his work or the importance of work in his total self-image” (p. 487). Brown (1996) indicated that job involvement implies “a positive and relatively complete state of engagement of core aspects of the self in the job” (p. 235). In particular, job involvement pertains to ego-involvement related to one’s job or job performance; it concerns how central job performance is to a person and how a person’s ability to perform influences self-esteem (French & Kahn, 1962).

In Brown’s (1996) meta-analysis research on job involvement, similar to job satisfaction and organizational commitment, antecedents of job involvement can be categorized as personality variables and situational variables. Regarding personality, internal motivation has a strong influence on job involvement. Also, work ethic endorsement and self-esteem affect one’s level of job involvement. In terms of situational variables, job characteristics, supervisory behaviors, and role perceptions proved to be predictors of job involvement. More specifically, of the job characteristics, job challenge strongly predicted job involvement. In addition, the other job characteristics, such as skill variety, task identity, feedback, task significance, task complexity, and motivating potential, had moderate relationships with job involvement. Supervisors’ behaviors for employee participation in decision making had a strong effect on job involvement, while leaders’ consideration had a moderate relationship with job involvement. In contrast, role perceptions—role ambiguity and conflict had only small, negative influences on job involvement.

Consequences of job involvement shown in Brown’s (1996) meta-analysis generally involve job attitudes, including job satisfaction, supervisor satisfaction, coworker satisfaction, and satisfaction with promotion. However, job involvement had weak relationships with work outcomes—job performance, absenteeism, and turnover. According to Brown (1996), these

results suggest that job involvement does not have a direct relationship with work performance. Moreover, job involvement only had small effects on work-family conflict, job stress, anxiety, and life satisfaction.

Considering the definitions of job involvement described earlier, job involvement and engagement are similar in that both of the constructs relate to the psychological relationship between an employee's self and his or her job. However, engagement is different from job involvement in that engagement, in Kahn's (1990) definition, includes not only one's cognition but also emotion and behavior; in contrast, job involvement, according to Kanungo (1982), is a cognitive state related to one's psychological identification with the job. In fact, the Job Involvement Questionnaire developed by Kanungo (1982), which is widely used to measure job involvement based on the most precise conceptualization of the construct (Brown, 1996), deals solely with cognitive aspects without behavioral implications.

For this reason, some researchers (e.g., Christian et al., 2011; Macey & Schneider, 2008; Maslach et al., 2001; and Salanova, Agut, & Peiro, 2005) argued that job involvement is a facet of engagement. Specifically, Maslach et al.'s (2001) concept of engagement consists of involvement, efficacy, and energy, and Kahn's conceptualization encompasses cognitive, emotional, and physical aspects of self-investment; thus, engagement is a broader concept than involvement. Other scholars contended that while engagement and job involvement overlap to some extent (Brown, 1996; Macey & Schneider, 2008; May et al., 2004; Saks, 2006; Salanova et al., 2005; Shuck et al., 2013), each construct has its own uniqueness with regard to employees' interpretations of their work (Christian et al., 2011; Kahn, 1990; Rich et al., 2010; Shuck et al., 2013). To be specific, engagement at work involves psychological experiences of both work and work conditions and focuses on the active aspects of self in the work role (i.e., the investment of

personal resources) instead of the static aspects of self, which job involvement connotes (e.g., identification of the self with the job).

In terms of outcomes, some studies revealed that the relationships of the two constructs with role perceptions and physical or mental health outcomes were different. For example, studies showed that engagement was associated with psychological health (Hallberg & Schaufeli, 2006) and had negative correlations with health ailments (e.g., sleep disturbances or depression) and role conflict. Job involvement, on the contrary, was not related to mental or physical health outcomes (Brown, 1996; Hallberg & Schaufeli, 2006). Regarding the prediction of performance, the effect of employees' engagement on performance (e.g., task performance and organizational citizenship behavior) has been proven (e.g., Menguc, Auh, Fisher, & Haddad, 2013), whereas other studies have shown that the relationships between job involvement and performance are not strong, in general (Brown, 1996; Wollard & Shuck, 2011).

In summary, constructs in the organizational behavior literature—not only engagement but also other job attitudinal constructs, such as job satisfaction, organizational commitment, and job involvement—have been developed by differentiating them with other similar constructs in the process of their conceptualizations. In this section, through the comparison between engagement at work and other constructs, the added usability that engagement can provide to the scholarly literature was explored. The core aspect that engagement at work contains is that it is a more comprehensive concept, which explains the whole self at work, than other constructs. Compared to job satisfaction and job involvement, engagement more directly predicts work outcomes (e.g., job performance), because it implies behavioral aspects. Although organizational commitment, similar to engagement at work, has also behavioral implications, organizational commitment accounts for a narrower aspect of performance than engagement does. Thus,

engagement can be considered as the construct that better predicts an employee's performance. By identifying the influencing factors of engagement at work, research in the fields of HRD, HRM, and management can provide implications as to the ways to increase individual performance through employees' engagement.

Foundations of Engagement at Work

Each conceptualization of engagement at work has a different theoretical and epistemological foundation (Shuck et al., 2013). Most modern conceptualizations of engagement, which are used in many empirical studies, have their roots in the definition(s) and construct(s) proposed by Kahn (1990) and/or Maslach et al. (2001). Along with the major approaches to engagement at work, the theoretical works of Saks (2006) and Meyer and Gagné (2008) also contributed to advancing research on engagement by proposing rigorous, unifying frameworks for research. To be specific, Kahn's approach emphasizes psychological experiences based on needs satisfaction at work (Shuck, 2011), whereas Maslach et al.'s concept of engagement is considered the antipode of job burnout (Maslach et al., 2001), a concept that has been developed in the literature on job stress. As a stronger theoretical rationale for engagement research, which can explain the phenomenon of engagement, Saks (2006) proposed social exchange theory, while Meyer and Gagné (2008) suggested self-determination theory. In this section, foundations of engagement at work employed in those representative conceptualizations and theoretical works are reviewed.

Kahn's (1990) Foundation of Personal Engagement at Work

Kahn (1990), who coined the concept of engagement, generated a grounded theory of personal engagement at work based on his ethnographic research. In his study, as described earlier, Kahn defined personal engagement as "the simultaneous employment and expression of a person's preferred self in task behaviors that promote connections to work and to others,

personal presence (physical, cognitive, and emotional), and active, full role performances" (p. 700). Kahn (1990) employed Goffman's (1961) work, which argued that people are momentarily attached to and detached from role performance in fleeting face-to-face encounters, as a starting point for developing his engagement theory. Kahn adapted Goffman's concepts of attachment and detachment in social psychology to fit into the organizational setting by adding the perspectives of psychology, sociology, and group theory: needs satisfaction (Alderfer, 1972; Maslow, 1970), social roles (Merton, 1957), and group dynamics (Bion, 1961; Slater, 1966; Smith & Berg, 1987), respectively.

In Kahn's ethnographic study, although Kahn's starting point to understand engagement was based on Goffman's work on human interaction, the results of the study showed that employees' three psychological experiences (i.e., *psychological meaningfulness*, *safety*, and *availability*) at work are critical in the development of engagement. Specifically, psychological meaningfulness is defined as "a sense of return on investments of self in role performances" (p.705), and psychological safety refers to "a sense of being able to show and employ self without fear of negative consequences to self-image, status, or career" (p. 705). Psychological availability involves "a sense of possessing the physical, emotional, and psychological resources necessary for investing self in role performances" (p. 705). The important premise under engagement, according to Kahn (1990), is that people engage or disengage depending on their psychological experiences with self-in-role. Thus, as Shuck (2011) pointed out, Kahn's notion of personal engagement that connotes self-expression and self-employment with psychological experience is related to human needs satisfaction, such as needs for growth, relatedness, self-esteem, and existence (Alderfer, 1972; Maslow, 1970) in role performance.

On the basis of the results of the study, Kahn (1990) proposed a framework that was composed of distal and proximal antecedents of engagement, a key principle of Kahn's theory (Christian et al., 2010). Distal antecedents involve environmental and individual factors, while proximal antecedents relate to psychological conditions. This framework is similar to Hackman and Oldham's (1980) in the job design literature in that both emphasize the role of psychological states in the relationships between environmental factors and work outcomes. More specifically, as discussed earlier, proximal factors are identified as psychological meaningfulness, safety, and availability. When it comes to distal factors, Kahn's study showed that the factors that affect psychological meaningfulness are task characteristics, role characteristics, and work interactions, while psychological safety is influenced by interpersonal relationships, group and intergroup dynamics, and management style and process. Psychological availability is increased or decreased depending on the level of emotional energy, insecurity, and outside life.

In summary, Kahn's (1990) conceptualization of engagement relates to a psychological connection between self and role, focusing on role performance. Engagement fluctuates according to one's experience facilitated by organizational variables and personal characteristics. Kahn's conceptualization is grounded on human needs satisfaction along with social interaction, adapted to fit an organizational context.

Maslach et al.'s (2001) Foundation of Job Engagement

Maslach et al.'s (2001) conceptualization of job engagement is recognized as one of the two major foundational works along with Kahn's (1990) study (Shuck, 2011). In the literature on job burnout, engagement at work is perceived as the antithesis of job burnout, which is defined as "a prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach

et al., 2001, p. 405). As can be seen in the definition of burnout, burnout focuses on emotional work and stressors at workplace.

The concept of job burnout is grounded in psychiatry (i.e., Freudenberger, 1975) and social psychology (i.e., Maslach, 1976) focusing on employees' job stress, depression, and psychological health in organizations. However, since positive psychology emerged, the job burnout literature has expanded its boundary by capturing positive relationships between a person and his or her environment (Schaufeli & Bakker, 2004). In this sense, the components of job engagement were perceived to be directly opposite dimensions to those of burnout (Maslach et al., 2001); job burnout consists of exhaustion, cynicism, and ineffectiveness, whereas job engagement is composed of energy, involvement, and efficacy (Maslach & Leiter, 1997; Maslach et al., 2001). From the stance of positive psychology, research on job engagement built on the burnout literature involves the areas of employee happiness, well-being, and psychological health.

In order to understand burnout and identify the influencing factors of burnout and engagement, Maslach, Schaufeli, and Leiter (2001) incorporated the principle of job-person fit (French, Rodgers, & Cobb, 1974) into their framework. By doing so, Maslach et al. integrated individual and situational factors. Maslach et al. also attempted to expand the job-person framework, which generally addressed new comers' and entry issues, by including burnout occurring at a later point after an employee enters an organization. On the basis of the framework, Maslach et al. (2001) argued that the mismatch between a person's expectations about his or her job and work conditions and the actual conditions of his or her job and work environment causes job stress and burnout, whereas congruence leads to engagement. The framework of job-person fit is similar to Rousseau's (1995) concept of a psychological contract;

mismatch occurs when a remaining issue exists in a psychological contract or changes in work conditions are not acceptable to an employee. Maslach et al. argued that chronic mismatches cause burnout and proposed six factors that lead to burnout: workload (e.g., excessive overload, lack of skills for a job, and emotional work), control (e.g., the level of responsibility), reward (e.g., financial rewards and recognition), community (e.g., interpersonal relationships at work), fairness (e.g., inequity of workload or pay), and values (e.g., conflicts in the values of a person and the organization). Those factors interact with one another in the development of burnout (Maslach et al., 2001). On the contrary, matches between a person's expectations and the six work conditions increase the level of job engagement.

Saks's (2004) Foundation of Job and Organization Engagement

Saks (2006), who conducted the first academic research on antecedents and consequences of engagement at work (Shuck, 2011), suggested social exchange theory as an undergirding theory of the concept of engagement. In his research, Saks (2006) defined employee engagement as "the extent to which an individual is psychologically present in a particular organizational role" (p. 604) and identified employee engagement as two dimensions—job engagement and organization engagement—according to roles given to employees at work. Specifically, job engagement relates to work roles, while organization engagement involves a role as an organizational member.

Proposing a theoretical framework based on social exchange theory, Saks (2006) argued that psychological approaches to engagement, such as Kahn's (1990) and Maslach et al.'s (2001) studies, do not fully explain why individuals respond differently to psychological conditions. He asserted that social exchange theory can be a strong theoretical rationale, because the degree of engagement can be explained based on the notion of the rules of exchange, which concerns

reciprocity or repayment rules. According to Saks (2006), social exchange theory addresses a series of interactions between interdependent parties (Cropanzano & Mitchell, 2005), and engagement can be viewed as the exchange of economic and socioemotional resources between employees and their organizations. Specifically, when individuals receive economic and socioemotional resources from their organization, they feel a sense of obligation and try to repay their organization. Such repayment represents employees' engagement in their work.

On the basis of social exchange theory, Saks (2006) proposed a research model for engagement research. In this model, job characteristics, perceived organizational support, perceived supervisor support, rewards and recognition, procedural justice, and distributive justice were included as the antecedents of job engagement and organization engagement.

Meyer and Gagné's (2008) Foundation of Engagement at Work

Meyer and Gagné (2008) raised an important issue that lies in the engagement literature—the absence of a strong unifying theory to guide engagement research. They claimed that self-determination theory (SDT) can be employed as a guiding framework for engagement research. SDT emerged to address the critiques of the arguments about the detrimental effects of extrinsic rewards on intrinsic motivation. The main argument about early works on intrinsic and extrinsic motivation was that intrinsic and extrinsic rewards were interactive, with extrinsic rewards diminishing intrinsic motivation (Deci, 1971). However, several critiques of the earlier works have been made in terms of the lack of empirical evidence and the limitations of the laboratory experiment method used in the studies. In addition, the principles suggested by the work were considered difficult to apply to organizational settings due to their simplified dichotomy between intrinsic and extrinsic motivation (Gagné & Deci, 2005).

SDT proposed autonomous motivation and controlled motivation with an autonomy continuum in terms of extrinsic motivation. SDT argues that extrinsic motivation can vary according to the levels of autonomy and volition undergirding a person's behavior (Deci & Ryan, 1985; Gagné & Deci, 2005; Ryan & Deci, 2000). In terms of the autonomy continuum, SDT identifies external motivation as four types—external regulation, introjection, identification, and integration (Gagné & Deci, 2005). These types of external motivation represent the degrees to which a person internalizes an external regulation on a controlled-to-autonomous continuum (Gagné & Deci, 2005; Ryan & Deci, 2000). To be specific, external regulation involves the action initiated and maintained by contingent external rewards, because the activities assigned to a person are not intrinsically motivating. Introjection connotes a regulation that a person has taken but not accepted as his or her own, while identification occurs when a person take the value underlying a behavior as his or her own goals, on the basis of the congruence between personal goals and the assigned activities, with a feeling of a greater level of volition. Finally, integration is a completed type of internalization and relates to extrinsic motivation with true autonomy and volition. When a person has integrated regulation, he or she is self-determined based on a full sense of the integration of external goals and values into his or her own goals and values (Gagné & Deci, 2005).

Based on SDT as a possible framework for engagement research, Meyer and Gagné (2008) claimed that engagement can be viewed as autonomous regulation—behaviors regulated by internalized goals and self-control. According to Gagné and Deci (2005), satisfaction of basic psychological needs is necessary for intrinsic motivation and internalization. More specifically, the satisfaction of the needs for relatedness and competence relates to the internalization of the

values and regulations extrinsically imposed, whereas the satisfaction of the need for autonomy involves the full internalization of behavior—integration.

Meyer and Gagné (2008) argued that to better understand the development of engagement, research needs to identify and account for the underlying mechanisms of engagement rather than focusing on potential antecedents of engagement. In this regard, Meyer and Gagné claimed that SDT can explain poor performance and reduced employee well-being, including engagement, by providing evidence as to autonomous regulation through needs satisfaction. Based on SDT, engagement research can pay attention to the satisfaction of universal needs—relatedness, competence, and autonomy, shown to have a significant mediating role in the relationships between environmental factors (e.g., job characteristics and leadership) and autonomous regulation (Gagné & Deci, 2005; Meyer and Gagné, 2008). Meyer and Gagné, thus, concluded that engagement can be grounded in motivation theory by using SDT as a guiding framework.

In summary, similarities and differences were found among the theoretical works of engagement at work reviewed in this section. First, two early conceptualizations developed by Kahn (1990) and Maslach et al. (2001) were based on various frameworks by combining or extending the frameworks, whereas Saks (2006) and Meyer and Gagné (2008) proposed unifying theoretical foundations in order to understand the phenomenon of and antecedents to engagement. In addition, Kahn (1990) and Meyer and Gagné (2008) included the mediating role of needs satisfaction in the development of engagement, while Maslach et al. (2001) and Saks (2006) assumed the direct relationships between environmental factors and engagement. Even though Maslach et al.'s (2001) framework did not suggest the role of psychological experience, because their conceptualization was deeply rooted in psychology, the construct implies

psychological aspects in the facilitation of engagement. In contrast, Saks' (2006) framework—social exchange theory—focuses on behavioral aspects related to engagement as the exchange of economic and socio-emotional resources. Moreover, whereas the frameworks of Kahn (1990) and Maslach et al. (2001) proposed both contextual factors and personal traits as drivers of engagement, Saks (2006) and Meyer and Gagné (2008) included only environmental factors without individual characteristics in their frameworks. Lastly, Meyer and Gagné (2008) did not provide specific, possible drivers of engagement, unlike the frameworks proposed by Kahn, Maslach et al., and Saks.

Empirical Work on Antecedents of Engagement at Work

To identify empirical work on antecedents of engagement, I searched research using databases including EBSCO, JSTOR, PsycINFO, Science Direct, and Google Scholar. I also reviewed publications in major journals in the fields of human resource development, human resource management, industrial and organizational psychology, and occupational health, such as *Human Resource Development Quarterly*, *Human Resource Management Journal*, *Journal of Organizational Behavior,* and *Personnel Psychology.* By analyzing research articles on antecedents of engagement, I found that the following three theoretical approaches exist with respect to conceptualizing and researching engagement at work: Kahn's theory of engagement, job demands and resources (JD-R) model, and social exchange theory (SET). Although other theoretical perspectives, such as leadership and self-regulation theories, have been employed for some studies, these three theoretical frameworks have emerged as the dominant approaches to thinking about antecedents of engagement.

In this section, first, empirical studies were identified according to undergirding theories or models of the studies to explore the conceptualizations of engagement employed, guiding

frameworks for the studies, and factors investigated in the studies (summarized in Table 2.2, 2.3, and 2.4). Next, research was reviewed in order to identify the antecedents of engagement proved to be effective in previous studies.

Research on Antecedents of Engagement based on Kahn's Theory

Kahn's (1990) work on predictors of personal engagement at work is a pioneering study that introduced the concept of engagement at work to literature. His work was based on motivational theories, especially needs satisfaction theories (Shuck, 2011). Kahn's work is important to understand both the phenomenon and drivers of engagement; not only does it conceptualize engagement at work, but it also provides the process of developing engagement. Kahn (1990) argued that environmental and personal factors influence a person's engagement level at work, and importantly, the relationships between influencing factors and engagement are mediated by psychological conditions. Thus, Kahn suggested an important framework that helps us understand what and how factors affect a level of engagement at work.

Some of the empirical studies on antecedents of engagement employing Kahn's theory of personal engagement at work aimed to test Kahn's theory. These studies formulated research hypotheses by choosing several factors related to the three psychological conditions proposed by Kahn. However, little research explicitly included the psychological conditions in the research framework. Other studies tended to integrate Kahn's theory with other theories relevant to the variables tested.

For example, pointing out the lack of evidence about Kahn's (1990) theory—the relationships among work elements, psychological conditions, and employees' engagement at work, May et al. (2004) tested Kahn's theory, including the mediating effects of the psychological states in the relationships between situational factors and engagement. In their

research, May et al. formulated hypotheses according to Kahn's (1990) framework; first, they identified independent variables by refining the factors that Kahn proposed for each psychological state. That is, job enrichment, work role fit, and co-worker relations were assumed to be the antecedents of psychological meaningfulness, while supervisor relations, co-worker relations, and co-worker norms were hypothesized as the antecedents of psychological safety. Resources, work role security, and outside activities were selected as the drivers of psychological availability. In addition, the researchers included the relationships between psychological states and engagement and the mediating effects of the psychological conditions in their testing.

Drawing their research from Kahn's (1990) work, Rich et al. (2010) attempted to develop a theory that explains the mechanisms of engagement and job performance. Rich et al. employed Kahn's conceptualization of engagement and situated their framework within Kahn's framework. The researchers tested the effects of three antecedents (value congruence, perceived organizational support, and core self-evaluations) on engagement, chosen from the factors affecting each psychological condition suggested by Kahn. More specifically, value congruence was selected, because it was assumed to be the predictor of psychological meaningfulness. Perceived organizational support was included in the research model, because it was identified as the driver of psychological safety. Core self-evaluations, on the other hand, were selected for testing, because it relates to psychological availability.

Anitha (2014) examined the determinants of engagement by choosing several possible drivers of engagement considering Kahn's framework—three psychological conditions of engagement. In doing so, Anitha included the following potential determinants of engagement for their research: work environment, leadership, team and co-worker relationship, training and career development, compensation, organizational policies, and workplace well-being. More

specifically, a meaningful workplace environment and leaders who consider their employees' work is meaningful were selected because of their relationships with psychological meaningfulness, while team and co-worker relationship were chosen on the basis of their relationship with psychological safety. Training and career development and organizational policies in terms of work and life balance were hypothesized as influencing factors of engagement due to their relationships with psychological availability. Lastly, although compensation and employee well-being were chosen for examination, no explicit description was provided in terms of their relationships with psychological states.

Shuck, Reio, and Rocco (2011) drew their study from Kahn's framework, because they attempted to situate engagement within the HRD context, of which interest lies in performance improvement and organization development. In addition, Shuck et al. indicated that Kahn's multidimensional motivational framework provides unique perspectives on engagement. Shuck et al. conducted a correlation analysis, assuming the positive correlations between job fit and engagement, between affective commitment and engagement, and between psychological climate and engagement.

Fairlie (2011) investigated the role of meaningful work in facilitating engagement and disengagement and other employee outcomes, such as job satisfaction, exhaustion, and turnover cognitions. By connecting the literature on meaningful work, similar to Kahn's concept of meaningfulness, and engagement, Fairlie assumed the positive relationship between meaningful work and engagement.

Reio and Sanders-Reio's (2011) theoretical framework was developed by combining Kahn's framework and Andersson and Pearson's (1999) theory of incivility with the rationale that workplace incivility could be detrimental to engagement. Based on this framework, Reio and

Sanders-Reio (2011) examined the effects of supervisory incivility and coworker incivility on engagement. The researchers employed a three-dimensional engagement construct—meaningfulness engagement, safety engagement, and availability engagement, adapted from Kahn's conceptualization of psychological conditions related to engagement.

For their case study on the exploration of employees' engagement experience, Shuck, Rocco, and Albornoz (2011) developed a conceptual framework by integrating Kahn's (1990) and Maslow's (1970) work. Emphasizing the fulfillment of psychological meaningfulness, safety, and availability in expressing and employing employees' authentic selves at work, Shuck et al. (2011) argued that Maslow's (1970) hierarchy of needs can be a linkage between Kahn's work and motivational theories. According to Shuck et al., self-actualization, placed in the highest order of Maslow's hierarchy of needs is similar to Kahn's concept of engagement. Based on this framework, Shuck et al. found the following emerging themes of engagement experience from their qualitative study: relationship development and attachment to co-workers, workplace climate, and opportunities for learning.

Although Kahn (1990) first theorized engagement at work with a suggestion of the framework and antecedents of engagement and although his conceptualization has been recognized for its uniqueness that differentiates the concept from other motivational constructs, not many studies tested Kahn's theory (Saks & Gruman, 2014). Moreover, although some researchers developed their research frameworks by considering psychological conditions, they did not examine the role of these conditions. Of the empirical studies drawn from Kahn's theory reviewed in this section, only May et al.'s research examined the effects of psychological conditions of meaningfulness, safety, and availability, which were pointed out as the critical factors in facilitating engagement. Shuck and Wollard (2010) indicated the importance of

psychological conditions at work in the development of engagement. Saks and Gruman (2014) also argued that research needs to test a theory of engagement, which includes the three psychological conditions. Thus, more studies need to be conducted to address this gap in the literature. The research on antecedents of engagement based on Kahn's (1990) theory is summarized in Table 2.2.

Table 2.2.

Research Based on Kahn's Theory of Engagement

Author	Conceptualization	Theoretical Framework	Focus
May, Gilson, and Harter (2004)	Kahn (1990)	Kahn (1990)	• The relationships among work elements, psychological conditions, and employees' engagement • The mediating effects of the psychological processes
Rich, Lepine, & Crawford (2010)	Kahn (1990)	Kahn (1990)	• Employee engagement as a multidimensional motivational concept • The effects of three antecedents on engagement: ▪ Value congruence as the potential antecedents of psychological meaningfulness ▪ Perceived organizational support as the potential antecedents of psychological safety ▪ Core self-evaluations as the potential antecedents of psychological availability
Anitha (2013)	Kahn (1990)	Kahn (1990)	• The determinants of employee engagement ▪ Possible determinants of psychological meaningfulness: a meaningful workplace environment, leadership ▪ Possible determinants of psychological safety: team and co-worker relationship ▪ Possible determinants of psychological availability: training and career development and organizational policies for work and life balance
Shuck, Reio Jr., and Rocco (2011)	Kahn (1990)	Kahn (1990)	• The positive correlation between job fit and engagement • The positive correlation between affective commitment and engagement • The positive correlation between psychological climate and engagement
Fairlie (2011)	Kahn (1990) and May et al. (2004)	Meaningful work (King & Napa, 1998; Sheldon et al., 2001) and Need satisfaction theories (Porter, 1962)	• The role of meaningful work in facilitating engagement and disengagement
Reio Jr. and Sanders-Reio (2011)	Kahn (1990)	Kahn (1990)	• Psychological conditions of engagement • The effects of supervisory incivility and coworker incivility on meaningfulness engagement, safety engagement, and availability engagement
Shuck, Rocco, and Albornoz (2011)	Kahn (1990)	Kahn (1990) and Maslow (1970)	• The fulfillment of psychological meaningfulness, safety, and availability in expressing and employing employees' authentic selves at work

Research on Antecedents of Engagement based on the Job Demands and Resources Model

The job demands and resources (JD-R) model was proposed in Demerouit, Bakker, Nachreiner, and Schaufeli's (2001) study to embrace both job stressors and motivators (Bakker and Demeourti, 2014). The model classifies the organizational environment into job demands and resources. To be specific, job demands refer to physical and psychological efforts that cause physiological and psychological costs (Schaufeli & Bakker, 2004), whereas job resources involve physical, psychological, social, and organizational elements that lead to promoting goal achievement and personal growth and development (Bakker & Demerouti, 2007). The JD-R model posits that job demands are related to burnout and job stress, while job resources foster work engagement and employee well-being (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Job resources, which predicted work engagement in previous research, include personal initiative, autonomy, skill utilization, feedback, learning opportunities, social support, supervisory coaching, and financial rewards (Sarti, 2014).

Although several theories have been developed to explain engagement at work, most empirical studies on engagement are based on the JD-R model (Crawford, Lepine, & Rich, 2010; Saks, 2014). Most of the studies consistently adopted Schaufeli et al.'s (2002) conceptualization of work engagement, which defines engagement as "a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (p. 74). Also, some studies included both job demands and job resources with burnout and engagement in their research models, whereas other studies investigated the relationship between job resources and work engagement without job demands and burnout. Moreover, some studies used job resources as one variable to test—a set of organizational interventions, while other studies chose several factors from job resources and treat them as independent variables.

For example, Schaufeli and Bakker (2004) examined the relationships between job demands and burnout and between job resources and engagement and consequences of burnout and engagement. Schaufeli and Bakker claimed that job resources serve as both intrinsic and extrinsic motivators in that job resources facilitate employees' learning and development and support employees' goal achievement. The researchers also tested the mediating effects of burnout and engagement in the relationships between job demands and health problems and between job resources and turnover intention, respectively. Schaufeli and Bakker used job resources as a latent variable that is composed of performance feedback, social support from colleagues, and supervisory coaching.

As described above, some studies on engagement drawn from the JD-R model tested the effect of each variable chosen from a variety of job resources on engagement. For instance, based on the JD-R model, Hulkko-Nyman, Sarti, Hakonen, and Sweins (2012) focused on rewards among a variety of job resources. Hulkko-Nyman et al. tested the effects of total rewards—monetary (e.g., salary), material (benefits and training opportunities), and nonmonetary rewards (e.g., appreciated and challenging work)—on three dimensions of work engagement (i.e., vigor, dedication, and absorption), respectively. Menguc, Auh, Fisher, and Haddad (2013) attempted to explain antecedents—supervisory support and supervisory feedback—and consequences of engagement—performance, with the mediating role of engagement and the moderating role of autonomy in the relationships between the antecedents and consequences. Emphasizing the importance of job characteristics in the development of engagement, Sarti (2014) claimed that job characteristics can be framed within the JD-R model in engagement research. Sarti selected several possible influencing factors of engagement for the variables included in the JD-R model. She hypothesized the positive relationships between job

resources (i.e., financial rewards, learning opportunities, decision authority, supervisor support, coworker support, and performance feedback) and work engagement.

Unlike the traditional JD-R model, which postulates job demands affect burnout, while job resources influence work engagement, Crawford, Lepine, and Rich (2010) argued that job demands as well as job resources predict work engagement. In their research, Crawford et al. divided job demands into challenge demands (e.g., high workload, time pressure, and high levels of responsibility) and hindrance demands (e.g., role conflict, role ambiguity, and organizational politics). Using this framework, Crawford et al. investigated the effects of the JD-R model on engagement and found that not only job resources (e.g., opportunities for development, feedback, and participation in decision making) but also challenge demands affect work engagement. Similarly, Nahrgang, Moregeson, and Hofmann (2011) conducted a meta-analytic research; the researchers examined the relationships between job demands and burnout, between job resources and engagement, between job demands and engagement, and between job resources and burnout. The unique aspect of the research is that it tested the effects of the physical safety of the work environment, such as risks and hazards, physical demands, and safety climate.

As evidenced in the above review (summarized in Table 2.3), the JD-R model is a framework for engagement research that provides various potential drivers that can be included in research. Despite the comprehensiveness of the model, however, the JD-R model does not explain why certain job resources will be related to engagement (Saks & Gruman, 2014; Schaufeli & Taris, 2013). Rather, the model simply describes that job resources, as a whole set of the factors of engagement, will satisfy basic psychological needs and are instrumental for work-related goal achievement (Saks & Gruman, 2014). In addition, as Schaufeli and Taris (2013) indicated, the JD-R model is “a heuristic model” (p. 54), which can include any factors in the job

demands and job resources categories, and thus, this limits the generalizability of the results of research. Furthermore, in the case that research considers job resources to be one factor as the sum of several variables, the results of the research cannot show what interventions related to job resources are more effective than others.

Table 2.3.

Research Based on the Job Demands and Resources Model

Author	Conceptualization	Theoretical Framework	Focus
Schaufeli and Bakker (2004)	Schaufeli et al. (2002)	Job demands and resources model	• The relationships between job demands and burnout and between job resources and engagement and consequences of burnout and engagement. • The mediating effects of burnout and engagement in the relationships between job demands and health problems and between job resources and turnover intention
Hulkko-Nyman, Sarti, Hakonen, & Sweins (2012)	Schaufeli et al. (2002)	Job demands and resources model	• The effects of total rewards on three dimensions of work engagement (i.e., vigor, dedication, and absorption) ▪ Monetary rewards (e.g., salary), ▪ Material rewards (e.g., benefits and training opportunities) ▪ Nonmonetary rewards (e.g., appreciated and challenging work)
Menguc, Auh, Fisher, & Haddad (2013)	Schaufeli et al. (2002)	Job demands and resources model and Maslach et al. (2001)	• Antecedents (i.e., supervisory support and supervisory feedback) and consequences of employee engagement (i.e., performance) • The mediating role of engagement and the moderating role of autonomy in the relationships between the antecedents and consequences
Sarti (2014)	Schaufeli et al. (2002)	Job demands and resources model	• The relationships between job resources (i.e., financial rewards, learning opportunities, decision authority, supervisor support, coworker support, and performance feedback) and work engagement
Crawford, Lepine, and Rich (2010)	No description	Job demands and resources model	• A new category of job demands ▪ Challenge demands (e.g., high workload, time pressure, and high levels of responsibility) ▪ Hindrance demands (e.g., role conflict, role ambiguity, and organizational politics) • Both job resources and job demands are the predictors of work engagement.
Nahrgang, Moregeson, and Hofmann (2011)	Schaufel et al. (2002)	Job demands and resources model	• The relationships between job demands and burnout, between job resources and engagement, between job demands and engagement, and between job resources and burnout • Physical safety of the work environment, such as risks and hazards, physical demands, and safety climate, is a possible predictor of engagement.

Research on Antecedents of Engagement based on Social Exchange Theory

Saks (2006) first employed social exchange theory (SET) as a framework of engagement research, arguing that SET is a unified theoretical framework that can explain engagement. SET addresses a series of interactions between two interdependent parties. From this perspective, engagement is perceived to be exchanges for socio-economic resources between employees and their organizations. SET argues that as long as rules of exchange—reciprocity or repayment rules—are observed by both parties, the transaction would be maintained (Cropanzano & Mictchell, 2005; Saks, 2006). SET also explains the reasons for the degree to which individuals respond to organizational support with the norm of reciprocity, which involves an employee's expectation about the rewards he or she would receive based on his or her engagement.

Research on engagement within the framework of social exchange theory focuses on employees' perceptions of organizational support as the antecedents of employees' engagement. From this viewpoint, HRD and HRM interventions, such as training opportunities and rewards, leadership behavior, and favorable job conditions, are considered as support for employees from management in that through the support, employees feel valued and trusted by their organizations (Alfes et al., 2013; James, McKechnie, & Swanberg, 2011; Lee & Bruvold, 2003; Saks, 2006; Shuck, Twyford, Reio, & Shuck, 2014). Research grounded in SET tended to employ Kahn's (1990) conceptualization that consists of cognitive, emotional, and physical engagement or Saks's (2006) conceptualization that divides employee engagement into job engagement and organization engagement.

For instance, Alfes et al. (2013) pointed out that most of the research that examined the relationships between HRM practices and performance with the mediating role of employee attitude was based on social exchange theory. Situating Kahn's (1990) conceptualization of

personal engagement within SET, Alfes et al. investigated the mediating role of engagement between the antecedents of engagement (i.e., perceived line manager behavior and perceived HRM practices) and individual performance (i.e., task performance and innovative work behavior). Similarly, Shuck et al. (2014) adopted Kahn's conceptualization of cognitive, emotional, and behavioral engagement and drew their framework from SET. Based on the conceptualization and theoretical framework, Shuck et al. examined the relationship among HRD practices, engagement, and turnover intention. In doing so, the researchers argued that by grounding their research in SET, the research can identify when employees perceive they are supported at work, specifically when they believe to be supported through participation in HRD practices and the extent to which the perception leads to their engagement. Andrew and Sofian (2012) tested the effects of employee communication, employee development, and co-employee support on job engagement and organization engagement, the conceptualization of employee engagement developed by Saks (2006), with the mediating role of employee engagement in the relationships between the antecedents and consequences—organizational citizenship behavior and organization commitment. James, McKechnie, and Swanberg's (2011) research investigated the relationships between job quality and engagement among several groups of older and younger workers. Based on SET, James et al. focused on the norm of reciprocity to identify the effects of the antecedents on engagement depending on differences in employees' age.

As described above, the central concept of SET is rules of exchange, which represents reciprocity between two interdependent parties. Because reciprocity assumes fairness in transactions (Cropanzano & Mitchell, 2005), research on engagement based on SET includes variables related to fairness in organizational support or interventions as potential antecedents of engagement. For example, Saks (2006) hypothesized procedural justice and distributive justice

as well as perceived organizational support and perceived supervisor support, combining Kahn's (1990) and Maslach et al.'s (2001) conceptualizations of engagement.

SET, as Saks (2006) argued, is a unified, strong framework for engagement studies in that research can clearly identify and understand the variables that need to be examined based on the rule of exchange and norm of reciprocity, centered around support from an organization or managers. Nevertheless, because the focus of SET lies in material- and extrinsic-exchange behavior (Cook, 2000; Stolte, Fine, & Cook, 2001), it is likely to overlook psychological and intrinsic aspects undergirding human behavior. Considering Kahn's (1990) emphasis on critical psychological states in the development of engagement, SET has limitations for explaining the psychological processes underlying employees' engagement at work. The research based on SET is summarized in Table 2.4.

Table 2.4.

Research Based on Social Exchange Theory

Author	Conceptualization	Theoretical Framework	Focus
Alfes, Truss, Soane, Rees, and Gatenby (2013)	Kahn (1990)	Social exchange theory	• The effects of a set of HRM practices (i.e., selection process, training opportunities, rewards systems, career management, development opportunities, and feedback mechanisms) rather than individual HRM practices on employee engagement • The mediating role of engagement between the antecedents of engagement (i.e., perceived line manager behavior and perceived HRM practices) and individual performance (i.e., task performance and innovative work behavior)
Shuck, Twyford, Reio Jr., and Shuck (2014)	Kahn (1990)	Social exchange theory	• The relationships among employees' perception of organizational support for participation in HRD practices (e.g., career management programs and workplace learning events), employee engagement (i.e., total engagement, cognitive engagement, emotional engagement, and behavioral engagement), and turnover intention
Andrew and Sofian (2012)	Saks (2006)	Social exchange theory	• The effects of employee communication, employee development, and co-employee support on job engagement and organization engagement
James, McKechnie, and Swanberg (2011)	Not explicitly stated	Social exchange theory	• Differences in the effects of the antecedent of employee engagement (i.e., job quality) according to employees' age
Saks (2006)	Own conceptualization (job engagement and organization engagement)	Social exchange theory	• The effects of perceived organizational support, perceived supervisor support, procedural justice, and distributive justice on job engagement and organization engagement

Summary of the Research on Antecedents of Engagement at Work

In summary, representative undergirding theories for previous empirical studies were Kahn's (1990) theory of personal engagement at work, the job demands and resources model, and social exchange theory. Research employing Kahn's conceptualization tended to be grounded in Kahn's theory of engagement or social exchange theory, whereas studies drawn from the burnout literature, in general, utilized the JD-R model. While the studies based on the JD-R model and social exchange theory usually employed only one guiding theory, those grounded in Kahn's theory generally integrated Kahn's theory with other theories, such as Maslow's (1943, 1970) hierarchy of needs, or combined various theories when developing hypotheses. This suggests that Kahn's framework needs to be grounded in stronger, foundational theories that can better explain engagement, although "Kahn's (1990) theory is more convincing as it specifies the psychological conditions that lead to engagement as well as the factors that influence each of the psychological conditions" (Saks & Gruman, 2014, p. 163).

In contrast, the JD-R model and social exchange theory are considered to be unifying frameworks for engagement studies. Nonetheless, "the JD-R model itself does not explain what resources will be most important for engagement or why some resources might be more important than others for facilitating engagement" (Saks & Gruman, 2014, p. 163). When it comes to social exchange theory, because the theory focuses on material- and extrinsic-exchange behavior rather than psychological aspects of engagement, it does not fully explain engagement.

Antecedents of Engagement: Results of Empirical Studies

Researchers have attempted to provide empirical evidence on engagement (Saks, 2014), especially in terms of how to facilitate engagement at work, in various fields of study, such as

HRD, HRM, wellness, and organizational behavior (Shuck, 2013). In this section, antecedents of engagement at work, proven to have effects on engagement, are discussed.

Job Characteristics

Job characteristics have proven to predict engagement in research grounded in Kahn's theory of engagement, the JD-R model, or SET. Specifically, research has shown the positive effects of components of the job characteristics model and congruence between personal and job value, and meaningfulness of work.

Components of the Job Characteristics Model. Research that tested the effects of job characteristics on engagement employed Hackman and Oldham's job characteristics model (1975; 1980). Some of the studies used all five job core dimensions—skill variety, task identity, task significance, autonomy, and feedback, while other studies tested only several of the characteristics, such as autonomy and feedback. The results of the studies showed the positive relationships between job characteristics and engagement.

For example, May, Gilson, and Harter (2004), drawn from Kahn's theory, used Hackman and Oldham's (1980) job characteristics model to test the effect of job enrichment on engagement at work, arguing that many studies on job design failed to prove the relationship between job characteristics and psychological meaningfulness. May et al. showed that job enrichment had positive effects on engagement through psychological meaningfulness. Saks (2006) also found that job characteristics are positively related to job engagement.

In addition, according to Menguc, Auh, Fisher, and Haddad (2013), whose study utilized the JD-R model, a supervisor's feedback about job performance and their suggestions for performance improvement positively influenced work engagement. Menguc et al. also found that autonomy in one's job moderates the relationship between supervisor feedback and engagement.

In other words, for employees whose job provides low autonomy, supervisory feedback is positively related to engagement, whereas for those who had high job autonomy, supervisory feedback was not significantly related to engagement.

Moreover, meaningful work, as a job characteristic, subsumes self-actualization, social impact, feelings of accomplishment, career development, and fulfillment of personal life goals and values through work (Fairlie, 2010). Using Kahn's framework, Fairlie (2011) found that meaningful work had a stronger correlation with engagement than the other variables included in his study, such as intrinsic rewards, extrinsic rewards, and organizational support. In Fairlie's study (2011), meaningful work had a positive effect on engagement and accounted for 58% of the variance of engagement along with intrinsic rewards.

Congruence Between Personal and Job or Organizational Value. Employees feel more comfortable and worthwhile in expressing and harnessing themselves in task performance when their self-image, personality, and behaviors are congruent with the behaviors expected by their jobs and organizations (Kahn, 1990; 1992). For this reason, the congruence between one's self-concepts and organizational value fosters an employee's engagement at work.

For instance, Rich et al.'s (2010) study, built on Kahn (1990), showed that perceived value congruence, the alignment of an employee's value with his or her organization's value, was positively related to job engagement. May et al. (2004) tested the relationship between work role fit and engagement. May et al. hypothesized that the alignment of one's work role with his or her self-concept would increase engagement by facilitating a meaningful experience at work, because the alignment enables a person to express his or her authentic self. The results of May et al.'s research revealed that work role fit positively affects psychological meaningfulness and, in turn, engagement at work. Shuck, Reio, and Rocco (2011), whose study grounded in Kahn's

theory, argued that employees who experience consistency between their personality and the values that their jobs require are more likely to be energetic and enthusiastic when they work. In their study, Shuck et al. (2011) showed high positive correlations between job fit and three types of engagement—meaningfulness engagement, safety engagement, and availability engagement.

Job Demands

Job demands are generally addressed as a latent variable consisting of observable variables in engagement research grounded in the JD-R model. The relationships between job demands and engagement have not received much attention from researchers, because many researchers assume that job demands influence burnout, while job resources lead to engagement. However, unlike the conventional job demands and resources model, in their meta-analytic test, Crawford, Lepine, and Rich (2010) divided job demands into two categories—challenge demands and hindrance demands, criticizing that the distinction of the relationships (i.e., job demands as the antecedents of burnout and job resources as those of engagement) is overly parsimonious. According to Crawford et al., challenge demands subsume high workload, time pressure, and high levels of responsibility, whereas hindrance demands include role conflict, role ambiguity, and organizational politics. The results of Crawford et al.'s research demonstrated that challenge demands had positive relationships with engagement, whereas hindrance demands were negatively related to engagement.

Job Resources

Some studies, based on the JD-R model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), took a comprehensive approach to identifying antecedent variables to test. These studies examined the relationship between job resources consisting of various components related to organizational and social support and work engagement, and they proved positive relationships

between the independent and dependent variables. For example, Schaufeli and Bakker (2004) identified job resources to be social support from colleagues, performance feedback, and supervisory coaching and proved the positive relationship between the job resources and work engagement. Crawford, Lepine, and Rich (2010) showed that job resources (i.e., opportunities for development, feedback, and participation in decision making) had a positive relationship with engagement. Nahrgang, Moregeson, and Hofmann's (2011) study revealed that supportive environment, such as social support, leadership, or a safe climate, can be generalizable predictors of engagement as the variable showed consistency in explaining variance of engagement across industries.

Interpersonal Relationships

In the research literature on engagement, interpersonal support, in large, consists of support from colleagues and leaders. In addition, as a factor that negatively affects engagement, incivility of supervisors and coworkers was tested in engagement research.

Coworker support. Co-worker support is an important interpersonal factor that affects the level of engagement. Most of the studies reviewed in this section, regardless of their theoretical perspectives, demonstrated that supportive, trusting, and cooperative relationships with co-workers positively influence employees' engagement. For instance, in their qualitative research, Shuck, Rocco, and Albornoz (2011) found that the development of relationships with co-workers fosters engagement. More specifically, attachment to coworkers, such as family-like relationships at work, facilitates engagement by promoting positive emotions at work. Also, organizational climates that encourage cooperation, trust, and partnership between employees foster employees' feelings connected to their work, and thus, this experience increases the level of engagement. Andrew and Sofian (2012) hypothesized that cooperation with co-employees

would increase engagement by prompting one another to explore and learn better ways to accomplish tasks. The results of Andrew and Sofian's (2012) study showed that co-employee support had a positive effect both on job and organizational engagement. Anitha (2014) argued that supportive and trusting interpersonal relationships are necessary for employees to feel safe at work and to be engaged at work. Anitha also claimed that well-established co-worker relationships satisfy relatedness needs. Anitha found that co-worker relationships had significant effects on engagement. Sarti's (2014) research also provided consistent results with the previous studies in terms of the positive relationship between coworker support and engagement.

Support from leaders. Supportive leaders show concerns for their employees' performance improvement and skill development by providing feedback, coaching their employees, and understanding the employees' emotional responses (Schaufeli & Salanova, 2007). Many studies, based on Kahn's theory, the JD-R model, or SET, revealed that supportive leaders promote employees' engagement levels. For example, Sarti (2014) proved that supervisor support predicts engagement. Lee and Ok (2015) examined the relationship between psychological climate and engagement. In their study, Lee and Ok identified managerial support as a component of psychological climate and found that managerial support, such as managers' commitment to help employees' performance improvement and managers' recognition and appreciation of their employees' good performance, was positively related to engagement. May et al. (2004), particularly, found that supervisor relations, including a supervisor's support for solving work-related problems, developing new skills, participating in decision making, and expressing employees' feelings and needs, influenced psychological safety, which influences engagement. May et al.'s study revealed that supervisor relations demonstrated the strongest

effect on psychological safety than the other variables—coworker relations and coworker norms—included in the research.

Contrary to the research that shows the positive effect of supervisory support on engagement, in Menguc et al.'s (2013) research, supervisory support was not related to engagement. Furthermore, according to Menguc et al., the effects of supervisory support and feedback on engagement were shown to be different depending on the level of employees' perceptions of autonomy. More specifically, at high levels of perceived autonomy, supervisory support had a positive influence on work engagement, while at low levels of perceived autonomy, supervisory support did not predict work engagement.

Supervisor and coworker incivility. Civility and incivility relate to behavioral norms at work, indicated as the antecedents of engagement through psychological safety by Kahn (1990). Pearson, Andersson, and Porath (2000) indicated that civility involves behavior that is based on mutual respect that people show in how they treat others. According to Pearson et al. (2000), civility is critical for building a trustful, cooperative, and empathetic interpersonal relationship. On the other hand, incivility relates to indifference to others' feelings and rude behaviors.

Reio and Sanders-Reio (2011), employing Kahn's theory as a research framework, investigated the relationships between supervisor and coworker incivility and engagement by categorizing engagement as meaningfulness engagement, safety engagement, and availability engagement. Reio and Sanders-Reio's study revealed that supervisor and coworker incivility did not have significant effects on meaningfulness engagement after controlling for demographic variables such as age and gender. In contrast, in their study, supervisor and coworker incivility were shown to have negative effects both on safety engagement and availability engagement. More specifically, coworker incivility had a stronger influence on safety engagement than did

supervisor incivility, whereas supervisor incivility was shown to have a stronger effect on availability than coworker incivility.

Organizational Support

Regarding organizational support, research on antecedents of engagement focused on employees' perception of organizational climates. Fairness in organizational processes and policies was also identified as an important driver of engagement.

Organizational support. In investigating the effect of organizational support on engagement, researchers utilized variables such as perceived organizational support and supportive management psychological climate. Perceived organizational support refers to employees' belief that their organization values the contribution of its employees and is concerned about their well-being (Saks, 2006). Similarly, psychological climate refers to "how organizational environments are perceived and interpreted by their employees" (Brown & Leigh, 1996, p. 359). Supportive management psychological climate was included as one of the psychological climates, operationalized by Brown and Leigh (1996). According to Brown and Leigh, a supportive management style allows employees to make mistakes without negative consequences, and thus, the supportive management leads to psychological safety.

Based on SET, Saks (2006) found that perceived organizational support predicted both job engagement and organization engagement. Rich et al. (2010), whose research was built on Kahn's theory, also revealed that perceived organizational support had a positive relationship with job engagement. Shuck et al.'s (2011) research, drawn from Kahn (1990), conducted correlation analysis and tested the relationships between supportive management psychological climate and engagement and showed that supportive management psychological climate had a positive relationship with engagement.

Procedural justice. Predictability and consistency in procedures for rewards are important to foster engagement in that these aspects are related to psychological safety, which needs to be experienced for employees to be engaged at work (Kahn, 1990). Saks (2006), employing SET as his theoretical approach, tested the effect of procedural justice on job engagement and organization engagement and the study showed that procedural justice did not have an influence on job engagement but was positively related to organization engagement.

HR Practices

Some studies grounded in one of the three theoretical perspectives revealed the effects of HRD and HRM practice on engagement. More specifically, in terms of HRD practice, opportunities for learning and participation in HRD practices were shown to have significant relationships with engagement. When it comes to HRM practices, perceived HRM practices was proven to be effective.

Opportunities for learning. Researchers have consistently found that learning opportunities at work (including career development, training, and informal learning) increased the level of engagement. For example, using a qualitative research approach that included document analysis, interviews, and observations, Shuck, Rocco, and Albornoz (2011) revealed that opportunities for learning on the job or in employees' work roles (i.e., informal and incidental learning) facilitated engagement. Andrew and Sofian's (2012) study found that employee development predicted job engagement. Shuck, Twyford, Reio, and Shuck (2014) showed that an employee's perception of support for participation in HRD practices, such as career management programs and training opportunities, had positive relationships with cognitive engagement, emotional engagement, and behavioral engagement. Sarti (2014) found that learning opportunities which involve developing new skills and learning something new

through work had a positive effect on work engagement. In particular, the results of Sarti's study showed that learning opportunities had the strongest influence on work engagement among the job resources tested in the research (i.e., financial rewards, learning opportunity, decision authority, and supervisor and coworker support).

HRM practices. Researchers have argued that the entire HRM system, rather than individual HRM practices, influences work outcomes by influencing employees' reciprocity norms (Combs, Yongmei, Hall, & Ketchen, 2006; Rousseau & Greller, 1994). In this regard, a set of HRM practices connotes comprehensive human resource practices, including recruitment, rewards, employee development, and participation processes (Alfes, Truss, Soane, Rees, and Gatenby, 2013). Based on this argument, Alfes et al. (2013) examined the relationship between perceived HRM practices (which subsumes a selection process, training opportunities, rewards systems, career management, development opportunities, and feedback mechanisms) and engagement. The results of Alfes et al.'s study showed that perceived HRM practices had a significant effect on engagement.

Personal Resources

While much research paid attention to environmental factors that affect engagement, some studies revealed the effects of individual characteristics, such as core self-evaluations and physical, emotional, and cognitive resources, on engagement.

Core self-evaluations. From Kahn's (1990) perspective, core self-evaluations relate to confidence, a relatively stable personal characteristic (Rich et al., 2010). Core self-evaluations (or confidence) connote a person's appraisal of his or her capabilities, status, and self-consciousness (Kahn, 1990; Rich et al., 2010). According to Judge, Erez, Bono, and Thoresen (2003), people with high core self-evaluations tend to have a high level of adjustment and a

positive self-image. For this reason, core self-evaluations were assumed to affect psychological availability and, in turn, engagement. Several studies tested the effect of core self-evaluations on engagement and provided evidence of this effect. Rich et al. (2010) found that core self-evaluations were positively related to job engagement.

Physical, emotional, and cognitive resources. May et al. (2004) argued that most jobs require physical demands to some extent. Some jobs require emotional labor and cognitive demands. Based on Kahn's (1990) research, May et al. assumed that the possession of physical, emotional, and cognitive resources would result in a great deal of psychological availability and engagement. The results of the study conducted by May et al. demonstrated that an employee's physical, emotional, and cognitive resources were significantly related to his or her psychological availability. However, May et al.'s study also showed that in case where an individual had fewer resources, the level of engagement would increase when psychological availability was constant. Because this result is not consistent with Kahn's argument, the relationships need to be tested through further research.

Psychological Conditions

Although some researchers (e.g., Kahn, 1990; Saks & Gruman, 2014) argued the importance of psychological conditions in increasing engagement levels, not many studies examined the relationships between psychological conditions and engagement. Kahn (1990) proposed critical psychological conditions (i.e., psychological meaningfulness, safety, and availability) in his early work and argued that critical psychological conditions are necessary in the development of personal engagement at work. In other words, an employee must experience psychological meaningfulness, safety, and availability through their work in an organization in order to be engaged at work. In his ethnographic study, Kahn showed the critical role of the three

psychological conditions in the relationship between environmental factors and personal engagement and individual factors and engagement. Although Kahn emphasized the role of psychological states, little research investigated the effects of the psychological states.

In May et al.'s (2004) research, Kahn's argument was partially supported: psychological meaningfulness was shown to fully mediate the relationships between environmental factors and engagement, and psychological safety had a partial mediation effect. However, psychological availability did not mediate the relationship between individual characteristics and engagement. However, because of the lack of empirical evidence on those relationships, it is difficult to identify the role of psychological conditions in the development of engagement.

Summary: Findings of Research on Antecedents of Engagement

Research has proven that antecedents in the eight different categories (i.e., job characteristics, job demands, job resources, interpersonal relationships, organizational support, HR practices, personal resources, and psychological conditions) predicted engagement. Some of the factors were consistently found to be effective in promoting an employee's engagement level, whereas evidence related to other factors has been inconsistent in terms of the relationships between the factor and engagement. However, because of the lack of empirical studies, there is little knowledge about what predicts engagement. First, the effectiveness of each antecedent analyzed in this literature review has not been sufficiently examined, and thus, we do not have clear understanding of what factors are more important than the others to facilitate engagement. Moreover, some of the antecedents with inconsistent results might confuse researchers and practitioners as we cannot clarify factors needing to receive more attention for further research and HR interventions. Additionally, it is certain that research needs to test a variety of factors that have not been identified in the current engagement literature. In doing so, it is important to

choose a theoretical framework that is strong to explain engagement and relevant to research questions. This appropriate, rigorous theoretical framework will enable to formulate hypothesized antecedents necessary for a high level of engagement.

Guiding Framework for This Study

Many researchers (e.g., Christian, Garza, & Slaughter, 2011; Kim, Kolb, & Kim, 2013; Rich, Lepine, & Crawford, 2010; Rurkkuhm, 2010; Schaufeli & Bakker, 2004; & Shuck et al., 2013) have considered engagement at work as a motivational concept because engagement relates to the investment of personal resources into role performance (Shuck et al., 2013). Based on the researchers' viewpoint of engagement at work, this study combines representative motivational theories, which can be applied to an organizational context, to build a guiding framework of this study.

Motivational Perspectives of Engagement at Work

This study considers engagement as a motivational construct as many researchers do. Motivation is defined as a person's energized or activated state toward a goal, which leads the person to move to do something (Ryan & Deci, 2000), and it can be identified as the process by which one's behavior is initiated, energized, sustained, and directed (Jones, 1955). Shuck and Wollard (2010) argued that a motivational approach to engagement, by valuing the underlying psychological processes of motivation, can address the complexity of the ways that engagement develops. Motivational theories can provide implications for organizations in terms of interventions that need to be implemented and the environment that needs to be cultivated (Shuck and Wollard, 2010).

In general, many studies on engagement viewed the development of engagement as a motivational process. For example, Kahn (1990) indicated that engagement at work, the use of

an employee's full self in roles, can be a motivational construct addressing extrinsic and intrinsic motivation (Shuck, 2011). Schaufeli and Bakker (2004) viewed engagement as a motivational process, contending that "this process (the motivational process) links job resources via engagement with organizational outcomes" (p. 298). Salanova, Agut, and Peiro (2005) also perceived work engagement as "how employees react to these organizational practices together with their affective and motivational responses" (p. 1217). Bakker et al. (2008) defined work engagement as "a positive, fulfilling, affective-motivational state of work-related well-being" (p. 187). Rich et al. (2010) argued that "Kahn's (1990) engagement concept is motivational because it refers to the allocation of personal resources to role performance and also to how intensely and persistently those resources are applied" (p. 619). Rich et al. also contended that "engagement is a multidimensional motivational construct of the latent form with dimensions serving as indicators of the higher-order engagement concept" (p. 619). James et al. (2011) argued that "it is important to note that the study of employee engagement is rooted in a long and continuing tradition of research on work motivation based on such theories as Maslow (1970) and Havighurst (1954)" (p. 177). Christian et al. (2011) claimed that "work engagement is fundamentally a motivational concept that represents the active allocation of personal resources toward the tasks associated with a work role" (p. 91). Shuck et al. (2013) argued that "employee engagement is operationalized as a motivational state variable representing the manifestation of individual evaluations (cognitive and affective) regarding personal resource allocation toward work-related tasks" (p. 15).

Guiding Framework based on Relevant Motivation Theories

Saks (2006) and Meyer and Gagné (2008) pointed out the lack of a unifying framework in the literature on engagement to guide engagement research. It is important to explore guiding

frameworks that will help researchers better understand the antecedents of engagement and accumulate knowledge by conducting empirical studies based on a strong theoretical framework. Motivation theories can provide guidance regarding what needs to be considered in order to increase employees' engagement, which is an issue and an interest of both researchers and practitioners. More specifically, motivation theories addressing the influencing factors of work motivation can provide implications regarding what factors influence engagement at work and how they do so. Thus, this section addresses representative motivation theories relevant to work motivation that guided this study.

Maslow's (1943, 1970) hierarchy of needs. Maslow (1943, 1970) attempted to establish "a positive theory of motivation" (p. 35), focusing on human needs that drive human behavior. Maslow proposed the following basic human needs: physiological needs, safety needs, belongingness and love needs, esteem needs, and the need for self-actualization. Maslow (1943) argued that these needs are hierarchical: Lower needs are related to physiological needs and safety, and higher needs involve affiliation, esteem, and self-actualization. More specifically, physiological needs, such as needs for eating, sleeping, and breathing, are fundamental needs. According to Maslow, physiological needs serve as "channels for all sorts of other needs" (p. 36) and are "the most prepotent of all needs" (p. 36). Safety needs involve human beings' preference for stable, familiar, and known states and include security, stability, dependency, protection, freedom from fear, freedom from anxiety and chaos, the need for structure/order/law/limits, and strength in the protector. Belongingness and love needs connote the hunger for "affectionate relations with people in general, namely, in *one's* [*italic was added instead of his*] group or family" (p. 43). Esteem needs relate to "a need or desire for a stable, firmly based, usually high evaluation of a person *his or herself* [*italic was added instead of themselves*], for self-respect, or

self-esteem, and for the esteem of others" (p. 45). These needs are categorized into two subsidiary sets: (a) "the desire for strength, for achievement, for adequacy, for mastery and competence, for confidence in the face of the world, and for independence and freedom" (p. 45) and (b) the desire for reputation or prestige, status, fame and glory, dominance, recognition, attention, importance, dignity, or appreciation (p. 45). The need for self-actualization represents a "desire for self-fulfillment, namely, to the tendency for *a person* [*italic was added instead of him*] to become actualized in what *the person* [*italic was added instead of he*] is potentially" (p. 46). In Maslow's concept, self-actualization connotes the full development of a person's potentials or capabilities. This need shows the greatest variations in people's expressions of the need according to individual differences.

According to Maslow (1970), the main principle of human motivation is "the arrangement of basic needs in a hierarchy of less or greater priority or potency" (p. 59). He contended that certain unsatisfied needs initiate a person's action to satisfy the needs. In this sense, the gratification of needs is the important concept of Maslow's hierarchy of needs in that this satisfaction means the emergence of other needs. For the lower-order needs, once the needs have been met, they cannot arouse a behavior; instead, the needs at the next level of the hierarchy emerge as dominant needs, which motivate a person. In contrast, higher-order needs are not diminished even if they are satisfied to some degree, and, thus, they can continue to facilitate one's behavior. Maslow claimed, however, that the higher needs cannot be motives for action unless lower-order needs are met.

Maslow's (1970) perspective employed hierarchy of needs as a basis for the distinction between extrinsic and intrinsic rewards. According to Maslow, extrinsic rewards satisfy lower-order needs, whereas intrinsic rewards satisfy higher-order needs. However, the same reward can

serve to satisfy more than one need. For example, monetary rewards can satisfy existential needs—lower-order needs—and lead to a sense of self-esteem or self-actualization—higher-order needs (Guzzo, 1979).

Deci's (1971) Intrinsic Motivation. Motivation can be conceptualized as extrinsic or intrinsic motivation (Cerasoli & Ford, 2014; Guzzo, 1979; Lawler, 1973; Pinder, 2011). De Charms (1968) first proposed the concepts of external and internal locus of causality in terms of human motivation, and Deci (1971) expanded De Charms' concepts to intrinsic and extrinsic motivation. Intrinsic motivation is defined as performing an activity for the sake of its inherent satisfaction, whereas extrinsic motivation refers to performing an activity to gain externally provided rewards (Deci, 1975; Ryan & Deci, 2000). According to Deci (1971), the concepts of and studies on intrinsic motivation can be categorized into three types of approaches. The first approach to intrinsic motivation is *optimal incongruity* (e.g., Festinger, 1957; Hebb, 1946; Hunt, 1965), which argues that people are motivated to behave in order to decrease incongruity or dissonance between stimuli. To reduce incongruity, people attempt to conquer challenges. Another approach to intrinsic motivation is *reduction of uncertainty* (e.g., Kagan, 1972). People recognize uncertainty when their cognitive structures are not compatible to other cognitive structures or their experience and behavior. To reduce uncertainty, not only do people attempt to conquer challenges, they also try to predict the future by gathering information. The last approach is *competence and self-determination*, on which Deci focused. Deci (1971) claimed that people are motivated to act in order to feel a sense of competence and self-determination. For this reason, people in a challenging situation seek an optimal level of challenge that they are able to conquer.

While scientific management (Taylor, 1911) based on behaviorism emphasized extrinsic rewards contingent upon performance, Deci (1971) argued that people can engage in activities without extrinsic rewards because the consequences of the activities are internally rewarding. Deci asserted that intrinsic motivation is a basic motivational propensity that becomes a primary motivator of behavior unless other factors interrupt the intrinsic motivational process. According to Deci, a reward is an internal state that results from a behavior. In intrinsic motivation, a reward is the feeling of competence and self-determination, and the needs for competence and for self-determination remain even after one's goal is attained and the behavior is rewarded. In contrast, the needs satisfied by extrinsic rewards will be reduced once the behavior is rewarded. Deci (1971), thus, asserted that intrinsic motivation is more sustainable than extrinsic motivation and focused on the ways to enhance intrinsic motivation.

From Deci's point of view, people, by nature, seek challenging stimuli and attempt to reduce the incongruity between their beliefs in their capabilities and the environment surrounding them, and this tendency is related to higher-order needs satisfaction. In this sense, people are intrinsically motivated to satisfy their inherent needs for competence and self-determination in relation to their environment. Thus, in order to facilitate intrinsic motivation, the opportunities to conquer challenges in an environment need to be provided. More specifically, Deci (1971) suggested several interventions that can be used to increase intrinsic motivation at work. Job enrichment, for instance, enhances intrinsic motivation by providing employees with challenging, resourceful, and creative tasks. Also, an organization's respect for the employees' autonomy, demonstrated in such ways as a less hierarchical organizational structure, reduced extrinsic control, and psychological empowerment by supervisors, can satisfy their needs for self-determination, which increases intrinsic motivation. Providing feedback,

especially positive information, on an individual's performance can stimulate the person's desire for competence. In terms of task difficulty to facilitate intrinsic motivation, Deci argued that a goal must be valuable to a person and needs to be established to an optimal degree so that the person is motivated to conquer the challenge. Furthermore, Deci's assumption that human beings have sustainable motivation for competence and self-determination suggests that an organization should support employees' learning and development to enhance intrinsic motivation.

Regarding extrinsic motivation, Deci (1971) argued that how a payment system is administered is more important than the amount of money and that a reward itself can lead to either intrinsic or extrinsic motivation depending on what needs are fulfilled by the reward. For example, financial rewards can serve as extrinsic rewards if they satisfy a person's lower-order needs, such as physiological needs. In contrast, the same rewards can be intrinsic rewards if they satisfy one's higher-order needs, such as a sense of achievement. Deci (1975) claimed that extrinsic rewards can be effective but decrease intrinsic motivation by interrupting the activation of intrinsic motivation. He also contended that insufficient extrinsic rewards are likely to increase intrinsic motivation if a person feels responsibility for the outcomes of his behavior. Deci (1971), however, admitted that in certain situations, the use of extrinsic rewards is inevitable; specifically, in the case that a person does not have any interest in a given task itself, extrinsic rewards should be administered to help the person complete the task. Also, he asserted, based on Maslow's need-hierarchy theory, that one's satisfaction with pay is important in that it relates to lower-order needs satisfaction.

When it comes to contingent reward, which many organizations employ to motivate their employees, Deci suggested the following ways to administer a contingent reward system. A standard for job performance must be clear and communicated to employees. Employees'

behaviors must be monitored, and rewards need to be provided based on the ways that a job is done as well as the results accomplished. Although Deci pointed out that contingent payment can be a more effective way to administer extrinsic rewards by increasing extrinsic motivation effectively, he argued that a contingent payment system is not the most desirable way to motivate employees. Because people generally learn more easily about obtaining rewards rather than enjoying the activity itself, contingent extrinsic rewards are likely to decrease intrinsic motivation and promote extrinsic motivation.

Because of the negative influences of contingent rewards on intrinsic motivation, Deci argued that a noncontingent payment system, rather than contingent rewards, needs to be used in order to attract people to their tasks. In addition, in order for extrinsic rewards not to decrease intrinsic motivation, extrinsic rewards should not be provided beyond the extent to which an employee is satisfied with them. In the use of rewards, Deci asserted that performance and intrinsic motivation must be distinguished. In other words, this argument implies that to improve performance, an organization can employ extrinsic and intrinsic rewards based on the effectiveness of these rewards on performance. However, if an organization is concerned about developing employees' intrinsic motivation rather than promoting performance, it needs to pay attention to a person's need for the interaction between intrinsic and extrinsic rewards on intrinsic motivation.

Porter and Lawler's (1968) Expectancy Theory of Motivation. Although Deci (1971) argued that extrinsic motivation decreases intrinsic motivation, some theories of work motivation assume that the effects of intrinsic and extrinsic rewards are additive. Porter and Lawler (1968), whose study on work motivation has significantly influenced research and practice with respect to how to motivate employees, claimed that people are motivated to obtain both intrinsic and

extrinsic rewards, and one's satisfaction with rewards is the sum of the effects of intrinsic and extrinsic rewards unless the rewards are administered unfairly. Porter and Lawler (1968) conducted a study on the relationship between managers' job attitude—belief and evaluative cognitions—and job behavior—the effectiveness of their performance, focusing on the effect of pay on performance. Porter and Lawler emphasized the importance of employees' cognitive aspect, which initiates and directs their job-related behavior in understanding human behavior in organizations. The sample for the study consisted of 635 managers in seven organizations—state government and business organizations in the industries of manufacturing and utility. Because Porter and Lawler's study was a correlation study, which examines the relationships between variables, they did not intend to provide knowledge on causality between variables.

To guide their study, based on expectancy theory of motivation, Porter and Lawler (1968) proposed a model that illustrates the relationships between rewards, human effort, performance, and satisfaction. In this conceptual model, the following variables were included to explain these relationships: value of reward, effort-reward probability, effort, abilities and traits, role perceptions, performance, rewards, perceived equitable rewards, and satisfaction. To be specific, value of reward refers to "the attractiveness of possible outcomes to individuals" (p. 16). Effort-reward probability involves "an individual's expectations concerning the likelihood that given amounts of rewards depend upon given amounts of effort on his or her part" (p. 19). Effort relates to mental or intellectual effort and means "the extent to which an individual concentrates on a given activity in the application of his thinking" (p. 21). Abilities and traits refers to "relatively stable, long term individual characteristics that represent the individual's currently developed power to perform" (p. 22). Role perceptions connote the direction of effort and refer to "the kinds of activities and behaviors the individual believes he or she should engage in to

perform his or her job successfully" (p. 24). Performance involves "how much successful role achievement (behavior) is accomplished" (p. 25). Rewards are defined as "desirable outcomes or returns to a person that are provided by himself or by others" (p. 28). According to Porter and Lawler (1968), rewards must have positive values to individuals and both intrinsic and extrinsic outcomes are considered as rewards. Porter and Lawler argued that an individual's perception of the degree of connection between performance and rewards are important to understand the extent to which certain rewards predict performance. Perceived equitable rewards involve "the level or amount of rewards that an individual feels he or she should receive as the result of a given level of performance" (p. 29). In other words, this variable relates to one's perception of the fairness as to the amount of rewards he or she receives. Satisfaction refers to "the extent to which the rewards actually meet or exceed the perceived equitable level of rewards" (p. 30). The theoretical model employed in Porter and Lawler's study is depicted in Figure 2.1.

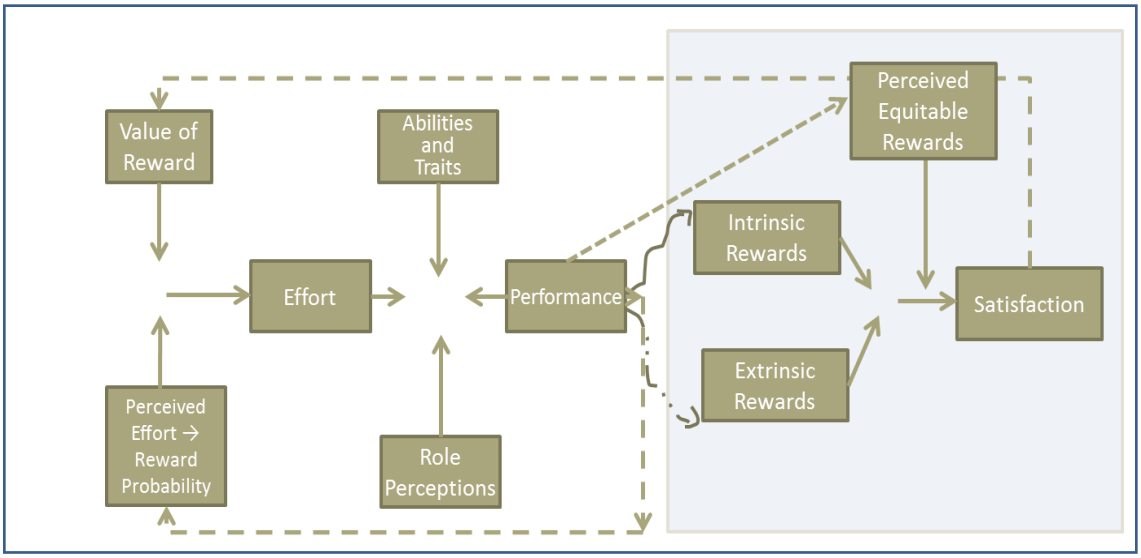


Figure 2.1. Theoretical Model of Porter and Lawler's (1968) Study

Results of the studies showed that the following relationships in the theoretical framework were significant. First, there existed a strong, positive relationship between rewards

given depending on job performance and effort. Managers who perceived pay as a satisfier showed greater motivation of job performance. Value of reward and perceived effort-reward probability combine to influence effort. Second, ability and role perceptions as well as effort influence performance. Role perception significantly moderated the relationship between effort and job performance. Third, pay contingent upon performance interacted with managers' effort in predicting managers' need fulfillment. The relationship between performance and need fulfillment was stronger than the relationship between effort and need fulfillment. In addition, the relationship between performance and rewards were significant. The results in terms of performance-attitudes relationships by type of need revealed that the needs for autonomy and self-actualization were shown to have strong differences between high and low performance groups. High levels of effort and performance predicted high level of pay satisfaction under the condition of contingent payment, and performance is positively related to expected equitable rewards. Lastly, when it comes to the relationships between rewards and satisfaction, the wavy line for extrinsic rewards includes both contingent and non-contingent extrinsic rewards systems. The semi-wavy line regarding intrinsic rewards indicates that a direct relationship exists between performance and intrinsic rewards.

Based on the results of their study, Porter and Lawler (1968) argued that organizations need to explore the ways to establish direct relationships between rewards and fulfillment (i.e. satisfaction) and between rewards and performance in order to maximize the effectiveness of rewards and increase employee motivation of performance. To build the direct relationships, Porter and Lawler suggested extrinsic rewards should be provided contingent upon performance. In terms of intrinsic rewards that have direct relationships with performance, Porter and Lawler contended that jobs need to be designed to contain variety and challenge for those who create

effective performance. By doing so, organizations can improve performance by facilitating expectancy of motivation. Additionally, equity in rewards need to be considered in implementing rewards practice in that equity in rewards moderates the relationship between rewards and satisfaction.

In summary, Porter and Lawler's expectancy theory of motivation focuses on the role of extrinsic rewards in improving job performance by facilitating an employee's expectation about rewards. In particular, Porter and Lawler emphasizes a contingent pay policy and practice in organizations, because their study showed that high performers were satisfied with a pay system that is tied to performance. Equity in rewards based on performance is also important factor that interacts with rewards in predicting satisfaction, and ultimately, performance. In addition, Porter and Lawler's expectancy theory argues both extrinsic and intrinsic rewards influence satisfaction with rewards and performance. Lastly, the expectancy theory suggests that extrinsic rewards need to satisfy higher-order needs, such as autonomy and self-actualization.

Implications of the Foundational Theories for This Study

From the theories chosen as foundational theories undergirding the theoretical framework of this study, several implications are suggested for hypothesis formulation concerning antecedents of job engagement. First, human needs are important in understanding job engagement. Maslow's (1943) hierarchy of needs theory provides knowledge regarding what needs must be satisfied to initiate, maintain, and sustain human behavior. Deci's (1971) intrinsic motivation focuses on needs for competence and self-determination and explains how and why human behavior is directed based on these needs. Porter and Lawler's (1968) expectancy theory of motivation suggests satisfaction and fulfillment as the drivers of performance and determinants of effective rewards. For this reason, this study includes psychological states in its

hypotheses to investigate the rewards (i.e., environmental factors)-psychological needs-job engagement relationship.

Second, a balanced approach to job engagement, paying attention to both intrinsic and extrinsic rewards, is helpful to better understand the mechanism of and predictors of engagement at work. Considering Maslow's and Deci's arguments that higher-order needs satisfaction sustains human behavior, organizations need to provide intrinsic motivations to foster engagement. However, according to Porter and Lawler, financial rewards (i.e., pay), especially contingent rewards, are effective in promoting employees' motivation for good performance. Deci also admitted the reality of organizations, in which organizational goals are extrinsically imposed on employees, and indicated that extrinsic motivation needs to be employed depending on situations. Additionally, Deci argued that the purpose of the provision of rewards—development of intrinsic motivation or improvement of performance—needs to be clarified in administering rewards systems. Because job engagement relates to role performance at work, the purpose of rewards to foster job engagement lies in performance improvement rather than development of intrinsic motivation. For this reason, both intrinsic and extrinsic motivation needs to be considered to enhance the engagement level at work. Therefore, this study includes both intrinsic and extrinsic rewards and examines the effects of these rewards on job engagement.

Development of Hypotheses for This Study

Despite the importance of engagement in organizational performance and employee well-being, little is known about factors that influence the level of engagement (Saks, 2006; Shuck & Wollard, 2010; Kim et al., 2013). In addition, although Kahn emphasized the mediating role of psychological conditions, most of the empirical studies conducted to this point focused on the

direct effects of environmental factors on engagement. To address the gap in the literature, this study aims to expand and test Kahn's theory of engagement by grounding the theory in motivational theories. More specifically, this study examines the relationships between environmental factors and job engagement with the mediating role of psychological states in those relationships.

In selecting environmental factors to test, this study categorized the factors into job elements and work context. In the job design literature, it has been argued that the role of job characteristics is different from that of work context, and thus, the effects of job characteristics and work context on work outcomes and motivational constructs, need to be tested together in order to better understand motivators at work. Empirically, the results of Ferris and Gilmore's (1984) study revealed that job characteristics and work context had an interaction effect in the relationship between job design and motivational constructs. In addition, Shalley, Gilson, and Blum (2009) distinguished the roles of work context and job complexity in the relationship between personal growth needs strength and creative performance and showed a low correlation between job complexity and work context. Moreover, as discussed earlier, because this study employs motivational theories—Maslow (1943, 1970), Deci (1971), and Porter and Lawler (1968)—as the foundations of the study, when selecting environmental factors, it attempts to maintain a balanced viewpoint between intrinsic and extrinsic motivation. That is, extrinsic and intrinsic rewards are both included in hypothesizing factors of engagement with psychological states.

Below, relevant theoretical and empirical work on the antecedents of job engagement with the role of critical psychological conditions are discussed, and the hypotheses of the present study are developed.

Summary of Kahn's Theory of Engagement at Work

This section summarizes the relationships between environmental factors, psychological states, and engagement proposed by Kahn's grounded theory of personal engagement at work (1990). On the basis of Kahn's theory, antecedents of job engagement can be divided into environmental factors (distal factors) and psychological states (proximal factors). Kahn argued that task- and role-related factors, supportive social systems, and personal characteristics influence engagement at work. Kahn also emphasized that the effects of those predictors on engagement are mediated by psychological meaningfulness, safety, and availability. More specifically, task characteristics, role characteristics, and work interactions are the factors of engagement that influence psychological meaningfulness, while interpersonal relationships, group and intergroup dynamics, management style and process, and organizational norms are the drivers of engagement at work that affect psychological safety. Self-consciousness, physical and emotional energy, and security, related to psychological availability, are also the factors that affect engagement. Because the focus of this study is on the effects of environmental factors rather than those of individual characteristics, psychological availability and its antecedents are not addressed in this section.

Environmental Factors and Job Engagement

To develop hypotheses of this study, I first considered focal antecedents from Kahn's theory of engagement. In addition, because this study attempts to expand Kahn's theory by grounding it motivational theories, I also considered motivational factors in literature when selecting environmental factors to test. In the present study, job autonomy, financial rewards, learning culture, and procedural justice were chosen as the factors of job engagement. From Kahn's (1990) perspective, job autonomy and financial rewards can be considered as job

elements, which influence psychological meaningfulness, while learning culture and procedural justice can be viewed as work context, which affects psychological safety. From Deci's (1976) point of view of intrinsic motivation, job autonomy and learning culture can be perceived as intrinsic motivators, whereas financial rewards and procedural justice can be considered as extrinsic motivators.

Job autonomy. Job autonomy is defined as "the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out" (Hackman & Oldham, 1976, p. 258). Similarly, drawing part of his work from Hackman and Oldham's (1976) model, Kahn (1990) argued that tasks providing autonomy with clear goals and procedures increase the engagement level. Ryan and Deci (2000) argued that autonomy, as a basic human need, is a critical factor in developing and promoting intrinsic motivation. Deci (1975) contended that self-determination, the satisfaction with autonomy, is necessary to develop the need for self-actualization.

As empirical evidence, job autonomy had a positive relationship with motivational constructs in previous studies. For example, job autonomy predicted intrinsic motivation and affective commitment (Galletta & Portoghese, 2011). In Spector's (1986) meta-analysis on job autonomy that examined 88 studies, job autonomy and control showed moderate relationships with job satisfaction, commitment, involvement, and motivation. Similarly, Humphrey, Nahrgang, Frederick, and Morgeson (2007) conducted meta-analytic research regarding the effect of job autonomy on work outcomes, using 175 previous studies. In Humphrey et al.'s study, job autonomy was positively related to job satisfaction, organizational commitment, job involvement, internal work motivation, and performance but negatively related to absenteeism and burnout. More specifically, decision-making autonomy had a strong correlation to job

satisfaction, whereas work scheduling and work methods autonomy showed weak or moderate correlation to job satisfaction.

Moreover, some empirical studies on work engagement (e.g., Mauno, Kinnunen, & Ruokolainen, 2007; Salanova et al., 2005; Schaufeli & Bakker, 2009) treated job autonomy (or job control), as a first-order factor, in the category of job resources to test the effect of job resources on engagement. Research has revealed the positive effect of job resources on work engagement. Thus, job autonomy as an intrinsic reward is assumed to have a positive relationship with engagement in this study.

Financial Rewards. Financial rewards, extrinsic motivators according to Deci (1975), have received a great deal of attention from researchers in the fields of management and human resource management. According to Malhotra, Budhwar, and Prowse (2007), extrinsic rewards consist of pay satisfaction, satisfaction with fringe benefits, promotional opportunities, physical working conditions, and extrinsic social rewards. In the present study, financial rewards involve satisfaction with pay and benefits in that those components relate to job elements and are the most representative types of financial rewards. More specifically, financial rewards subsume three dimensions (satisfaction with the current pay level, benefits, and raises) out of five pay satisfaction dimensions proposed by Heneman and Schwab (1985). Because the other dimensions (satisfaction with pay structure and administration) greatly overlap with procedural justice, they were not adopted for this study.

Many studies (e.g., Eby, Freeman, Rush, & Lance, 1999; Grover and Crooker, 1995; Malhotra et al., 2007; Mottaz, 1988; Tsai, Wu, Yvonne Yen, Chin-Ming, & Ing-Chung, 2005) investigated the effects of monetary rewards and benefits on motivational constructs and found positive relationships between those extrinsic rewards and work motivation. However, Deci

(1971), who focused on developing intrinsic motivation, argued that extrinsic rewards can decrease intrinsic motivation by interrupting the activation of intrinsic motivation. This argument derived from the perspective that extrinsic rewards relate to only lower-order needs satisfaction, such as physiological needs. In contrast, Porter and Lawler (1968) argued that one's satisfaction with rewards is the sum of the effects of intrinsic and extrinsic rewards. For this reason, Porter and Lawler claimed that the important aspect in the use of rewards is whether or not the rewards can satisfy an employee's expectation about outcomes and incentives resulting from his or her effort rather than whether the rewards are related to intrinsic or extrinsic motivation. In particular, Porter and Lawler's perspective of financial rewards is not limited to lower-order needs satisfaction; instead, they believed that financial rewards also involve higher-order needs (i.e., needs for achievement) in that by gaining financial rewards, employees can feel that their effort and performance are appreciated by their organizations. Saks (2006), based on Kahn's argument, posited that rewards and recognition would be positively related to engagement, indicating that external rewards can lead to a sense of return on investment. Schaufeli and Bakker (2004), who viewed engagement as a motivational process, also claimed that extrinsic rewards could be included in job resources that facilitate engagement at work.

The results of empirical studies on the effects of extrinsic rewards on engagement have been contradictory in the engagement literature. For example, in Saks's (2006) research, rewards and recognition were not shown to have an influence on engagement. Sarti (2014) found that financial rewards did not affect engagement, controlling for other variables such as learning opportunity, supervisor support, and performance feedback. Hulkko-Nyman, Sarti, Hakonen, and Sweins (2012) demonstrated that monetary and material rewards (i.e., benefits) did not affect engagement of the workers at elder-care organizations in Finland and Italy, with one exception

of Italian sample that was influenced by material rewards. On the other hand, according to Koyuncu, Burke, and Fiksenbaum (2006), women managers and professionals at a bank in Turkey were shown to be more engaged at work when rewards and recognition were offered. Alfes, Truss, Soane, Rees, and Gatenby (2013) demonstrated that perceived HRM practices, including rewards systems as well as career management and development opportunities, had a significant effect on engagement. Hulkko-Nyman et al. (2012) contended that effects of monetary rewards could be different depending on cultural contexts and types of organizations from which samples were drawn. Thus, more empirical studies need to be conducted to explore the effects of extrinsic rewards on engagement in various contexts. Despite the inconsistency in the findings of the previous studies, this study, based on Porter & Lawler's (1968) work, assumes the positive relationship between financial rewards and job engagement.

Learning culture. A learning culture in organizations is perceived as one of the essential contextual factors that promote job satisfaction (Watkins & Marsick, 2003) and organizational commitment (Joo & Lim, 2009). Garvin (1993) defined a learning culture as "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights" (p. 80). According to Egan, Yang, Bartlett (2004), organizational learning culture represents structures and processes facilitating learning within organizational context (2004). Watkins and Marsick (1993, 1996) proposed a learning organization model consisting of seven dimensions: continuous learning and inquiry and dialogue at an individual level; team learning and empowerment at a group level; and an embedded system, system connection, and strategic leadership at an organizational level. These components can also be divided into two parts—people and structure. The people level includes creating continuous learning opportunities, promoting inquiry and dialogue, encouraging collaboration and team

learning, and empowering people toward a collective vision. On the other hand, the structural level is composed of connecting the organization to its environment, establishing systems to capture and share learning, and providing strategic leadership for learning (Yang, 2003).

According to Deci (1971), organizations should support employees' learning and development to enhance intrinsic motivation. McClelland (1965) argued that in order to facilitate a person's motive for achievement, it is important to nurture favorable work conditions with warmth, honesty, and respect for employees' competence and autonomy and create a supportive environment providing job resources and the opportunities for learning. As such, a learning culture, which involves a favorable work condition and supportive environment for learning and development, is associated with intrinsic motivation in that it satisfies employees' higher-order needs, such as self-actualization, competence, and self-determination. Empirically, HRD research (e.g., Chang & Lee, 2007; Egan et al., 2004; Joo, 2010; Joo & Lim, 2009) has demonstrated the effects of learning culture on motivational constructs, such as job satisfaction and organizational commitment. Nontheless, because little research has been carried out regarding the relationship between learning culture and engagement, the evidence on the relationship needs to be provided.

Procedural justice. Porter and Lawler's (1968) expectancy theory of motivation emphasized the importance of equity in rewards, focusing on the effect of pay satisfaction on needs satisfaction. In the literature on organizational behavior as well as organizational justice, the fairness and equity in processes and outcomes have been described as influencing factors of motivation. Procedural justice connotes the fairness in the means (Colquitt, 2001) and processes that determine outcomes (Cohen-Charash & Spector, 2001; Folger & Cropanzano, 1998; Moliner, Martinez-Tur, Peiro, Ramos, & Cropazano, 2008). Procedural justice mainly involves a

compensation process, which relates to extrinsic motivators and fairness embedded in work context. Procedural justice can be considered as a factor of engagement in that it promotes job resources that affect engagement (Inoue et al., 2010). The significant effects of procedural justice on motivational constructs have been proved in motivational research. For example, in their meta-analytic test of 183 quantitative studies on organizational justice, Colquitt, Conlon, Wesson, Porter, and Ng (2001) demonstrated that procedural justice had unique effects, with high magnitude, on the motivation indicators—job satisfaction and organizational commitment.

However, few empirical studies have been conducted on the relationship between procedural justice and engagement, as Inoue et al. (2010) and Saks (2006) pointed out. Saks (2006) revealed that procedural justice had a significant effect on organizational engagement. Karatepe's (2011) study of hotel employees in Nigeria found that procedural justice had a positive relationship with engagement at work, when controlling for several demographic variables (i.e., hotel category, gender, and organizational tenure). In contrast, in their study of 243 workers from a manufacturing factory in Japan, Inoue et al. (2010) found that while the relationship between procedural justice and engagement was significant when being mediated by total worksite support, there was no significant direct effect of procedural justice on work engagement. Thus, the effect of procedural justice on engagement needs to be examined in future investigations.

Based on the discussion above, this study proposes the following hypotheses:

Hypothesis 1A: Job autonomy is positively related to job engagement.

Hypothesis 1B: Financial rewards are positively related to job engagement.

Hypothesis 1C: Learning culture is positively related to job engagement.

Hypothesis 1D: Procedural justice is positively related to job engagement.

Job Elements and Psychological Meaningfulness

Kahn (1990) defined *psychological meaningfulness* as "a feeling that one is receiving a return on investments of one's self in a currency of physical, cognitive, or emotional energy" (p. 704). Psychological meaningfulness of work influences the level of engagement (Farlie, 2011; May et al., 2004; Soane et al., 2013). Kahn's notion of psychological meaningfulness was based on Hackman and Oldham's (1980) concept of experienced meaningfulness of work in their job characteristics model. According to Hackman and Oldham (1976), meaningfulness of work represents "the degree to which the individual experiences the job as one which is generally meaningful, valuable, and worthwhile" (p. 256). It is important to note that according to the job characteristics model, five job core dimensions—skill variety, task identity, task significance, autonomy, and feedback—influence critical psychological states (i.e., experienced meaningfulness of the work, experienced responsibility for outcomes of the work, and knowledge of the actual results of the work activities), and, in turn, the psychological states lead to work outcomes, including intrinsic motivation. In particular, regarding the effects of the job characteristics on meaningfulness, research (e.g., Fouché, Rothmann, & van der Vyver, 2017; Janik & Rothmann, 2015) have demonstrated that the variable of job characteristics as a whole set of job design was positively associated with meaningfulness of work. In terms of the relationship between each job dimension and meaningfulness, Hackman and Oldham proposed and revealed that meaningfulness was influenced by three job dimensions—skill variety, task identity, and task significance. In contrast, Johns, Xie, and Fang (1992) showed that all of the five core dimensions had impacts on meaningfulness. Similar to Johns et al. (1992), Fried and Ferris (1987) found that not only skill variety, task identity, and task significance but also autonomy and feedback had associations with meaningfulness.

In the engagement theory, psychological meaningfulness is concerned with work elements (Farlie 2011; Kahn, 1990) that lead to incentives or disincentives to engagement (Kahn, 1990). To be specific, task characteristics, role characteristics, and work interactions were proposed as the factors of engagement that influence psychological meaningfulness (Kahn, 1990). May et al. (2004), who tested Kahn's theory of engagement, showed that job enrichment (i.e., job characteristics) and work role fit had significant effects on meaningfulness. However, the effect of job autonomy, a critical element of task characteristics, on engagement needs to be tested as there is little research concerning the relationship. In addition to job characteristics, Saks (2006) hypothesized that rewards and recognition drive engagement in that they facilitate one's sense of return on investment in self-in-role, which involves psychological meaningfulness. This is based on Kahn's (1990) argument that work elements resulting in incentives to engagement are related to psychological meaningfulness. In other words, because financial rewards serve as incentives resulting from one's job performance, which facilitate one's sense of return on investment of his or her effort in role performance, they can be assumed as job elements related to extrinsic rewards that affect psychological meaningfulness.

Based on the discussion above, this study posits the following hypotheses:

Hypothesis 2A: Job autonomy is positively related to psychological meaningfulness.

Hypothesis 2B. Financial rewards are positively related to psychological meaningfulness.

Work Context and Psychological Safety

Psychological safety is defined as "feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career" (Kahn, 1990, p. 708). Psychological safety is experienced when employees perceive their environment is so trustful that they do not have to take risks due to their engagement (Kahn, 1990). Psychological safety is

associated with the nature of social system that is characterized as “predictable, consistent, clear, and nonthreatening” (Kahn, 1990, p.708). Kahn proposed interpersonal relationships, group and intergroup dynamics, management style and process, and organizational norms as drivers of engagement at work. In May et al.’s (2004) empirical study, supportive supervisor and rewarding co-worker relations are positively related to psychological safety.

On the basis of Kahn’s (1990) suggestion that organizational norms and group dynamics are the drivers of psychological safety, a learning culture, which involves a shared belief among organizational members about the importance of learning for an organization’s adaptation to the environment, can be considered to be a potential antecedent of psychological safety. Drawn from Kahn’s theory of engagement, Edmondson (2004), who conducted a series of studies on psychological safety and learning in organizations, conceptualized psychological safety as “taken-for-granted beliefs about how others will respond when one puts oneself on the line, such as asking a question, seeking feedback, reporting a mistake, or proposing a new idea” (p. 4). Edmondson (2004) hypothesized the following antecedent conditions to psychological safety at a team level: leader behavior—accessibility, inviting input, and modeling openness and fallibility, trusting and respectful interpersonal relationships, opportunities for practice, organizational context support, and group dynamics. These antecedents have similarities to the concept of learning organization (i.e., learning culture), which involves a supportive environment for learning and development.

Regarding empirical evidence, only a small number of empirical studies have been conducted with respect to psychological safety in the engagement literature, and learning culture has not been investigated in terms of its relationships with psychological safety and engagement. Although the topic was not related to engagement, some studies tested the relationship between

psychological safety and learning behavior, similar to learning culture to some extent. For instance, Edmondson's (1999) research on psychological safety and learning behavior at the team level revealed that psychological safety was positively related to team learning behavior in organizational settings. Carmeli and Gittell (2009) found that psychological safety affected learning from failures. Based on those findings, it can be assumed that psychological safety has a positive relationship with learning at the individual, team, and organization levels. However, while Edmondson (1999) and Carmeli and Gittell (2009) tested learning behavior as the consequence of psychological safety, this study assumes a learning culture as the potential antecedent of engagement; This is because based on Kahn's (1990) argument, this study examines the relationship between learning culture, rather than learning behavior, and psychological safety.

Moreover, although it is unknown about the effect of procedural justice on psychological safety in the engagement literature, considering Kahn's concept of psychological safety characterized by predictability and consistency resulting from managerial process and organizational norms, procedural justice can be viewed as one of the factors that influence psychological safety (Saks, 2006). Thus, this study examines the relationships of learning culture and procedural justice with psychological safety.

Based on the discussion above, this study establishes the hypotheses related to antecedents of psychological safety:

Hypothesis 2C: Learning culture is positively related to psychological safety.

Hypothesis 2D: Procedural justice is positively related to psychological safety.

Psychological States and Job Engagement

Kahn (1990) and Hackman and Oldham (1976) both indicated the importance of psychological states in the development of engagement and internal motivation, respectively. As discussed earlier, in Kahn's (1990) early work, psychological states were identified as proximal factors of engagement, while environmental factors were as distal factors. Hackman and Oldham demonstrated that two psychological conditions—experienced meaningfulness and responsibility—accounted for about 51% variance of internal motivation. In their meta-analytic research on job characteristics model, Fried and Ferris (1987) found that experienced meaningfulness and responsibility had much stronger correlations with internal work motivation than do any of the five core job dimensions. The empirical evidence suggests that significant relationships exist between psychological states and motivational constructs.

In the literature on engagement, May et al. (2004) tested the relationships between psychological states and engagement at work, proposed by Kahn (1990), and revealed that psychological meaningfulness and safety had positive relationships with engagement. Similar to Kahn's concept of psychological meaningfulness, researchers have employed meaning of work or meaningful work, which involves people's evaluation that their work is significant, worthwhile, and has positive meaning (Rosso, Dekas, & Wrzesniewski, 2010), and investigated its effect on engagement. Some of the studies, such as Olivier and Rothmann (2007), Stringer and Broverie (2007), Steger, Littman-Ovadia, Miller, Menger, and Rothmann, (2013), found that meaningful work significantly predicted engagement. In contrast, other studies, including Rothmann and Hamukang'andu (2013) and Van Zyl, Deacon, and Rothmann (2010) showed non-significant effect of psychological meaningfulness on engagement. Despite the inconsistent results of the relationship between psychological meaningfulness and engagement, this study

assumes the positive relationship between the two variables based on Kahn's and May et al.'s empirical work. In addition, when it comes to the effect of psychological safety on engagement, there is a dearth of research in the engagement literature. Thus, on the basis of Kahn (1990) and May et al. (2004), this study hypothesizes the positive relationship between psychological safety and job engagement.

Based on the discussion above, the following hypotheses are developed:

Hypothesis 3A: Psychological meaningfulness is positively related to job engagement.

Hypothesis 3B: Psychological safety is positively related to job engagement.

The Mediating Role of Psychological States

Theoretical and empirical work in the literature on work motivation emphasizes the role of psychological states, related to human needs satisfaction, in the development of motivation. For instance, Maslow's (1943) hierarchy of needs theory argues that human behavior is initiated by the desire for needs satisfaction. That is, without considering psychological states, it is difficult to fully explain human motivation to act. As described previously, Deci (1971) also paid attention to competence and self-determination, psychological experiences facilitated by intrinsic rewards, in order to be motivated to act. From Porter and Lawler's (1968) perspective, the level of needs satisfactions led by rewards determines the value of rewards, which develop motivation. It can be assumed that the motivational theories affirm the importance of psychological states in the relationships between rewards (i.e., environmental factors) and engagement.

Empirically, Hackman and Oldham's (1976) work on motivation and job design, too, postulated psychological states as critical components of their job characteristics model. According to the model, the effects of the job dimensions on the outcomes, including internal

motivation, are mediated by critical psychological states—experienced meaningfulness of the work, experienced responsibility for outcomes of the work, and knowledge of the actual results of the work activities.

According to Kahn (1990), psychological states mediate the relationships between environmental or personal factors and engagement. More specifically, psychological meaningfulness mediates the relationship between job elements and engagement, whereas psychological safety mediates the relationship between work context and engagement. As discussed earlier, in this study, job elements include job autonomy and financial rewards, while work context subsumes learning culture and procedural justice. On the basis of the discussion above, several hypotheses are offered:

Hypothesis 4A: Psychological meaningfulness mediates the relationship between job autonomy and job engagement.

Hypothesis 4B: Psychological meaningfulness mediates the relationship between financial rewards and job engagement.

Hypothesis 4C: Psychological safety mediates the relationship between learning culture and job engagement.

Hypothesis 4D: Psychological safety mediates the relationship between procedural justice and job engagement.

CHAPTER 3

METHODOLOGY

This chapter describes the methods that were used to answer the study's research questions. The purpose of this study was to examine the antecedents of job engagement, with a specific focus on the roles of psychological conditions in promoting job engagement. In order to accomplish this purpose, the following research questions were proposed:

1. To what extent do the job elements and work context predict job engagement?
2. To what extent do the job elements and work context predict psychological states?
3. To what extent do the psychological states predict job engagement?
4. To what extent do the psychological states mediate the relationships between job elements and job engagement and between work context and job engagement?

This chapter is organized into seven sections: (a) measurement model, (b) instrumentation, (c) target population and sample, (d) data collection, (e) data preparation and screening, (f) data analyses, and (g) delimitations of the study.

Measurement Model

This study aimed to test and advance the theory of engagement at work proposed by Kahn (1990). The measurement model of the study (Figure 3.1) was grounded in Kahn's theory of engagement.

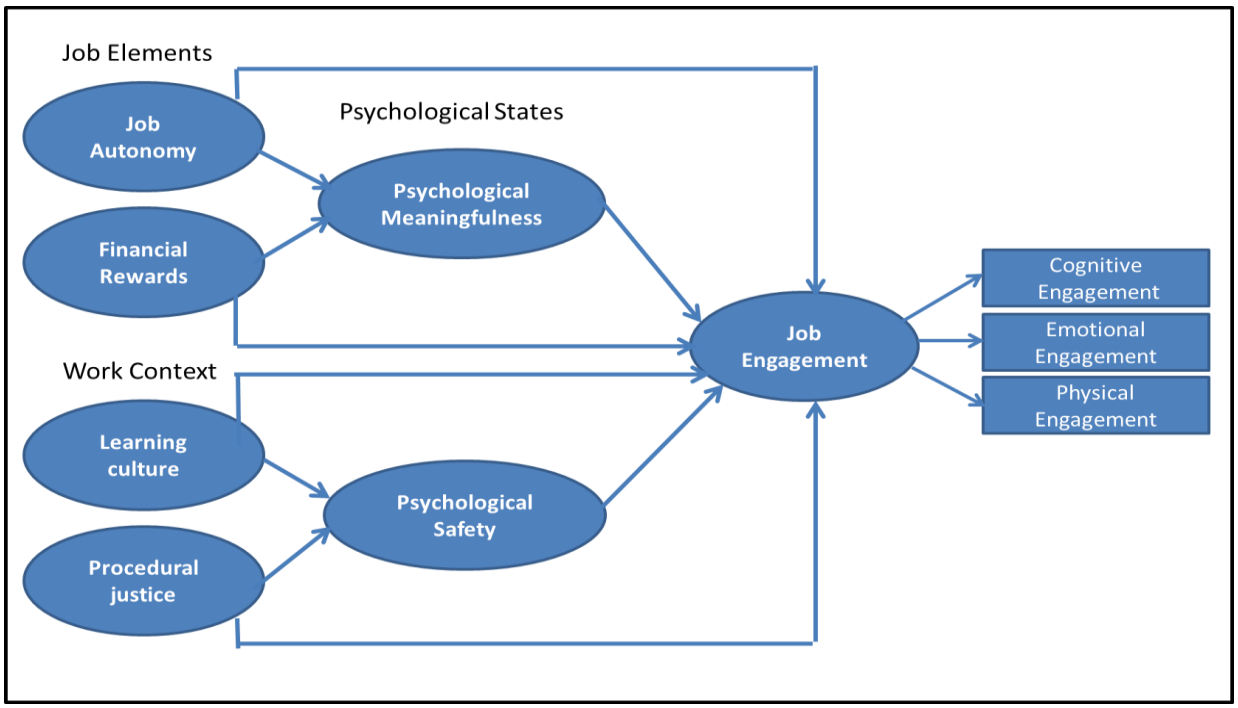


Figure 3.1. Measurement Model of the Study

In Chapter 2, several hypotheses were established to address the four research questions of this study. Based on Kahn's (1990) grounded theory of engagement at work, job elements and work context were presumed as the factors of job engagement. Deci's (1971) and Porter and Lawler's (1968) viewpoints of intrinsic and extrinsic motivation was also integrated into the framework of this study. Specifically, job autonomy as intrinsic motivators and financial rewards as the extrinsic drivers of motivation were chosen as job elements while learning culture, an intrinsic motivator, and procedural justice, an extrinsic motivator, were included as work context.

In addition, psychological states were hypothesized as the mediators in the relationships between job elements and engagement and between work context and engagement according to Kahn's (1990) argument about the critical role of psychological states in facilitating engagement. Job elements were considered as the predictors affecting job engagement through psychological

meaningfulness, whereas the variables related to work context were hypothesized as the influencing factors of job engagement mediated by psychological safety.

Specifically, to address Research Question 1, "To what extent do the job elements and work context predict job engagement?", the following four hypotheses were proposed:

Hypothesis 1A: Job autonomy is positively related to job engagement.

Hypothesis 1B: Financial rewards are positively related to job engagement.

Hypothesis 1C: Learning culture is positively related to job engagement.

Hypothesis 1D: Procedural justice is positively related to job engagement.

Research Question 2 of the study was "To what extent do the job elements and work context predict psychological states?" To answer this question, the following four hypotheses were developed:

Hypothesis 2A: Job autonomy is positively related to psychological meaningfulness.

Hypothesis 2B: Financial rewards are positively related to psychological meaningfulness.

Hypothesis 2C: Learning culture is positively related to psychological safety.

Hypothesis 2D: Procedural justice is positively related to psychological safety.

Research Question 3 was "To what extent do the psychological states predict job engagement?" The following two hypotheses were provided to address this research question:

Hypothesis 3A: Psychological meaningfulness is positively related to job engagement.

Hypothesis 3B: Psychological safety is positively related to job engagement.

Research Question 4 was “To what extent do the psychological states mediate the relationships between job elements and job engagement and between work context and job engagement?” Four hypotheses concerning the mediation effects of psychological states between environmental factors and job engagement were established to address this question:

Hypothesis 4A: Psychological meaningfulness mediates the relationship between job autonomy and job engagement.

Hypothesis 4B: Psychological meaningfulness mediates the relationship between financial rewards and job engagement.

Hypothesis 4C: Psychological safety mediates the relationship between learning culture and job engagement.

Hypothesis 4D: Psychological safety mediates the relationship between procedural justice and job engagement.

As these hypotheses illustrate, this study examined the causal relationships between independent variables and a dependent variable with mediation effects of several independent variables based on Kahn’s (1990) theory of engagement and motivational theories. Therefore, structural equation modeling (SEM), a multivariate technique to test priori hypotheses representing causal relationships between variables (Mueller & Hancock, 2010), was chosen as a primary data-analysis strategy for the present study.

Instrumentation

The instrument used in this study (Appendix A) was multifaceted and consisted of measures from a variety of different studies. To build the instrument, existing surveys from previous engagement or motivational research were selected and crafted into a single, omnibus questionnaire. Also, different response scales of the existing measures were standardized into

single 6-point Likert scale. The use of existing instruments for the variables of this study can be justified as the measures had each demonstrated a strong or at least reasonable level of reliabilities and construct validity in previous studies.

The final instrument for this study consisted of 51 items in total: 43 items assessing independent and dependent variables, two attention-check items, and six items regarding demographic information. The following six-stage process (Table 3.1) was carried out to craft a multifaceted instrument: (a) identification of existing measures for research variables, (b) initial revision to the survey items, (c) standardization of the response scales, (d) verification of construct validity, (e) pre-pilot reviews of the survey questionnaire, and (f) pilot study.

Table 3.1.

Multifaceted Survey Instrument Crafting Process

Stage	Activity
Identification of measures for research variables	▪ Reviewed previous research. ▪ Selected measures with strong reliabilities and validity.
Initial revision of the survey items	▪ Adopted short forms, if existed. ▪ Shortened some measures by removing redundant items. ▪ Revised wordings and formats ▪ Edited grammar errors
Standardization of the response scales	▪ Analyzed response scales used for the measures adopted ▪ Selected an adequate scale for this study
Verification of construct validity	▪ Conducted a construct sort activity ▪ Analyzed the sort activity results using tally charts
Pre-pilot reviews of the survey questionnaire	▪ Held a survey critique session ▪ Collected feedback from reviewers
Pilot study	▪ Conducted an online survey with 40 survey participants drawn from the targeted population

Identification of Measures for Research Variables

Measures to use for this study (Table 3.2.) were selected by reviewing research on engagement and motivational constructs and other empirical studies conducted in the fields of HRM, HRD, and industrial-organizational psychology. Psychometric properties of the selected measures for this study are described below.

Job engagement. The instrument for job engagement used in this study was developed by Rich, Lepine, and Crawford (2010) and named the job engagement scale (JES). Although the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003) has been widely used to measure engagement, Rich et al. (2010) asserted that because UWES was drawn from the job burnout literature, as discussed in the previous chapter, an instrument reflecting Kahn's (1990) conceptualization of engagement at work needed to be developed. To develop a new measure, Rich et al. reviewed the literature, compiled a list of items, and then modified the items to reflect Kahn's concept. With the 18 initial items, Rich et al. conducted two preliminary studies for validation. Based on the results of the studies, they identified job engagement as a higher-order factor that consisted of three first-order dimensions (cognitive, emotional, and physical engagement). In terms of construct validity, the results of a confirmatory factor analysis (CFA) indicated that the higher-order factor with three first-order factors had a better model fit than an alternative single-factor model, and the factor loadings of the first-order factors in relation to the second-order factor were statistically strong (.90, .72, .79, respectively), which implied that the new instrument measured the concept of engagement. Rich et al. also assessed the discriminant validity of the JES using CFA and revealed that the scale is distinct from other variables, including job involvement, job satisfaction, intrinsic motivation, and organizational citizenship

behavior. In addition, the reliability coefficient of the instrument indicated that the measure established a strong reliability (α= .95).

Table 3.2.

Measures Adopted for This Study

Variable	Instrument			
	Source	Number of original items	Scale used (Point)	Reliability(α) evidenced in the literature
Job engagement	Rich, Lepine, and Crawford (2010)	18	5	.95
Psychological meaningfulness	May, Gilson, and Harter (2004)	6	5	.90
Psychological safety	Carmeli and Gittell (2009) adapted from Edmondson (1999)	7	7	.71
Job autonomy	Job autonomy dimension in the revised *Job Diagnostic Survey* (Idaszak & Drasgow, 1987), based on Hackman and Oldham (1974)	3	7	.78
Financial rewards	Heneman and Schwab (1985)	18	5	.84 -.94
Learning culture	Short form of *Dimensions of Learning Organization Questionnaire* (Watkins & Marsick, 1997)	7	6	.90
Procedural justice	Colquitt (2001)	7	5	.93

Psychological meaningfulness. The measure for psychological meaningfulness was developed in May et al.'s (2004) research, which tested Kahn's theory of engagement. To develop the measure of psychological meaningfulness, May et al. generated six items from the construct of meaning, one of the dimensions of the psychological empowerment measure (Spreitzer, 1995), along with May's (2003) concept of employees' experienced meaningfulness at work. The items developed capture "the degree of meaning that individuals discover in their work-related activities" (May et al., 2004, p. 21). The reliability estimates for the psychological meaningfulness scale indicated a strong internal consistency (α= .90). May et al. did not provide

evidence of the construct validity for psychological meaningfulness itself; instead, the results of the principal components factor analysis of their research model showed that all items loaded on their designated constructs, and the 23.9% variance was explained by the largest factor. This result supported the discriminant validity of the measures used, including psychological meaningfulness.

Psychological safety. The measure for psychological safety was developed in Edmonson's (1999) study. Edmonson crafted survey items for team psychological safety based on theoretical work related to psychological safety in the organizational change literature, and she also used qualitative data generated from her interviews with employees at a manufacturing company. The instrument assessed an organization's shared beliefs of psychological safety by measuring team members' perceptions of the consequences of taking interpersonal risks and having honest dialogue with others. The measure developed for psychological safety at the team level had a reasonable reliability estimate ($\alpha = .82$). Carmeli and Gittel (2009) adapted Edmonson's items to examine employees' perceptions at the organizational level instead of the team level. The reliability estimate for the adapted survey was shown to be acceptable ($\alpha = .70$).

In terms of convergent and discriminant validity, Edmonson (1999) conducted factor analysis and showed that all items were loaded onto respective constructs (i.e., team psychological safety, team efficacy, team task, and clear goal), and all the factor loadings exceeded .40. Based on the results, the measure of psychological safety was considered to establish validity. However, in Edmonson's study, team psychological safety and team learning behavior were highly correlated. Because this study included learning culture, which overlaps with team learning behavior to some extent, the discriminant validity of psychological safety in relation to learning culture needed to be carefully observed in a sort activity and pilot study.

Job autonomy. To measure job autonomy, three items from Hackman and Oldham's (1974) Job Diagnostic Survey (JDS) was employed. The JDS is the most popular instrument used to measure dimensions of job characteristics. However, researchers (e.g., Dunham, 1976; Dunham, Aldag, & Brief, 1977) revealed that the five-factor structure proposed by Hackman and Oldham (1974) was not upheld by statistically strong evidence; for example, the five-factor structure of the JDS did not show an adequate model fit in CFA in Harvey, Billings, and Nilan's (1985) study. In this regard, Idaszak and Drasgow (1987) proved that the reverse-scored items of the JDS had contributed to inconsistent results in empirical studies, because the items had caused problems in factoring. To eliminate the psychometric problem, Idaszak and Drasgow revised the JDS. They maintained the original format (i.e., 15 items with a 7-point scale) but rewrote the items, including one item for job autonomy, with reverse scoring in the original survey. In three validation studies, Idaszak and Drasgow improved the quality of the revised items and finally, verified a five-factor structure as core job dimensions with a good model fit and no artifact factor.

More specifically to the job autonomy dimension, in Joo, Jeung, Yoon's (2010) study, three items for job autonomy from the JDS were used to assess the effect of job autonomy, with the influences of core self-evaluations and intrinsic motivation, on in-role job performance. As Joo et al.'s measurement model showed a good fit to the data with factor loadings over .50, the measure for job autonomy established construct validity in relation to the other variables in the study. The internal consistency reliability of the measure was acceptable at a marginal level, indicating $\alpha = .71$. Moreover, in Morgeson, Delaney-Klinger, and Hemingway's (2005) research, three items from the JDS were used with an adaption, including a switch a negative statement to positive, and the measure was shown to have acceptable reliability ($\alpha = .78$).

Financial rewards. Because this study treated the financial rewards variable as extrinsic rewards, this study used the pay satisfaction questionnaire (PSQ) developed by Heneman and Schwab (1985). To measure pay satisfaction, the PSQ was composed of five dimensions: satisfaction with a current pay level, benefits, raises, structure, and administration. This study employed the items for a pay level, benefits, and pay raises, because the dimensions assessed financial rewards relating to job elements. The items for pay structure and administration were excluded in that they assessed processes of pay administration, which was similar to another variable of this study—procedural justice. In terms of construct validity and reliability, the items of each scale (i.e., satisfaction with pay level, benefits, and pay raises) had acceptable factor-loadings (over .64) onto the respective dimensions, and all three dimensions had strong reliabilities (α = .94, .93, and .84, respectively).

Learning culture. In this study, a learning culture was measured utilizing the dimensions of learning organization questionnaire (DLOQ) developed by Watkins and Marsick (1997) and validated by Yang, Watkins, and Marsick (1998; 2004). Yang et al. (2004) conducted a study for the validation of the DLOQ. Because the initial DLOQ model had not adequately fit the data, Yang et al. refined the instrument by selecting half of the initial items, which adequately represented the dimensions. The revised DLOQ questionnaire consisted of 21 items. The results of the CFA showed that the model of the refined DLOQ adequately fit the data, and all of the factor loadings from 21 items in relation to the designated dimensions were strong. Yang et al. also revealed that the DLOQ established nomological validity through SEM. This evidence showed that the revised DLOQ established construct validity. The reliability estimates for the seven dimensions indicated a reasonable magnitude (ranging from .68 to .83).

In this study, a short version with 7 items (Marsick & Watkins, 2003) was employed instead of the full version in order to build a more feasible, multifaceted survey. To verify the validity and reliability of the seven-item version, Joo and Shim's (2010) research, which included the variable of a learning culture, was reviewed. In the CFA of Joo and Shim's study, the goodness-of-fit index (e.g., RMSEA= .056; NNFI= .87; CFI= .93) and the factor loadings (over .45) in their research model, consisting of organizational commitment, psychological empowerment, and organizational learning culture, were not strong but acceptable. Thus, the construct validity of the model was marginally accepted by the researchers. However, because Joo and Shim did not provide the specific factor loadings of the DLOQ items, this study could not assess construct validity for the 7-item model of learning culture at the stage of instrument identification. The reliability estimate for the short form showed a strong magnitude of internal consistency (α= .90).

Procedural justice. To measure procedural justice, this study chose the construct of procedural justice in the justice measure items (JMI) developed by Colquitt (2001). The JMI assessed organizational justice and consisted of four components (i.e., procedural, distributive, interpersonal, and informational justice). By basing the items of the measure on several seminal works in the literature on organizational justice, Colquitt established the content validity of the scale. Also, to assess the construct validity, Colquitt (2001) conducted CFAs in two studies. The results of the CFAs showed that the four-dimension construct of organizational justice had a better model fit than the alternative models that consisted of two or three factors. The factor loadings of the seven items on procedural justice were strong (ranging from .76 to .85) in the second study, which was conducted with tailored items after the first study. These results imply that the items regarding procedural justice measure unique aspects that are different from the

other constructs in organizational justice (i.e., distributive, interpersonal, and informational justice), while four constructs measure some common elements related to organizational justice. In the reliability assessment, the reliability estimates indicated the strong internal consistency reliability of the measure of procedural justice (α= .93) in the second study after item modification.

Initial Revision of the Survey Items

Before conducting the initial revisions, we sent a letter for permission to the authors who developed the instruments adopted for this study and received their approvals. Although the methodologists and I attempted to maintain as many survey items as possible as they were in the original instruments, changes were made in some original items as we combined existing instruments to craft a single measure for this study. More specifically, we shortened the job engagement scale by removing 9 redundant items out of 18 items. Because in Rich et al.'s (2010) study, the JDS established a strong reliability, we assumed that the elimination would not significantly affect the reliability of the measure for this study. In the same vein, survey items from the PSQ measuring satisfaction with pay, benefits, and pay raise were shortened by selecting 6 items out of 12 items. To measure learning culture, the short form of the instrument with 7 items was used for this study. Full versions of instruments, generally, are likely to establish stronger reliabilities and validity than shortened forms. However, despite the strengths of full versions, there is a two-fold justification for using the shortened versions. First, they enable this study to acquire a high response rate. Secondly, shortened versions can prevent actual or mental attrition, which impedes data collection.

Additionally, formats of the seven existing measures were standardized in a way that questions asked about the extent to which respondents agree or disagree with each statement

measuring the research constructs. In doing so, the formats of the financial rewards and procedural justice measures which had items that were not in the form of declarative sentences were changed into statements that could be answered using an agreement-disagreement scale. Lastly, one reversed item and one negatively stated item for psychological safety were changed to positive statements to reduce respondents' cognitive attrition.

Standardization of the Response Scales

In combining existing measures, a standardized response scale was constructed to maintain consistency in response scales. The measures selected for this study used different scales. To be specific, a five-point Likert scale in a *strongly disagree-strongly agree* format was used in the measures of job engagement (Rich et al., 2010), psychological meaningfulness (May et al., 2004), and procedural justice. A five-point Likert scale with anchors from *very dissatisfied* to *very satisfied* was utilized in the pay satisfaction questionnaire (Heneman & Schwab, 1985). A six-point Likert scale ranging from *almost never true* to *almost always true* was employed for dimensions of learning organization (i.e., learning culture in this study). Psychological safety was measured, in Edmondson's (1999) research, using a 7-point, from *inaccurate* to *very accurate*, scale. Job autonomy in the JDS (Hackman & Oldham, 1974) was assessed through a 7-point scale with anchors of *low-high*.

To reduce respondents' confusion and cognitive attrition in responding to survey items, this study constructed a six-point Likert scale was constructed as a standardized response scale (in a *strongly disagree* (1) to *strongly agree* (6) format). Chomeya (2010) investigated the quality of psychology tests, including attitude tests, and compared tests with 5-point and 6-point Likert scales. In Chomeya's study, a Likert scale of six points showed better results than five points in terms of discriminant validity and reliability at the .05 level. Furthermore, two

committee members with expertise in survey development recommended the use of a 6-point scale. Hence, although four out of seven existing measures selected for this study used five-point scales, this study utilized a six-point scale.

Verification of Construct Validity

In order to investigate the effects of antecedents on job engagement using a structural equation modeling method, constructs used for this study needed to obtain reasonable levels of convergent and discriminant validity. To verify construct validity, a construct validity sort was conducted with nine graduate students, eight of whom were from education fields and one of whom was from the field of public health. Each person was provided with a card sorting kit that contained the following materials: instructions for the sorting activity, seven envelopes with the constructs' names and definitions indicated on the outside, and 45 item cards. Each card had one item and a randomly assigned number for evaluation. After the participants completed the activity, tally charts (Appendix B) were created. In the tally charts, each construct had its own sheet and a table. On the table, each item was examined in terms of how many participants sorted the item under the right construct.

The results of the sort activity showed that five of the seven constructs met the validity criteria we had identified beforehand (i.e., at least seven participants' agreement out of nine). Thus, the items for the constructs were retained. However, two constructs, learning culture and psychological safety, were identified as having items with a validity issue. More specifically, seven out of nine participants sorted one item for learning culture under psychological safety. In terms of one item assessing psychological safety, three out of nine sorted it into the learning culture construct. Also, the other item for psychological safety was sorted correctly only by one of the participants. Based on the results, the two items for psychological safety with an issue in

sorting were removed from the survey for the pilot study. Regarding the one item for learning culture, we decided not to change the item unless the data collected in the pilot study would reveal the same issue, because DLOQ has been validated and widely used in various contexts.

Pre-pilot Reviews of the Survey Questionnaire

One formal critique session and one informal survey critique were conducted to ensure that the survey items had adequate face validity and that the item wordings were appropriate and understandable for respondents drawn from the target population. In the formal critique session, one scholar with expertise in quantitative research and three graduate students with work experience in organizations participated. Seven construct sheets were distributed to them. Each sheet had one construct name, definition, and items measuring the construct. The participants provided comments and had discussions about items for each construct. The feedback and discussions addressed that (a) survey items reflected the construct that they were intended to assess, (b) the terms and wordings were understandable for employees in organizations, and (c) the items within each construct were redundant. In the discussion, all of the participants agreed that the items covered and measured the targeted constructs, even though some redundancy within constructs was pointed out. Based on the discussion in the critique session, no substantial change was made other than the wording used in the procedural justice measure. Because most of the participants indicated that for the procedural justice items, the term *rewards procedures* was not clear, the term was changed to *evaluation/rewards procedure*.

Before conducting the pilot study, as a final review, three informal critiques were carried out to determine whether or not the introduction, instruction, survey questions, and organization of the survey were sufficiently clear to allow potential respondents to answer and complete the survey. Three reviewers were invited to this critique. Two were practitioners in the fields of

HRD and adult education and worked at large-size organizations, and one was a researcher in a governmental research institution with experience in survey development. The reviewers were provided with a survey critique sheet (Appendix C) containing the exact survey questionnaire to be used for the pilot study. The reviewers commented that the survey items, overall, were appropriate for potential respondents to clearly understand the content of the questionnaire. However, the reviewers pointed out grammar errors in a few survey items and a confusing term, *evaluation/rewards procedure,* which measured procedural justice. The error was edited, accordingly. Also, after several brainstorming sessions with the methodologists, the term was revised as *the procedures used to evaluate my performance*.

Pilot Study

Prior to the main study, a pilot study was conducted to assess the extent to which (a) the survey items capture the differences between individual participants (variance and distribution), (b) the items are consistent in terms of measuring respective constructs (reliability), and (c) the dimensions consisting of the survey are associated with one another (multicollinearity). To administer a survey for a pilot study, an online survey was created using the Qualtrics™. The survey used for the pilot study is attached in Appendix D.

To collect data, I contacted three people, in my personal network, working for companies in the U.S. and provided them with a link to the online survey. They distributed the link to colleagues in their companies. The survey was administered during one week in June 2017, and 40 responses were collected. The data were analyzed in terms of distributions of, reliabilities of, and multicollinearity among the scales to achieve the purpose of the pilot study. A brief description of the results from the pilot test is provided in this section, and a detailed report is attached in Appendix E.

First, the distributions of the scales showed that the survey items captured differences between individual respondents. In addition, reliability coefficients demonstrated strong reliabilities of the scales measuring job engagement, psychological meaningfulness, and pay satisfaction, and reasonable levels of those assessing learning culture and procedural justice. However, psychological safety and job autonomy were shown to have slightly lower alpha coefficients than the threshold for this study ($\alpha > .70$). Regarding the psychological safety measure, because the methodologists and I concluded that the face validity of the constructs was strong and that the number of the responses in the pilot study was too small to apply the cutoff strictly, a decision was made to maintain the items. In contrast, the items for job autonomy were rewritten because it was presumed that the different format of the items and one adjective (i.e., considerable) representing a large amount of independence compared to the other two items would have caused the low consistency between the items. Lastly, multicollinearity among the seven measures was assessed through bivariate correlation analysis. Most of the pairs of the independent variables were moderately correlated, while the correlation between learning culture and procedural justice was not significant. Considering the sample size of the pilot study, we agreed that all of the dimensions consisting of the survey questionnaire showed reasonable results with respect to variance, reliability, and multicollinearity. Thus, we decided to use the instrument for the main study with minor revisions to the job autonomy measure. The result of the revisions made through a validity sort, pre-pilot reviews, and pilot study is summarized in Table 3.3.

Table 3.3.

Result of Item Revisions through Instrumentation: Comparison of Original with Final Items

Construct	Original Item	Final Item	Stage[a]
Job Engagement[b]	I exert my full effort to my job.	I exert my full effort towards my job.	Initial revision
	I am enthusiastic in my job.	I am enthusiastic about my job.	Initial revision
Psychological Meaningfulness	No change was made.		N/A
Psychological Safety	If you make a mistake in this organization, it is often held against you.	Even if I make a mistake in this organization, it is not often held against me.	Initial revision and pre-pilot reviews
	Employees in this organization sometimes reject others for being different.	Employees in this organization do not reject others for being different.	Initial revision
	It is not difficult to ask others in this organization for help.	Removed.	Verification of construct validity
	Working with others in this organization, my unique skills and talents are valued and utilized.	Removed.	Verification of construct validity
Job Autonomy	My job gives me considerable opportunity for independence and freedom in how I do the work.	My job gives me the opportunity to use my personal judgment in carrying out the work.	Pilot study
	My job permits me to decide on my own how to go about doing the work.	My job gives me the opportunity to decide on my own how to go about doing the work.	Pilot study
Financial Rewards[c]	The raises I have typically received in the past.	I am satisfied with my most recent pay increase.	Initial revision and pre-pilot reviews
Learning Culture	No change was made.		N/A
Procedural Justice[d]	Have those procedures been applied consistently?	In my organization, the procedures used to evaluate my performance are applied consistently.	Pre-pilot reviews and pilot study

Note. [a]Instrumentation stage that the revision was made; [b]Nine items out of 18 items were removed at the initial revision stage due to redundancy; [c]Six items out of 18 were selected from the original measure. The question format was changed; and [d]The format of the questions was changed. Also, the same change in the term was applied to the other items, accordingly.

Target Population and Sample

The target population of this study was employees working at for-profit organizations in the United States. This study intended to increase the generalizability of this study by obtaining responses from participants with various job types and working for a variety of business organizations. This study also attempted to apply the findings of the study to employees with different demographic factors, such as age, gender, and job positions. For this reason, a convenience sampling approach was utilized. More specifically, the data for this study was collected through an online survey platform, *Amazon Mechanical Turk*, which provides a wide range of potential respondents. The justification for sampling using this survey platform is described in the data collection section.

In selecting a sample, the following categories were employed: full-time employees working for companies which had at least 50 employees in total and had annual performance reviews. The criteria were identified as this study examined the effects of environmental factors on employees' engagement levels and the survey questionnaire included items regarding an employee's experience with organizational procedure, policy, and support. To answer the questions, employees had to receive organizational support for a certain period of time. Generally, organizations provide substantial support for full-time employees. Moreover, because organizational processes are more likely to be well-established in mid-sized or large companies and because the survey included items for procedural justice (namely fairness in rewards administration), employees from corporations with at least 50 employees and with annual performance review processes were identified as eligible to participate in this study. 568 workers accessed through MTurk met the qualification criteria with respect to the targeted population and participated in the survey. 531 responses with correct answers to the attention check items were

reviewed and 45 outliers were eliminated from the dataset. The final sample size for this study was 486.

Sample Characteristics

The sample consisted of 486 full-time employees working for companies in the United States. The item-respondent ratio was 1:11.3 (43:486), which exceeded 1:10, a more conservative threshold recommended by Jackson (2003). Through the survey, demographic information about the participants (Table 3.4) was collected on age, education levels, job levels, management roles, and type of jobs. Regarding the age, a wide range of age groups, from 20 to 72, participated in the survey. In terms of gender, 46.5% was female, while 53.5% was male, and as for educational levels, about 70% of the participants had a bachelor's degree or higher. Regarding job levels, about 75% of the participants were at the intermediate or first/middle management level. In terms of job types, participants' roles and responsibilities in their organizations varied. Specifically, 25.1% was performing general operations, 19.1% marketing/sales, 10.3% finances/accounting, 10.1% research and development, and 9.3% operations and productions. As such, the sample for this study covered a wide range of demographic characteristics.

Data Collection

The data collection strategy employed in this study was convenience sampling, a type of non-probability sampling. Ideally, random sampling from a well-defined population enables high generalizability of the results; however, because the sample of the study was drawn from corporations, access to organizational members was limited in reality. By taking a convenience sampling approach, this study could more efficiently recruit participants and administer the survey.

Table 3.4.

Demographic Information of the Sample (n = 486)

Demographic Characteristics		Frequencies	
		Responses	%
Gender	Male	260	53.5%
	Female	226	46.5%
Age	20-29	124	25.5%
	30-39	197	40.5%
	40-49	88	18.1%
	Over 50	75	15.4%
	No response	2	0.41%
Educational Level	Below high school diploma	122	25.1%
	Bachelor's degree	282	58%
	Master's degree	52	10.7%
	Doctorate	11	2.3%
	Other	19	3.9%
Job Level	Entry level	64	13.2%
	Intermediate level	181	37.2%
	First/middle management	188	38.7%
	Senior management	24	4.9%
	Non-management technical/professional	27	5.6%
	Other	2	4%
Management Role	Official or informal role as supervisors	291	59.9%
Job Type	General operations	122	25.1%
	Administrative assistance	46	9.5%
	Marketing/sales	93	19.1%
	Finances/accounting	50	10.3%
	Human resources	22	4.5%
	Research and development	49	10.1%
	Engineering in manufacturing facilities	20	4.1%
	Operations/production	45	9.3%
	Other	39	8.0%

Data Collection Strategy

An effective strategy for data collection was explored to reach employees from a variety of organizations and with various demographic backgrounds and to acquire a large sample size to be able to use SEM for the data analysis. For data collection, *Amazon Mechanical Turk* (MTurk), an online platform for human intelligence work (such as surveys) was utilized. Even though survey platforms have not been used very often for data collection in academic research, I, under

the supervision of the chair and methodologists of this study, expected that by using the platform, we would be able to collect a large number of responses from the target population.

MTurk, a crowdsourcing service, started to receive attention from some researchers in social science as an efficient way of recruiting survey participants (Chandler, Muller, & Paolacci, 2013). Through MTurk, researchers are highly accessible to many potential survey respondents from a variety of backgrounds (Landers & Behrend, 2015; Smith, Sabat, Martinez, Weaver, & Xu, 2015). As many researchers showed interest in using MTurk for surveys and research experiments, recent studies have investigated the quality of the data collected via MTurk, demographic characteristics of MTurk users (called *MTurk workers* on the website), and motivation levels of the MTurk workers. As a result, MTurk workers were shown to have diverse demographic backgrounds (Behrend, Sharek, Meade, &Wiebe, 2011; Buhrmester et al., 2011; Ipeirotis, 2010; Paolacci et al., 2010; Sheehan &Pittman, 2016; Woo, Keith, & Thornston, 2015), and the demographic characteristics were found to be more consistent with and representative of the U.S. population than other convenience sampling methods, such as using college or undergraduate students or in-person recruiting (Berinsky, Huber, & Lenz, 2012; Paolacci, el al., 2010). For this reason, Woo et al. (2015) suggested that sampling from MTurk workers would be more appropriate than employees from one organization if research aims to include a diverse population of employees from a variety of regions and industries in the United States. Highhouse and Zhang (2015) and Landers and Behrend (2015), in a similar sense, argued that MTurk workers are highly recommended as research participants comparing to student samples for studies investigating workplace phenomena.

Furthermore, studies have revealed that the quality of data collected through MTurk met psychometric standards required for publication (Buhrmester, Kwang, & Gosling, 2011; Paolacci

& Chandler, 2014; Shaprito, Chandler, & Mueller, 2013). More specifically, in Buhrmester et al.'s (2011) study analyzing mean alphas of collected data via MTurk, reliabilities of the data collected via MTurk were shown to be high. More specifically, compared to traditional sampling methods, the alphas of data collected from MTurk were not different from those through other sampling methods. Also, Buhrmester et al. revealed that test-retest reliabilities of MTurk data were very high. Based on the results, Buhrmester et al. expected that MTurk would soon become a major data collection source for psychologists and social scientists in academia. In addition, individual differences capturing from self-report were shown to be valid (Paolacci & Chandler, 2014; Shaprito, Chandler, & Mueller, 2013). Moreover, by using screening methods on MTurk before a study, researchers can obtain better quality of data (Paolacci & Chandler, 2014).

When it comes to the motivation levels of survey participants, research found that MTurk workers voluntarily do tasks on MTurk, and their motivation level for research participation was relatively higher than participants recruited using a personal network as convenience sampling (Sheehan & Pittman, 2016; Woo et al., 2015). MTurk workers are motivated intrinsically as well as extrinsically (Paolacci & Chandler, 2014). MTurk workers also showed the same levels of attention to study materials compared to other participants via other convenience sampling methods (Goodman, Cryder, & Cheema, 2013). Moreover, MTurk workers are less susceptible to social desirability due to the anonymity of their answers (Sheehan & Pittman, 2016; Smith, Sabat, Martinez, Weaver, & Xu, 2015). This aspect might have helped us to obtain more honest responses in that the survey for this study measured the constructs that can be affected by respondents' social desirability.

Data Collection Procedures

After analyzing the data collected in the pilot study and after receiving committee members' approval of the instrument revision, an online survey was created on Qualtrics™ using the final instrument (Appendix F) for the main study. The final survey instrument and documents for participant recruitment (Appendix G) and consent information (Appendix H) was submitted to the Institutional Review Board at the University of Georgia. After getting IRB's approval for this study, a survey batch consisting of an online survey link, introduction of the survey, and consent information was published on MTurk. To collect high quality data, qualification criteria were set up on the survey batch. More specifically, using MTurk's features, I allowed only the MTurk workers who had participated in more than 50 surveys and had over a 95% acceptance rate of completed surveys from survey requesters to participate in the survey. In addition, to verify the potential respondents were eligible for this study in terms of the population targeted, only the respondents who passed a qualification test with four items were allowed to participate in the survey. For those who completed the survey with correct answers to the attention check items, a monetary reward, in the amount of $1, was granted.

The procedures MTurk workers followed to participate in the survey are as follows. First, MTurk workers signed in to the MTurk website and found the survey batch for this study on the list of HITs (human intelligence tasks), a list of surveys published on MTurk. Next, the workers read the introduction to the survey and clicked an online survey link if they wanted to participate. Third, they were directed to the online survey at Qualtrics™ and read the consent information. Fourth, if the workers agreed to participate, they were forwarded to a qualification test. Once they passed the test, they took the survey and completed it.

Data Preparation and Screening

Before conducting the data analysis, original responses were downloaded from Qualtrics™, and a pre-analysis was conducted to evaluate that the original dataset met statistical assumptions for SEM.

Data Preparation

After the survey site was closed, all of the completed responses were downloaded as a SPSS file. The survey questionnaire had two attention check items to verify that the participants paid attention to the survey and carefully read the survey questions and statements while taking the survey. All responses were reviewed in terms of the attention check items, and responses that provided wrong answers to both items were removed from the dataset. Also, some of the responses with one wrong answer to the attention check questions were deleted, because they provided the same rating in most of the survey items. By doing so, a total of 37 cases were removed out of the 568 responses collected.

Data Screening

To maintain a high quality of data to use SEM, data screening was conducted. Initially, the data needed to be checked for whether the respondents were from the target population of this study. Because only those who had passed a qualification test could take the survey, the data were considered to be screened in terms of the eligibility of the respondents. In addition, because this study analyzed data using SEM, it was important to examine the collected data to ensure that they met the assumptions for SEM with regard to univariate normality, multivariate normality, outliers, missing data, and multicollinearity (Kline, 2005).

Univariate normality. Univariate normality can be examined by the values of skew and kurtosis (Field, 2009). Skew represents that the shape of a unimodal distribution is asymmetrical

about its mean (Kline, 2005), while kurtosis implies the peakedness of distribution (Thompson, 2004). The absolute value of standardized skew index equals to or greater than 3.0 indicated that the data is skewed (Tabachnick & Fidell, 1996). The absolute value of a standardized kurtosis index that is equal to or greater than 10.0 indicates that the data may have an issue on Kurtosis (Kline, 2005).

In this dataset, the skew indices (the absolute value of z score) of seven variables ranged 3.66 from to 8.76, and the kurtosis indices (the absolute value z score) ranged from 0. 29 to 4.79. Considering the indices, the variables had skewed distributions, whereas they showed similar distributions to normal distribution in terms of kurtosis. Regarding the univariate normality assumption for SEM, serious problems can be caused by kurtosis as it affects tests of covariances, while skewness is likely to affect tests of means (Byrne, 2012; Decarlo, 1997). Hence, we did not treat nonnormality on this stage; instead, we moved to the assessment of multivariate normality.

Multivariate normality. Multivariate normality includes the normal distribution of all the univariate distributions, the normality of all the joint distributions among the variables, and linearity and homoscedasticity. The multivariate normality of this data was assessed through an omnibus test of multivariate normality using Small's (1978), Srivastava's (1984), and Mardia's (1970) tests, which evaluate a multivariate skew or kurtosis (Kline, 1998; Ullman, 2006). If the *p* values of the coefficients resulting from the tests are smaller than .05 ($p < .05$), then multivariate normality is not satisfied (Hanusz & Tarasińska, 2012). Also, in the case that the *z* score of Mardia's coefficient is greater than 3.0 (Bentler, 2001; Ullman, 2006), the data would have a multivariate normality issue. Moreover, linearity and homoscedasticity were also assessed. Linearity refers to the linear relationships between changes in the mean value of an outcome

variable and each increment of predictors (Field, 2009), while homoscedasticity means that the variance of the residuals across all values of predictors should be constant (Field, 2009). To evaluate linearity and homoscedasticity, bivariate scatterplots were used (Kline,2005).

Based on the evaluations, we concluded that the data for this study did not show multivariate normality. In practice, a multivariate normal distribution is not met (Benson & Fleishman, 1994) in many cases, and those cases often do not have serious problems with nonnormality (Newsom, 2017). In the case of too large value of chi-square and too small standard errors, normality tests would indicate nonnormality (Newsom, 2017). Because the data collected for this study did not meet the rule of thumb regarding multivariate normality on the tests, robust maximum likelihood (RML) was used instead of maximum likelihood (ML) estimates in the data analysis for this study.

Outliers. Outliers mean that some cases that are very different from the other cases (Kline, 2005). Because multivariate normality is one of the assumptions for SEM, I checked the data to detect multivariate outliers. A multivariate outlier refers to the case with extreme scores on more than two variables or the pattern of its score is not normal (Kline, 2005). In this study, a Mahalanobis distance statistic was used to evaluate outliers in the data. The Mahalanobis distance is the distance between a case and the multivariate mean with the case removed (Ullman, 2006). Forty-five cases with a probability of less than .001 (Kline, 2005) in terms of the Mahalanobis distance were detected and deleted from the dataset.

Missing Data. Generally, missing data need to be addressed in the stage of data screening. In the dataset for this study, however, no missing data existed because all survey items were set as mandatory using a feature in Qualtrics™. All survey items forced participants to answer. There were no incomplete responses that did not finish the survey.

Multicollinearity. Multicollinearity occurs when some variables are highly correlated (e.g., r > .85) (Kline, 2005). In SEM, multicollinearity involves "high correlations among latent exogenous constructs" (Grewal, Cote, & Baumgartner, 2004, p. 519). Because collinearity may increase the estimates of parameter variance (O'Brien, 2007), analyses employing a regression analysis, such as SEM, need to ensure the absence of multicollinearity in the data before an analysis. To detect multicollinearity, tolerance and the variance inflation factor (VIF) can be used. With high values of VIF, relationships between variables can be indicated as significant even if the variables, in fact, do not have significant relationships.

Researchers suggested several thresholds to evaluate multicollinearity. Some (e.g., Hair, Anderson, Tatham, & Black, 1995; Kennedy, 1992; Kline, 1998) recommended tolerance values greater than 10% and a VIF less than 10, while some others (e.g., Rogerson, 2001) suggested a VIF less than 5 or even 4. In this data, all VIF values among the variables used were less than 4 with a tolerance greater than 25%. The examination indicated that there was no multicollinearity identified. Thus, based on the examination of VIF and tolerance scores and the result of the card sorting activity, it was concluded that the dataset had no excessive intercorrelations among the variables.

Data Analyses

As described previously, to answer the research questions of the present study and test the hypotheses, this study used structural equation modeling (SEM).

Data Analysis Strategy: Structural Equation Modeling (SEM)

SEM is a statistical technique that allows one to examine causal relationships between independent variables and dependent variables (Mueller & Hancock, 2010; Ullman, 2006). Also, SEM is a theory-driven approach in that it examines the relationships between variables in a

model developed based on a theory (or theories) (Mueller & Hancock, 2010). Because the present study aimed to test Kahn's (1990) theory of engagement, particularly the casual relationships among environmental factors, psychological states, and job engagement, SEM was an appropriate data-analysis method for this study. In addition, because SEM enables a researcher to evaluate various relationships among variables simultaneously, this study could take a comprehensive approach in terms of the extent to which several organizational interventions influence psychological experiences and, in turn, lead to job engagement.

Another feature of SEM is that it includes both measurement and structural models for theory testing. A measurement model consists of observed variables (measured variables) and a latent variable (an unobserved variable, a factor), which explains variance in its measured variables and prompts covariance among them (Mueller & Hancock, 2010). In contrast, a structural model examines the casual relationships between latent variables. That is, a structural model directly relates to theory testing. Because the employment of latent variables reduces error variance by utilizing several indicators per factor (i.e., latent variables), the research can improve the qualities of the constructs used (i.e., reliabilities and validity) (Mueller & Hancock, 2010). The structural models of this study consisted of the casual relationships between environmental factors (i.e., job autonomy, financial rewards, learning culture, and procedural justice) and job engagement, between environmental factors and psychological states (i.e., psychological meaningfulness and safety), and between psychological states and job engagement. In terms of measurement models, job engagement was considered a latent variable consisting of three indicators as this study adopted Kahn's (1990) conceptualization of engagement that consists of cognitive, emotional, and physical engagement from a holistic viewpoint. Financial rewards were utilized as a latent variable subsuming satisfaction with current pay, benefits, and pay raise, as

developed by Heneman and Schwab (1985), to reduce error variance. The other variables in the research model were also used as latent variables, composed of individual survey items measuring the variables.

Through SEM analysis, the following questions, in general, can be addressed: (A) "Do the parameters of the model combine to estimate a population covariance matrix (estimated structured covariance matrix) that is highly similar to the sample covariance matrix (estimated unstructured covariance matrix)?; (B) What are the significant relationships among variables within the model?; and (C) Which nested model provides the best fit to the data?" (Ullman, 2006). Question A relates to the adequacy of the model, while Question B involves hypotheses testing. Question C addresses the exploration of an alternative model through model modification. Based on these questions, SEM analysis was conducted according to the following procedures: (1) preliminary analyses of computing descriptive statistics including preliminary hypotheses testing and evaluating reliabilities and validity of the measures used, (2) structural equation modeling to assess the adequacy of the structural model developed and test hypotheses, and (3) model comparison and modification were performed to build a more parsimonious model. Through the model modification, a final model was created. The steps conducted during the data analysis are described in detail below.

Phase 1: Preliminary Analyses

The preliminary (or phase 1) data analyses were conducted according to the following two steps.

Step 1: Calculation of descriptive statistics, correlations, and reliabilities. Descriptive statistics and a correlation analysis of the variables used were performed using IBM SPSS Statistics™ as preliminary analyses. The descriptive statistics described employees' experiences

related to the constructs used in the study, such as the levels of experience in job engagement, psychological meaningfulness, and psychological safety. Correlation coefficients described interrelationships between variables. Also, the internal consistency of the measures used for this study presented based on Cronbach's alpha coefficients.

In addition, preliminary hypotheses testing was conducted using bivariate Pearson correlation to determine whether hypothesized antecedent factors had statistically significant relationships with job engagement and to ensure that those factors were appropriate to consist of the prediction model regarding job engagement (i.e., the research model for this study).

Step 2: Confirmatory factor analysis for measurement modeling. To evaluate the discriminant and convergent validity of the measures used and to evaluate the properties of the latent measures, a series of confirmatory factor analyses (CFA) were conducted. More specifically, the raw data after data screening was submitted to a model-fitting program—MPlus. A covariance matrix was utilized as input, and the hypothesized model was estimated using the robust maximum likelihood (RML) method. Maximum likelihood (ML) assumes that observed variables have multivariate normality in the distribution at the population level. This assumption can often be violated in practice (Benson, 1994). RML is an alternative method for continuous nonnormal variables (Newsom, 2017) suggested by Satorra and Bentler (1988; 1994). RML produces scaled chi-square and robust standard errors, which can deal with nonnormaity (Hu, Bentler, & Kano, 1992). Data with a sample size of 200-500 would produce good estimates using RML, while over 500 would be the best to use RML (Newsom, 2017).

The model tested in the present study consisted of the following measurement models: (a) job engagement as a latent variable composed of cognitive, emotional, and physical engagement; (b) financial rewards subsuming satisfaction with current pay level, benefits, and pay raises; and

(c) job autonomy, learning culture, procedural justice, psychological meaningfulness, and psychological safety as separate latent variables.

As suggested by Byrne (2012), the adequacy of the measurement model was evaluated based on the Chi-square goodness-of-fit test, Comparative Fit Index (CFI) (Bentler, 1990), Tucker Lewis Index (TLI) (Tucker & Lewis, 1973), Root Mean Square Error of Approximation (RMSEA) (Steiger & Lind, 1980), and Standardized Root Mean square Residual (SRMR) (Bentler, 1995; Steiger & Lind, 1980). The Chi-Square value assesses "the magnitude of discrepancy between the sample and fitted covariances matrices" (Hu & Bentler, 1999, p. 2). The RMSEA indicates how well the model with optimally chosen parameter estimates fits the population covariance matrix (Hooper, Coughlan, & Mullen, 2008). The RMSEA compensates for the effects of model complexity in that it selects a parsimonious model with less of parameters (Hooper et al., 2008). CFI and TLI assess the degree to which a model fit has been proportionately improved by comparing a hypothesized model to a nested baseline model with less restricted parameters (Byrne, 2012).

In terms of thresholds in assessing model fit, this study used .06 as a cut-off value for the RMSEA, the value recently suggested (Hu & Bentler, 1999). In terms of the other ancillary indices of global fit—the TLI and CFI—this study used a cut-off value of .90 recommended by Bentler and Bonett (1980). In addition to using the global-fit indices, in order to evaluate the impacts of specific measurement items on the model fit, I also referred to standardized root-mean-square residual (SRMR) with a threshold of .08 or lower (Hu & Bentler, 1999). In terms of a Chi-square value, although a non-significant *p* value of a Chi-square goodness-of-fit indicates adequate model fit, a Chi-square value is sensitive to sample size (Ullman, 2006). In evaluating

the fit of the hypothesized model for this study, the Chi-square value was not applied strictly because of the large sample size of this study.

On the basis of the model evaluation, the hypothesized model was identified as having an adequate model fit. Despite the reasonable model fit of the hypothesized model, I added on more fixed parameter as suggested in the MPlus. By doing so, overall model fit was slightly improved. Then, I proceeded to the next step—structural equation modeling. A detailed description of the model evaluation through CFA is provided in Chapter 4.

Phase 2: Structural Equation Modeling for Hypotheses Testing

The hypotheses of the present study were tested using SEM approach in which psychological states partially mediated the relationships between environmental factors—job elements and work context—and job engagement.

Step 1: Structural model evaluation and modification. Model fit indices of the structural model showed that the model fit was reasonable. On the basis of the model evaluation, the hypothesized model was identified as an adequate model, and thus, I conducted hypotheses testing.

Step 2: Hypotheses test for direct relationships. The hypotheses as to the direct relationships between variables were tested based on standardized parameter estimates (Jackson et al., 2009). More specifically, the significance of path coefficients was examined; a *p*-value of less than .05 was used as the criterion statistics. When the relationship between two latent variables was statistically significant ($p < .05$), the standardized parameter estimate of the relationship was evaluated according to Kline's (2005) suggestion that values (ß) less than .10 indicated a small effect, values around .30 a medium effect, and values greater than .50 a large

effect. Also, the standardized parameter estimates of the individual relationships among variables are reported in a path diagram (Mueller & Hancock, 2010) in Chapter 4.

Step 3: Mediation Analysis. This study hypothesized that psychological meaningfulness would mediate the relationships between job elements and job engagement, whereas psychological safety would mediate the relationship between work context and job engagement.

In order to analyze the mediation effects of psychological states in the relationships between environmental factors and job engagement, this study used a bootstrapping method. Bootstrapping is a nonparametric resampling procedure, which does not require the assumption of normal distribution (Preacher & Hayes, 2008). Also, bootstrapping is useful when using SEM with measurement models for independent, dependent, and mediating variables. Considering that partial mediation effects could be shown due to measurement error in hypothesized mediators, examining mediating effects in SEM using bootstrapping can reduce the spurious inferences (Shrout & Bolger, 2002).

Bootstrapping estimates an indirect effect by repeating random sampling from a dataset. That is, through a bootstrapping method, confidence intervals (CI) for an indirect effect can be constructed (Preacher & Hayes, 2008). Preacher and Hayes advocated a bootstrapping method when testing multiple mediator models. Because this study includes two mediators in the research model, bootstrapping was an appropriate approach. In addition, according to MacKinnon, Lockwood, Hoffman, West, and Sheets (2002), bootstrapping has high power with a reasonable level of Type I error rate.

For the mediation analysis of the present study, bootstrapped CI estimates for the indirect effect of job elements (i.e., job autonomy and financial rewards) and work context (i.e., learning culture and procedural justice) on job engagement through psychological states (i.e.,

psychological meaningfulness and safety) were calculated. The rule of thumb is that if the CI does not include zero, the effect is considered to be significant. In the present study, 95% CIs for the indirect effects were computed using 10,000 bootstrapped samples. Indirect effects were estimated using regression coefficients in terms of the relationships between the predictors and outcome variables through the mediators.

Phase 3: Model Modification

In research using SEM, hypothesized models are often modified for the purpose of improving model fit or testing hypotheses. When model modification is conducted, "the analysis changes from confirmatory to exploratory" (Ullman, 2006, p. 46). Although the hypothesized model showed an adequate fit to the data, a model comparison was conducted to explore more parsimonious and theoretically plausible models in terms of the effects of mediators in the relationships between environmental factors and job engagement.

Step 1. Assessment of nested models. Three nested models were built based on theoretical assumptions and assessed the extent to which model fits were improved compared to the hypothesized model. Additionally, chi-square difference tests were performed to compare the nested models to the hypothesized model. Because significant statistical differences between the hypothesized model and nested models were found, this study adopted the hypothesized model as a final model, which fit the data collected for this study better.

Step 2. Exploration of relationships between variables. As one of the nested models also had good fit to the data with parsimony, parameter estimates representing hypotheses in the nested model were compared to those in the hypothesized model. One of the parameter estimates in the nested model was different from that in the hypothesized model, and thus, reasons for the difference were explored from a statistical viewpoint.

Delimitations of the Study

This study sought to obtain a large sample size to promote the generalizability of the results. For this reason, a nonprobability convenient sampling approach was taken using an online survey platform. By doing so, this study collected a large number of responses from participants with various demographic characteristics. This enabled us to use SEM in the data analysis with a reasonable level of the power of SEM.

Despite the positive aspects, the two following delimitations exist in this study. First, because this study took a convenience sampling approach, the generalizability of the results might not be the same as those of random sampling. Thus, the results of this study cannot be generalizable through statistical inference. Rather, a logical inference is needed to generalize the study results. Second, in a similar vein, the survey conducted on MTurk could have a disadvantage in terms of unique characteristics that the sample has. Because MTurk users may share some commonality, such as an interest in technology, spending their time doing tasks on MTurk, or a less extroverted personality. These kinds of characteristics might not be consistent with other people from the targeted population, whom this study did not cover. Thus, in applying the results of the study to the target population, the generalizability of the findings may be limited.

CHAPTER 4

RESEARCH FINDINGS

This chapter reports the results of statistical analyses to answer the research questions of this study. To be specific, this chapter consists of four parts: (a) results from a preliminary analysis—descriptive statistics, reliability analysis, and correlations, (b) measurement modeling, (c) structural equation modeling for hypothesized model testing with an additional analysis for mediation testing, and (d) model modification to explore alternative models.

Descriptive Analysis

A descriptive analysis was conducted using SPSS 20 to understand the employees' perceptions regarding the research variables (means and standard deviations), the interrelationships between the variables (bivariate correlations), and the internal consistency of the measures used for this study (reliability). The results of the descriptive statistics are presented in Table 4.1. The means involve the averages of respective items measuring each research variable. The *job engagement* variable showed the highest mean (M = 4.70), while the *financial rewards* variable had the lowest mean (M = 3.85). The results also demonstrated that all the scales measuring the seven variables used in this study had a strong internal consistency, exceeding .87 ($\alpha > .70$, Kline, 2005).

To examine the direction and strength of the relationship between each hypothesized antecedent and job engagement and to verify that possible causality between independent and dependent variables, hypotheses 1, 2, and 3 were tested using a bivariate correlation analysis as a preliminary hypotheses testing. Zero-order correlation coefficients between the latent variables

revealed that all relationships postulated in Hypotheses 1, 2, and 3 were shown to be significant and positive in strong magnitudes ($r > .47$, $p < .05$). That is, job autonomy, financial rewards, learning culture, procedural justice, psychological meaningfulness, and psychological safety had positive correlations with job engagement. This result initially supported Hypotheses 1, 2, and 3 summarized in Table 4.2.

Table 4.1.

Descriptive Statistics and Bivariate correlations (N=486)

	M	*SD*	JE	PM	PS	JA	FR	LC	PJ
JE	4.70	.94	(.95)	-	-	-	-	-	-
PM	4.45	1.14	.78*	(.97)	-	-	-	-	-
PS	4.28	1.00	.57*	.54*	(.87)	-	-	-	-
JA	4.58	1.04	.47*	.53*	.65*	(.93)	-	-	-
FR	3.85	1.24	.49*	.51*	.51*	.42*	(.94)	-	-
LC	4.35	.93	.58*	.58*	.70*	.60*	.57*	(.91)	-
PJ	4.43	.95	.60*	.57*	.76*	.67*	.55*	.78*	(.91)

Note. JE: job engagement; PM: psychological meaningfulness; PS: psychological safety; JA: job autonomy; FR: financial rewards; LC: learning culture; PJ: procedural justice.
* $p < .05$.

Table 4.2.

Preliminary Hypotheses Testing: Results of Bivariate Correlation Analysis

Research Question	Hypothesis	Results
RQ 1	Hypothesis 1A: Job autonomy is positively related to job engagement.	Supported
	Hypothesis 1B: Financial rewards are positively related to job engagement.	Supported
	Hypothesis 1C: Learning culture is positively related to job engagement.	Supported
	Hypothesis 1D: Procedural justice is positively related to job engagement.	Supported
RQ 2	Hypothesis 2A: Job autonomy is positively related to psychological meaningfulness.	Supported
	Hypothesis 2B: Financial rewards are positively related to psychological meaningfulness.	Supported
	Hypothesis 2C: Learning culture is positively related to psychological safety.	Supported
	Hypothesis 2D: Procedural justice is positively related to psychological safety.	Supported
RQ 3	Hypothesis 3A: Psychological meaningfulness is positively related to job engagement.	Supported
	Hypothesis 3B: Psychological safety is positively related to job engagement.	Supported

In order to examine to what extent the hypothesized antecedents predict job engagement considering measurement error and multiple relationships between the variables, SEM was conducted. Because SEM requires the absence of multicollinearity between exogenous latent variables, correlation coefficients were checked to ensure that the assumption was satisfied. The correlations between most of the independent variables were less than .70 (Tabachnick & Fidell, 1996) except the correlations between learning culture and psychological safety (r = .70), between procedural justice and psychological safety (r = .76), and between procedural justice and learning culture (r = .78). However, the correlations were not very high (r > .85, Kline, 2005). Despite the relatively high correlations between the variables, the VIF scores were below 10 (Kline, 2005; Marquardt, 1970) and even below 4.0 (O'Brien, 2007), and the card sorting activity, described in Chapter 3, showed adequate divergent validity of the construct. For this reason, we concluded that the data was unlikely to have an issue of multicollinearity and decided to conduct further analyses for hypotheses testing.

Measurement Modeling

First, before testing relationships postulated in the hypotheses, confirmatory factor analysis (CFA) was conducted to assess the construct validity, the validity of the factor structure hypothesized. The measurement model hypothesized and tested in this study was comprised of seven latent variables and 34 observed variables. For the five latent variables, job autonomy, learning culture, procedural justice, psychological meaningfulness, and psychological safety, all items within each scale were set as observed variables. For the two latent variables—financial rewards and job engagement, because they consisted of several dimensions being measured by two or three items for each, mean scores of the items under each dimension were used as observed variables in order to reduce the complexity of the model.

To evaluate the measurement model, the method of robust maximum likelihood (RML) estimation was used as the data did not meet the assumption of multivariate normality. Several fit indices were utilized to evaluate the model fit to the data, including the Chi-square goodness-of-fit test, Comparative Fit Index (CFI), Tucker-Lewis index (TLI), Root Mean Square Error of Approximation (RMSEA), and standardized root-mean-square residual (SRMR). The results of CFA showed that the model had adequate fit (CFI and TLI > .90, SRMR < .80, and RMSEA ≤ .06, thresholds as described in Chapter 3) with reasonable factor loadings of all items onto seven latent variables (ranging from .60 to .95, $p < .001$).

Despite the proper model fit, the modification indices presented in the M*plus* output indicated that allowing a correlation of disturbances for two dimensions of job engagement—physical engagement and cognitive engagement—would reduce the score of chi-square by 173.6. Based on the suggestion, one parameter, estimating the association of the two error terms between physical and cognitive engagement, was added to the initial hypothesized model. The modified measurement model showed a slightly better fit than the initial model, CFI = .95, TLI = .95, RMSEA= .049, SRMR= .04. The factor loadings of the items onto designated constructs were reasonable ranging from .59 to .95. In addition to the modification index indicating the improvement of the model fit, adding the parameter between the residuals can also be justified by the recommendations of researchers (e.g., Markel & Frone, 1998) who affirm that similar wording of items can lead to nonconstruct common causes of responses within scales. That is, considering that 70% of the respondents for this study were white collar workers that did not perform manual labor or have direct interactions with customers, the items measuring physical engagement and cognitive engagement could be very similar to the respondents in terms of the meaning of the items.

Moreover, a single factor model was created with all observed variables loading onto one latent variable, and the model fit was assessed (Harman, 1976) to check the common method variance. According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003), there are several potential causes why the results of research can be biased by the common method. Because this study employed the same medium (i.e., an online survey) and common scale formats (i.e., a six-point Likert, self-report scale), I needed to ensure that there were no common method biases in the data. Because the single factor model showed a poor fit, CFI= .62, TLI= .60, RMSEA= .134, I concluded that common method variance did not occur in the data. Thus, Model B with the best model fit was adopted for the hypotheses testing in the following section. The model fit indices of the initial, revised, and single factor models are summarized in Table 4.3. The factor loadings of the items onto the corresponding constructs in the revised model, chosen for the hypotheses testing, are presented in Table 4.4.

Table 4.3.

Fit Indices for the Measurement Model: Confirmatory Factor Analysis (n=486)

	χ^2	*df*	CFI	TLI	RMSEA [90% CI[d]]	SRMR
Model A: Initial model[a]	1,243.68*	506	.94	.93	.055 [.051 - .059]	.05
Model B: Modified model[b]	1,103.77*	505	.95	.95	.049 [.045 - .053]	.04
Model C: One-factor model[c]	5,152.89*	527	.62	.60	.134 [.131 - .138]	.09

Note. [a]hypothesized model; [b]revised model by adding the residual term correlation to the hypothesized model; [c]single factor model to check common method variance; [d]90% confidence interval of the RMSEA. *$p < .001$.

Table 4.4.

Standardized Factor Loadings of the Items onto Corresponding Constructs: Result of the CFA

Construct	Item	Standardized Estimate (Standard Error)
Job Engagement[a]	1. I exert my full effort towards my job.	.72 (.04)
	2. I try my hardest to perform well on my job.	
	3. I strive as hard as I can to complete my job.	
	4. I am enthusiastic about my job.	.92 (.02)
	5. I feel energetic at my job.	
	6. I am excited about my job.	
	7. At work, my mind is focused on my job.	.70 (.03)
	8. At work, I pay a lot of attention to my job.	
	9. At work, I am absorbed by my job.	
Psychological Meaningful-ness	1. The work I do on this job is very important to me.	.93 (.01)
	2. My job activities are personally meaningful to me.	.94 (.01)
	3. The work I do on this job is worthwhile.	.91 (.01)
	4. My job activities are significant to me.	.95 (.01)
	5. The work I do on this job is meaningful to me.	.94 (.01)
	6. I feel that the work I do on my job is valuable.	.86 (.02)
Psychological Safety	1. Even if I make a mistake in this organization, it is not often held against me.	.69 (.04)
	2. Employees in this organization are able to bring up problems and tough issues.	.84 (.02)
	3. Employees in this organization do not reject others for being different.	.77 (.03)
	4. It is safe to take a risk in this organization.	.65 (.04)
	5. No one in this organization would deliberately act in a way that undermines my efforts.	.78 (.02)
Job Autonomy	1. My job gives me the opportunity to use my personal judgment in carrying out the work.	.88 (.02)
	2. My job gives me the opportunity for independence and freedom in how I do the work.	.93 (.02)
	3. My job gives me the opportunity to decide on my own how to go about doing the work.	.90 (.02)
Financial Rewards[b]	1. I am satisfied with my current salary.	.93 (.01)
	2. I am satisfied with my overall level of pay.	
	3. I am satisfied with my benefits package.	.70 (.04)
	4. I am satisfied with the value of my benefits.	
	5. I am satisfied with my most recent pay increase.	.92 (.01)
	6. I am satisfied with the raises I have typically received in the past.	

Construct	Item	Standardized Estimate (Standard Error)
Learning Culture	1. In my organization, people are rewarded for learning.	.75 (.03)
	2. In my organization, people spend time building trust with each other.	.81 (.02)
	3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	.76 (.02)
	4. My organization makes its lessons learned available to all employees.	.77 (.02)
	5. My organization recognizes people for taking initiative.	.82 (.02)
	6. My organization works together with the outside community to meet mutual needs.	.64 (.03)
	7. In my organization, leaders continually look for opportunities to learn.	.82 (.02)
Procedural Justice	1. In my organization, I can express my views and feelings during the procedures to evaluate my performance.	.76 (.03)
	2. In my organization, I have influence over the decisions made as a result of the performance evaluation.	.65 (.03)
	3. In my organization, the procedures used to evaluate my performance are applied consistently.	.85 (.02)
	4. In my organization, the procedures used to evaluate my performance are free of bias.	.84 (.02)
	5. In my organization, the procedures used to evaluate my performance utilize accurate information.	.86 (.02)
	6. In my organization, I can appeal the decisions made as a result of my performance review.	.59 (.04)
	7. In my organization, the procedures used to evaluate my performance uphold ethical and moral standards.	.86 (.02)

Note. [a]The mean of each dimension of job engagement was considered as a first-order factor: physical engagement, emotional engagement, and cognitive engagement; [b]The mean of each dimension of financial rewards was considered as a first-order factor: satisfaction with the pay level, benefits, and pay raises.

Structural Equation Modeling: Hypotheses Testing

This study examines the relationships between environmental factors, dividing them into two categories—(a) job elements and (b) work context, and job engagement. In addition, this study hypothesized the mediating role of the psychological states in the relationship between

environmental factors and job engagement. More specifically, it was assumed that job elements would affect job engagement through psychological meaningfulness, whereas work context would influence engagement via psychological safety. To test the hypotheses of this study, structural equation modeling was performed using the measurement Model B identified through the CFA.

Assessment of the Structural Model Fit

The overall fit statistics presented in Table 4.5 revealed that the hypothesized model had an adequate model fit. Although the chi-square value was statistically significant, other fit indices met the rules of thumb (Bentler, 1992; Bentler & Bonett, 1980; Byrne, 2012; Hu & Bentler, 1999; see Chapter 3 for detail). Given that studies with a large sample size tend to fail in the chi-square tests, the structural model was proper for testing the hypotheses of this study.

Table 4.5.

Overall Fit of the Model

	χ^2	*df*	CFI	TLI	RMSEA [90% CI[a]]	SRMR
Proposed model	1148.47**	510	.95	.94	.051 [.047 - .055]	.06

Note. [a]90% confidence interval of the RMSEA.
**$p < .001$.

Hypotheses Testing for Direct Relationships: Estimates of Regression

To answer the research questions regarding direct relationships between variables, parameter estimates in the proposed structural model were checked. SEM utilizes regression analysis to estimate causal relationships between variables. In this section, the significance and magnitude of the standardized parameter estimates were checked to assess the extent to which the pairs of two variables were related to each other. The results of the hypotheses testing using the hypothesized model (the revised model in CFA) are shown in Figure 4.1.

Research Question 1: Relationships Between Environmental Factors and Job Engagement. The first research question of this study addresses the relationships between environmental factors and job engagement. More specifically, the following question needs to be answered: (a) To what extent do the job elements and work context predict job engagement? As shown in Table 4.6, in terms of the effects of job elements on job engagement, the relationship between job autonomy and job engagement was not significant. Financial rewards, on the other hand, was found to have a significant relationship with job engagement (β = .11, p < .001). Regarding work context, learning culture did not show a significant relationship with job engagement. The effect of procedural justice on engagement was not significant. Thus, Hypothesis 1B was statistically supported, whereas Hypotheses 1A, 1C, and 1D were not upheld by the statistics.

Research Question 2: Relationships Between Environmental Factors and Psychological States. The second research question is concerned with the relationships between environmental factors and psychological states. The results of the regression in the SEM showed the effects of job elements on psychological meaningfulness. Job autonomy predicted psychological meaningfulness (β = .39, p < .001). Financial rewards were also found to predict psychological meaningfulness (β = .37, p < .001). In terms of the relationship between work context and psychological safety, learning culture was found to have a significant relationship with psychological safety (β = .29, p < .001). The results also revealed that the influence of procedural justice on psychological safety was statistically significant (β =.63, p < .001). In sum, Hypotheses 2A, 2B, 2C, and 2D were supported by the results of the regression analysis in SEM.

Research Question 3: Relationships Between Psychological States and Job Engagement. Research question 3 addresses the causal relationships between psychological

states and job engagement. The parameter estimates indicated that psychological meaningfulness was significantly related to job engagement (β = .74, p < .001), while psychological safety did not have a significant relationship with job engagement. Hence, hypothesis 3A was statistically supported, whereas 3B was not.

Table 4.6.

Estimates of Standardized Path Coefficients

Direct relationship	Standardized Estimate	Standard Error	Significance (*p*)
Job engagement ← Psychological meaningfulness	.74**	.04	.00
Job engagement ← Psychological safety	.16	.10	.09
Job engagement ←Job autonomy	-.08	.05	.08
Job engagement ← Rewards	.11*	.05	.02
Job engagement ← Learning	-.00	.07	.96
Job engagement ← Justice	.11	.10	.24
Psychological meaningfulness ← Job autonomy	.39**	.05	.00
Psychological meaningfulness ← Financial rewards	.37**	.05	.00
Psychological safety ← Learning culture	.29**	.09	.00
Psychological safety ← Procedural justice	.63**	.09	.00

* $p < .05$, ** $p < .001$.

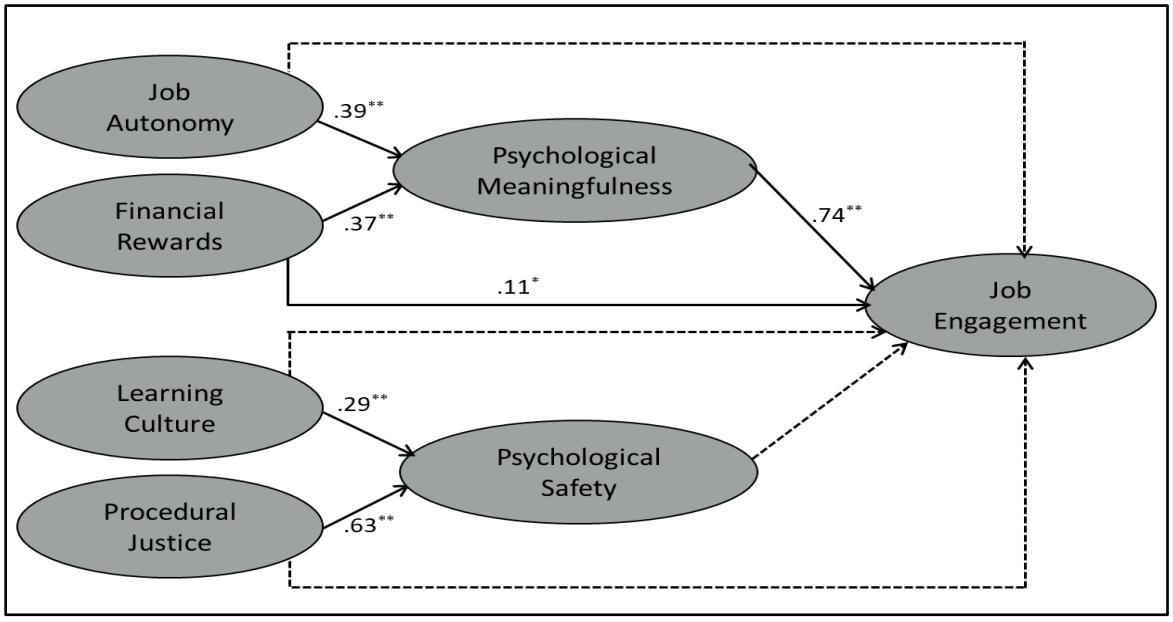


Figure 4.1. Results of Hypothesis Testing Using the Hypothesized Model: The SEM Analysis

Note. The parameter estimates are standardized coefficients (*β*). Paths with solid lines indicate statistically significant relationships (*$p < .05$, **$p < .001$); paths with dotted lines represent statistically not significant relationships.

Hypotheses Testing for Mediation Analysis: Bootstrapping

To investigate the mediating effects of the psychological states (i.e., meaningfulness and safety) between environmental factors and engagement, a mediation test was conducted using a bootstrapping approach. A bootstrapping method does not necessarily require normality of distribution and is appropriate to models with multiple mediators. Mediation effects were estimated using10,000 bootstrapped samples, and 95% confidence intervals (CI) were used in assessing the significance of the effects of the mediating variables.

Research Question 4: Mediating Effects of the Psychological States in the Relationships Between Environmental Factors and Job Engagement. The results of the mediation analysis using bootstrapping revealed that the standardized parameter estimates regarding the indirect effects of job autonomy and financial rewards on job engagement through psychological meaningfulness were both statistically significant, β = .29, 99% CI = .18, .39, p < .001 and β = .27, 99% CI = .09, .22, p < .001, respectively. Considering that the direct relationship between job autonomy and job engagement was not statistically significant, this finding indicates that psychological meaningfulness fully mediated the effect of job autonomy on engagement. The impact of financial rewards on job engagement, in contrast, was shown to be partially mediated by psychological meaningfulness.

In terms of psychological safety, the results revealed that the mediating effects of psychological safety in the relationships between learning culture and engagement and between procedural justice and engagement were not shown to be statistically significant, β = .05, 99% CI= -.01, .14, p < .001 and β = .10, 99% CI = -.05, .25, p < .001, respectively. Therefore, hypotheses 4A and 4B regarding mediation effects of psychological meaningfulness were upheld, whereas hypotheses 4C and 4D with regard to the mediating effects of psychological

safety were rejected. The results of the mediation effects examination are summarized in Table 4.7.

Table 4.7.

Bootstrap Estimates of the Mediation Effects in the Proposed Model

Path (IV→ MV→ DV)	Coefficients			BC 99% CI	
	β	SE	Z	Lower	Upper
JA→ PM→ JE	.29	.041	6.92	.18	.39
FR → PM → JE	.27	.037	7.47	.09	.22
LC → PS → JE	.05	.033	1.42	-.01	.14
PJ → PS → JE	.10	.066	1.53	-.05	.25

Note. IV = independent variable; MV = mediating variable; DV = dependent variable; *β* = standardized estimates of the mediating effect; SE = standard error; Z = Z score of estimate; BC = bias corrected; CI = confidence interval; JA = job autonomy; PM = psychological meaningfulness; JE = job engagement; FR = financial rewards; LC = learning culture; PS = psychological safety; PJ = procedural justice

Model Modification: Exploration of Parsimonious Models

The research model of this study (Model 1) represents the partial mediating effect of psychological meaningfulness in the relationships between job elements (i.e., job autonomy and financial rewards) and job engagement and the partial mediating effect of psychological safety between work context (i.e., learning culture and procedural justice) and job engagement. Although the proposed model demonstrated an adequate model fit, this study attempted to explore alternative models with more parsimony and a better fit to the data. The properties of parsimony and goodness of fit are important aspects in identifying a model in SEM (Bentler, 1990; Bentler & Bonett, 1980). SEM is a confirmatory analysis technique, but when it comes to model modification using SEM, the approach is considered to be exploratory (Ullman, 2006).

To build a parsimonious model, which also reflects the theory proposed in this study (an important aspect to consider in SEM), two nested models were built and compared to the hypothesized model. Statistically, nested models and proposed models (or comparison models)

have the same measured and latent variables, but their parameter sets are sub-sets of one another. For example, certain parameters are fixed to zero in a comparison model, while those parameters are freely estimated in a nested model (Byrne, 2012).

The two nested models for this study were both theoretically plausible. Model 2 with a full mediation of the psychological states reflected in Kahn's theory that postulated critical psychological conditions through which environmental factors lead to engagement. Model 3 addressed only the direct relationships between environmental factors and engagement without mediators as most of engagement research did.

The model fit indices of the three models are summarized in Table 4.8. First, to compare the models, a chi-square difference test was conducted using Satorra-Bentler (1988) scaling correction because of the RML estimation used for this study. The Satorra-Bentler scaled chi-square difference test examines statistical differences between two nested models. The chi-square difference values indicated that the differences between Model 1 and Model 2 (χ^2 (4) = 12.37, $p < .05$) and between Model 1 and Model 3 were significant (χ^2 (6) = 735.48, $p < .001$). This result suggested that Model 1, the hypothesized model with more parameter estimates, was a significantly improved model compared to Model 2 (full mediation) or Model 3 (direct relationships without mediation). However, as chi-square difference tests are affected by sample size, a model fit assessment was also conducted in order to explore models better fitting the data.

The overall model fit indices showed that goodness-of-fit regarding Model 2 did not have a difference from that of Model 1, whereas Model 3 had worse fit compared to Model 1. More specifically, the values of CFI, TLI, RMSEA, and SRMR are almost the same between Model 1 and Model 2. However, in terms of Model 3, the values of CFI and TLI decreased, while that of RMSEA increased. Thus, although the results of the chi-squared test demonstrated that the

hypothesized model may have a better fit to the data, the model fit indices showed that Model 2 could be better than Model 1, because the goodness-of-fit of the model is nearly the same with less parameter estimates. In other words, the results of the model comparison suggested that the full mediation of the psychological states could better explain the data with parsimony.

Table 4.8.

Fit Indices for the Alternative Models: The SEM Analysis (n=486)

	χ^2	*df*	CFI	TLI	RMSEA	SRMR	Model comparison[d]
Model 1[a]	1148.47**	510	.95	.94	.051	.06	-
Model 2[b]	1161.23**	514	.95	.94	.051	.06	M2 vs. M1: 12.37 (4)*
Model 3[c]	2054.67**	516	.87	.86	.078	.31	M3 vs. M1: 735.48 (6)**

Note. [a]The hypothesized model with partial mediation of psychological states; [b]the alternative model with full mediation of psychological states; [C]the alternative model with direct paths from environmental factors and psychological states to job engagement without mediators; [d]the Satorra-Bentler chi-square difference test.

*$p < .50$, **$p < .001$.

Hence, from a perspective of exploratory statistics, Model 2 can be considered a parsimonious model in terms of the mediation effects of psychological meaningfulness and safety in the relationships between environmental factors and job engagement. While further exploring the full mediation model (Model 2), parameter estimates of the hypothesized relationships between variables were compared to those in the proposed model (Model 1). According to the regression coefficients between variables, the results were consistent with the hypotheses testing employing Model 1 except the relationships between psychological safety and job engagement and between psychological meaningfulness and job engagement. More specifically, psychological safety was not found to be a predictor of job engagement in the partial mediation model, whereas psychological safety was shown to predict job engagement in the full mediation model. It was presumed that the difference in the parameter estimate might be caused

by multicollinearity among learning culture, procedural justice, and psychological safety. Although the VIF values did not violate the rules of thumb, the high correlation coefficients (r) showed a strong magnitude of correlations ($.70 < r < .80$). Thus, we assumed that the path coefficient between psychological safety and job engagement might be unstable due to the multicollinearity (Grapentine, 2000; Jagpal, 1982; Zigarmi, Roberts, & Randolph, 2015). The relationship between the two variables, therefore, needs to be examined in future research using different measurement models or different samples. The magnitude of the parameter estimate regarding the effect of psychological meaningfulness on job engagement was changed from .74 (in the hypothesized model) to .47 (in the full mediation model). This change might be caused by the change in the relationship between psychological safety and job engagement. In the alternative model with the full mediation effects, the significant relationship between psychological safety and job engagement might affect the relationship between psychological meaningfulness and job engagement. The comparison of the parameter estimates between the two models are summarized in Table 4.9. The results of the relationships between variables using the full mediation model from an exploratory approach are shown in Figure 4.2.

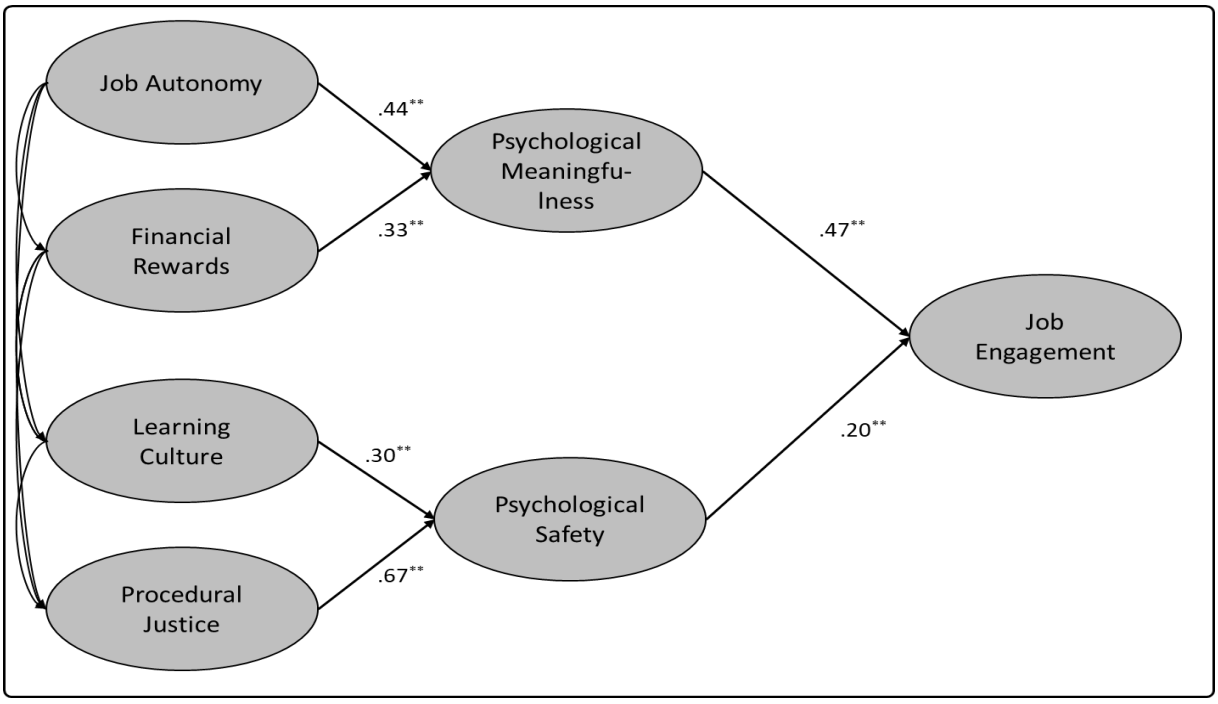
In sum, the hypothesized structural model had reasonable model fit; namely, the assumption that psychological states would have partial mediation effects in the relationships between environmental factors and job engagement was reasonable. However, the full mediation model can also be plausible; positing that psychological states would fully mediate the relationships between environmental factors and job engagement and that no direct effects between environmental factors and job engagement would exist. More evidence needs to be provided through future research on the mediation effects of psychological states.

Table 4.9.

Comparison of the Regression Estimates: Model 1 and Model 2

	Standardized Estimate (β)	
Direct relationship	Model 1: Partial Mediation	Model 2: Full Mediation
Engagement ← Meaningfulness	.74*	.47**
Engagement ← Safety	.16	.20**
Engagement ←Autonomy	-.08	-
Engagement ← Rewards	.11*	-
Engagement ← Learning	-.00	-
Engagement ← Justice	.11	-
Meaningfulness ← Autonomy	.39*	.44**
Meaningfulness ← Rewards	.37*	.33**
Safety ← Learning	.29*	.30**
Safety ← Justice	.63*	.67**

*$p < .05$, **$p < .001$.



** $p < .001$.

Figure 4.2. Alternative Model (Full-mediation Effects) of Antecedents of Job Engagement: An Exploratory Approach

Summary of the Results

This chapter presented the results of the data analyses using both bivariate (Pearson correlation) and multivariate analyses (SEM), providing answers to research questions and testing the hypotheses of this study. The results of the preliminary hypotheses testing using correlation analysis are presented in Table 4.2. The results of the final hypotheses testing using SEM are summarized in Table 4.10.

Table 4.10.

Summary of the Final Hypotheses Testing: Results of SEM

Research Question	Hypothesis	Results
RQ 1	Hypothesis 1A: Job autonomy is positively related to job engagement.	Not supported
	Hypothesis 1B: Financial rewards are positively related to job engagement.	Supported
	Hypothesis 1C: Learning culture is positively related to job engagement.	Not supported
	Hypothesis 1D: Procedural justice is positively related to job engagement.	Not supported
RQ 2	Hypothesis 2A: Job autonomy is positively related to psychological meaningfulness.	Supported
	Hypothesis 2B: Financial rewards are positively related to psychological meaningfulness.	Supported
	Hypothesis 2C: Learning culture is positively related to psychological safety.	Supported
	Hypothesis 2D: Procedural justice is positively related to psychological safety.	Supported
RQ 3	Hypothesis 3A: Psychological meaningfulness is positively related to job engagement.	Supported
	Hypothesis 3B: Psychological safety is positively related to job engagement.	Not supported
RQ 4	Hypothesis 4A: Psychological meaningfulness mediates the relationship between job autonomy and job engagement.	Supported
	Hypothesis 4B: Psychological meaningfulness mediates the relationship between financial rewards and job engagement.	Supported
	Hypothesis 4C: Psychological safety mediates the relationship between learning culture and job engagement.	Not supported
	Hypothesis 4D: Psychological safety mediates the relationship between procedural justice and job engagement.	Not supported

In addition, although the hypothesized model, including the partial mediation effects of two psychological states, had a reasonable model fit, model modification was performed to explore a more parsimonious model with a better fit to the data. In doing so, it was presumed that the alternative model with the full mediation effects of the psychological states could be a superior model to the hypothesized model. However, the alternative model was not adopted as the final model of this study on the basis of the chi-square difference test result. We suggest that the mediating effects of psychological states in the relationships between environmental factors and job engagement be investigated in future research to provide more evidence on the role of psychological states in predicting job engagement.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This chapter consists of five major sections: (a) the summary of the research findings, (b) conclusions of the study, (c) implications for theory and research, (d) implications for practice, and (e) limitations of the study and recommendations for future research.

Summary of the Findings

The purpose of this study was to examine the antecedents of job engagement and mediating roles of psychological conditions in predicting job engagement. This study tested the research hypotheses using SEM and the bootstrapping method in SEM. As presented in Table 4.9 in Chapter 4, regarding the relationships between environmental factors and job engagement (Hypotheses 1A-1D), the results of the study supported Hypothesis 1B, representing the direct relationship between financial rewards and job engagement. In terms of the relationships between environmental factors and two psychological states (Hypotheses 2A-2D), Hypotheses 2A, 2B, 2C, and 2D, reflecting the direct relationships between job elements and psychological meaningfulness and between work context and psychological safety, were supported. Also, as to the relationships between psychological states and job engagement, the findings of this study upheld Hypothesis 3A regarding the direct relationship between psychological meaningfulness and job engagement. Lastly, in terms of the mediating effect of psychological states, the results supported Hypotheses 4A and 4B, the mediation effect of psychological meaningfulness in the relationships between job elements (i.e., job autonomy and financial rewards) and job engagement. The results of the hypotheses testing using SEM analysis are shown in Figure 5.1.

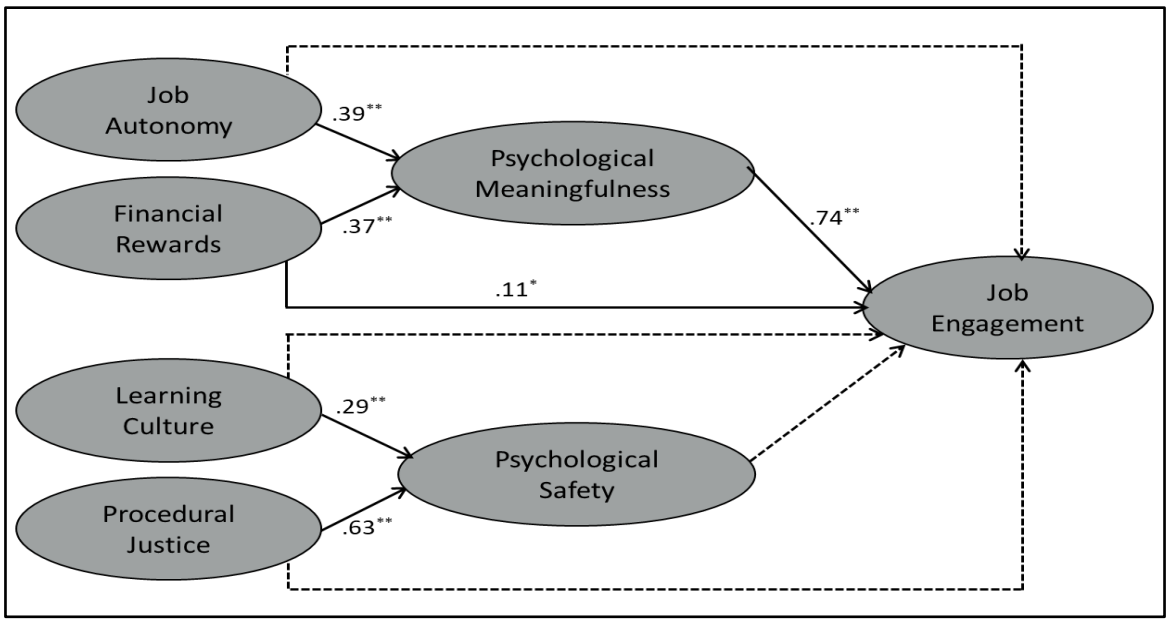


Figure 5.1. *The Relationships Between the Variables: The Results of the SEM Analysis*

Note. The parameter estimates are standardized coefficients (β). Paths with solid lines indicate statistically significant relationships ($^{*}p < .05$, $^{**}p < .001$); paths with dotted lines represent statistically not significant relationships.

Conclusions

Based on these research findings and previous research in the literature, three conclusions can be drawn: (1) Kahn's (1990) theory of personal engagement at work has been further empirically supported; (2) psychological meaningfulness substantially predicted job engagement; and (3) the effects of rewards may depend more on how much they satisfy psychological states than whether the rewards are intrinsic or extrinsic. Previous research discussed in this section is summarized in Appendix I.

Conclusion 1: Kahn's Theory of Personal Engagement at Work Has Been Further Empirically Supported

This study provides further empirical support of Kahn's (1990) theory of engagement at work. More specifically, the mediating role of critical psychological conditions in predicting job

engagement was supported and significant relationships were found between environmental factors and psychological states, as Kahn (1990) suggested.

The Mediating Role of Critical Psychological States. This study performed a mediation test using a bootstrapping method in SEM. The results showed that psychological meaningfulness fully mediated the relationships between job autonomy and job engagement and partially mediated the relationship between financial rewards and job engagement (β = .29 and β =.27, respectively, $p < .05$). The mediating effect of psychological meaningfulness is consistent with the findings of May et al.'s (2004) research. May et al. tested the relationships between situational/personal factors, three psychological states suggested by Kahn, and psychological engagement using a sample of 213 employees working at an insurance firm in the United States. May et al. developed an instrument to measure psychological engagement for their study. May et al.'s research provided evidence that psychological states (meaningfulness, safety, and availability) mediated the relationships between organizational factors/personal factors and engagement. The findings of this study particularly support May et al.'s study regarding the full mediation effect of psychological meaningfulness in the relationship between job autonomy (job enrichment in May et al.'s research) and job engagement.

Because very little evidence exists with regards to the mediation effect of psychological meaningfulness in the engagement literature, the findings of this study were compared to the evidence in the work motivation literature as well. In many empirical studies addressing the job characteristics model, meaningfulness has been shown to have mediation effects on motivational outcomes (e.g., work satisfaction and internal motivation). This study supports the findings of previous research (e.g., Fried & Ferris,1987; Johns, Xie, & Fang, 1992; Humphrey, Nahrgang, & Morgeson, 2007) which showed that autonomy affected motivational constructs through

meaningfulness. In addition to the mediation effect in the relationship between job autonomy and job engagement, this study provides additional evidence that psychological meaningfulness partially mediated the effects of financial rewards on job engagement. The role of meaningfulness in the influence of financial rewards on engagement (or motivational outcomes) has not been sufficiently addressed in previous studies. Thus, this study adds knowledge about the relationships between financial rewards, psychological meaningfulness, and job engagement to the literature.

Regarding the role of psychological safety, psychological safety did not have mediation effects in this study. In May et al.'s (2004) study, in contrast, psychological safety partially mediated the relationship between co-worker norms and engagement. There is a possibility that the inconsistency between the results of this study and May et al. might lie in the employment of different research variables; namely, this study included learning culture and procedural justice as potential predictors of psychological safety. Furthermore, the finding that psychological safety did not mediate the effect of learning culture on job engagement, as a motivational construct, is not consistent with Chen, Liao, and Wen's (2014) research. Using a sample of 208 employees in China, Chen et al. examined the relationships between formal mentoring and work outcomes (affective commitment and turnover intentions) mediated by psychological safety. Chen et al. showed that the effect of formal mentoring on affective commitment was partially mediated by psychological safety, while the impact of formal mentoring on turnover intention was fully mediated by psychological safety. These inconsistent results might be because learning culture is a comprehensive construct that includes learning at the individual, team, and organizational levels, whereas mentoring captures narrower aspects of learning. The inconsistent result could also be caused by the use of different motivational constructs; namely, job engagement in this

study and affective commitment and turnover intention in Chen et al.'s study. However, at this point, an in-depth discussion is not possible due to the lack of evidence on the mediating effect of psychological safety in the relationships between practices pertaining to learning and job engagement and between procedural justice and job engagement.

Although no significant mediation effect of psychological safety was found employing the hypothesized model in this study, the results of the model modification hinted at the possible mediation effects of psychological safety. Through the exploration of an alternative model, this study revealed that a full mediation model indicated a good fit to the data as well as the hypothesized model did. Specifically, in the full mediation model, psychological safety as well as psychological meaningfulness was found to have significant mediation effects in predicting job engagement. Although the full mediation model was not adopted as a final model of this study based on the chi-square test result, the adequate model fit of the full mediation model implies that the full mediation of the two psychological states could exist in the relationships between the environmental factors and job engagement.

Relationships Between Job Elements and Psychological Meaningfulness and Between Work Context and Psychological Safety. The relationships between environmental factors and two psychological states were tested using SEM analysis. The results demonstrated that job elements predicted psychological meaningfulness, while work context influenced psychological safety, as Kahn (1990) suggested. Specifically, job autonomy and financial rewards had significant effects on psychological meaningfulness with moderate magnitudes (β = .39 and .37, respectively, $p < .001$). Learning culture was significantly related to psychological safety with a moderate magnitude ($\beta = .29$, $p < .001$), and procedural justice also had a significant relationship with psychological safety with a strong magnitude ($\beta = .63$, $p < .001$)

In relation to engagement research, these results are similar to those of May et al.'s (2004) research. May et al. included the positive relationships between job enrichment and psychological meaningfulness and between co-worker norms and psychological safety in their research hypotheses and proved that those relationships were statistically significant. As job autonomy, a research variable in this study, is a dimension of job enrichment, the result of this study empirically confirms May et al.'s finding. Also, learning culture and procedural justice somewhat overlap with co-worker norms in that all three of the constructs connote the extent to which organizational norms allow employees to behave differently from others. In this way, the result of this study is consistent with May et al.'s research.

Additionally, this study adds evidence to the literature by demonstrating the impact of financial rewards on psychological meaningfulness, which was not explicitly suggested by Kahn (1990) but mentioned by Saks (2006). Moreover, in the job design literature from which Kahn drew the framework of psychological states connecting environmental or personal factors to job engagement, previous research on the job characteristics model (e.g., Fried & Ferris, 1987; Johns, Xie, & Fang, 1992) has shown that meaningfulness was influenced by core job dimensions. The results of this study support the evidence in this job design literature by showing the positive relationship between job autonomy and psychological meaningfulness.

As a broader exploration of the evidence on predictors of psychological meaningfulness in the current literature, due to scarce evidence on the effects of psychological meaningfulness in the engagement literature, research addressing meaningful work was reviewed. Fouché, Rothmann, and van der Vyver (2017) examined antecedents (i.e., calling orientation, job design, and co-worker relations) and consequences of meaningful work (i.e., burnout, work engagement, intention to leave, and performance). Fouché et al. used a sample of 513 teachers at public

schools in South Africa. The results of Fouché et al.'s (2017) research demonstrated that meaningful work was predicted by calling orientation, job design, and coworker relations. The results of this study support Fouché et al.'s finding regarding the effect of job design on meaningful work. Fouché et al.'s construct of meaningful work is not the same concept as psychological meaningfulness; however, as described in the following section, the two constructs may share some predictors explaining the variance in each construct in different portions.

In terms of predictors of psychological safety, research in the organization behavior literature was reviewed. In previous research, leader's context support (e.g., Edmondson, 1999), collective thinking (e.g., Gu, Wang, & Wang, 2013; Schulte, Cohen, & Klein, 2012), and the strength of social networks between members and the organization (e.g., Carmeli, 2007) were found to have influences on psychological safety. The results of this study are consistent to some extent with the findings of the previous studies in that learning culture might share substantial variance with supportive leadership, collective thinking, and social networks between members and the organization. However, when it comes to the impact of procedural justice on psychological safety, we could not find evidence in the literature.

Conclusion 2: Psychological Meaningfulness Substantially Predicted Job Engagement

In this study, the direct effects of two psychological states, meaningfulness and safety, on job engagement were tested using SEM. Psychological meaningfulness was found to be a predictor of job engagement, while psychological safety did not have a significant relationship with job engagement. For this reason, the effect of psychological meaningfulness is mainly discussed in this section.

The result of this study, especially, showed that psychological meaningfulness had a strong effect on job engagement ($\beta = .74$, $p < .001$), even controlling for the effects of

environmental factors on job engagement. No significant effects on job engagement were found in the environmental factors and psychological safety except financial rewards (β = .11, p < .05). Thus, comparing to the effects of the other research variables on job engagement in this study, psychological meaningfulness had a great deal of effect on job engagement. This result supports May et al.'s (2004) findings. In May et al.'s research, the direct effect of psychological meaningfulness on engagement was strong (β = .74), controlling for the effects of psychological safety (β = .23, p < .05), psychological availability (β = .28, p < .05), and other distal factors on engagement. The results of this study also support the significant effect of meaningfulness on engagement found by Soane, Shantz, Alfes, Truss, Rees, and Gatenby (2013). Soane et al. examined the relationship between meaningfulness and employee engagement using a sample of 625 employees working for a service organization in the United Kingdom. Soane et al. employed the UWES to measure employee engagement. In Soane et al.'s research, meaningfulness was shown to have a strong effect on engagement (β = .69, p < .05) after controlling for gender, age, and survey method. Moreover, Soane et al. tested whether or not meaningfulness and engagement were actually a single factor, and results of the CFI showed that meaningfulness and engagement represented different factors. Thus, in Soane et al.'s study, psychological meaningfulness proved to be a unique, substantial influencing factor of engagement.

In addition, from a broader perspective on psychological meaningfulness, the results of this study support Fairlie's (2011) study. Fairlie examined the effects of meaningful work, intrinsic rewards, extrinsic rewards, leadership and organizational features, supervisory relationships, coworker relationships, organizational support, and work demands and balance on engagement. The sample for Fairlie's study was 574 employees in the United States and Canada, and the UWES was used in measuring engagement. Fairlie revealed that meaningful work had a

positive, unique effect on engagement. More specifically, Fairlie (2011) showed that the regression coefficient (β) of meaningful work was .64 ($p < .001$), which suggested that meaningful work was a strong predictor of engagement. In Fairlie's study, the other research variables other than intrinsic rewards and meaningful work did not influence engagement. In addition, after controlling for meaningful work, the effect of intrinsic rewards was substantially reduced (from $\beta =. 63$, $p < .001$ to $\beta = .18$, $p < .01$). This implies that a large portion of the variance in engagement can be explained by meaningful work. As described previously, although the construct of meaningful work is a more comprehensive concept than psychological meaningfulness, they may share some portion of variance connoting the meaning of work to the person performing the work. Thus, discussion of the results of this study can be made in relation to Fairlie's study and supports his findings.

On the other hand, this study does not entirely support Fouché et al.'s (2017) research in which the effect of psychological meaningfulness on job engagement was not as strong as the effect shown in this study. Fouché et al. examined the hypotheses on the direct effects of meaningful work, calling orientation, job design, and co-worker relations, at the same level, on work engagement. Fouché et al.'s research revealed that all four of the variables were significantly related to work engagement. However, the path coefficient of meaningful work indicated a weak relationship ($\beta = .18$, $p < .001$), a slightly lower effect than job design and co-worker relations indicated ($\beta = .21$, $p < .001$ for both). The magnitude of the relationship between psychological meaningfulness (meaningful work in Fouché et al.'s study) and job engagement could be different, because the scopes of the two constructs, psychological meaningfulness and meaningful work, are different or because different scales were utilized to measure engagement in two studies.

Conclusion 3: The Effects of Rewards May Depend More On How Much They Satisfy Psychological States Than Whether the Rewards Are Intrinsic or Extrinsic

In this study, a bivariate correlation analysis was conducted as preliminary hypotheses testing to answer the research questions in terms of the relationships between the independent (i.e., environmental factors and psychological states) and dependent variables (i.e., job engagement). The results of the analysis showed that all the hypothesized antecedents had strong, positive relationships with job engagement ($r > .47$, $p < .05$). Next, a multivariate analysis using SEM was conducted to assess the extent to which four environmental factors (job autonomy, financial rewards, learning culture, and procedural justice) affected job engagement, while controlling for the variance of two psychological states in explaining job engagement. This multivariate analysis yielded a more robust portrait of the complex nature of the relationships between the environmental factors and job engagement. More specifically, the results regarding the direct relationships between environmental factors and job engagement showed that financial rewards as extrinsic rewards predicted job engagement ($\beta = .11$, $p < .05$), whereas job autonomy (an intrinsic reward), learning culture (an intrinsic reward), and procedural justice (an extrinsic reward) did not. In addition, this study revealed that both intrinsic (job autonomy) and extrinsic rewards (financial rewards) had indirect effects on job engagement through psychological meaningfulness in similar magnitudes ($\beta = .29$ and $\beta = .27$, respectively, $p < .05$).

Relative Importance of Intrinsic and Extrinsic Rewards in Predicting Job Engagement. Based on the results described above, within this study no consistency in the effects of the rewards on job engagement was found according to the category of extrinsic and intrinsic rewards. That is, this study did not reach a conclusion that extrinsic or intrinsic rewards were more effective in fostering job engagement. Instead, the results revealed that both the

intrinsic (i.e., job autonomy) and extrinsic rewards (i.e., financial rewards) influenced job engagement through psychological meaningfulness. In addition to the indirect effect, only financial rewards were shown to have a direct effect on job engagement with a small magnitude, even after controlling for the effects of the psychological states on job engagement.

In fact, intrinsic rewards have generally been believed to be superior to extrinsic rewards regardless of the contexts, including education and business, as intrinsic rewards enhance intrinsic motivation. However, contradictory evidence also exists in the literature. For example, Cerasoli, Nicklin, and Ford (2014) conducted a meta-analysis study on intrinsic motivation and extrinsic rewards in predicting performance. In doing so, Cerasoli et al. used 183 independent previous empirical studies, conducted between 1971 and 2014, with 212,468 respondents from school, work, and physical domains (e.g., sports and physical activities for health). They found that intrinsic motivation was effective in increasing performance whether or not extrinsic incentives were provided. On the other hand, the study also showed that when extrinsic rewards were contingent directly upon performance, intrinsic motivation was less effective in predicting performance. Moreover, Cerasoli et al. demonstrated that intrinsic motivation accounted more for the variance in quality of performance, while extrinsic rewards better predicted quantity of performance. Hence, Cerasoli et al. suggested that extrinsic rewards and intrinsic motivation need to be considered together to increase performance.

In addition, arguments have been made that the effects of intrinsic and extrinsic rewards depend on who the people are and what their needs are. For example, Reif (1975) explored 354 employees' perceptions of organizational rewards in terms of the importance of rewards and need dissatisfaction to test the contrasting assumptions that job satisfaction and productivity are better predicted by intrinsic or extrinsic rewards. In Reif's (1975) study, employees' perceptions

of the importance of and dissatisfaction with intrinsic and extrinsic rewards were measured using an instrument developed for the study. Items measuring intrinsic rewards included rewards addressing social needs, esteem needs, autonomy needs, and self-actualization needs, while items assessing extrinsic rewards subsumed compensation packages, work conditions, and job security. Reif concluded that the needs of employees and characteristics of employees' contexts led to different results in terms of the effects of the rewards. Reif, hence, argued that a contingency approach to rewards is needed rather than taking either assumption. Similarly, in their meta-analysis, Cerasoli et al. (2014) showed that age had a strong, positive relationship with intrinsic motivation and claimed that certain demographic characteristics may be related to intrinsic motivation.

Mottaz (1985) investigated the relative importance of intrinsic task rewards, extrinsic social rewards, and extrinsic organizational rewards in predicting work satisfaction according to employee groups. In doing so, Mottaz used a sample of 1,385 full-time employees of five occupational groups (professional, managerial, clerical, service, and blue-collar groups) working for a university, elementary schools, a manufacturing company, a service company, a health care organization, and a law enforcement agency. Mottaz demonstrated that the relationships between extrinsic organizational rewards and work satisfaction were different depending on the participants' levels of occupation, income, and status. In a similar sense, in the engagement literature, Hulkko-Nyman et al. (2012) examined the relationship between total rewards perceptions and work engagement using a sample of 154 Finnish employees and 137 Italian employees. The UWES was employed in measuring engagement. Hulkko-Nyman et al. revealed that the effects of monetary rewards on work engagement were shown to be different according to the samples of the study (i.e., Finnish and Italian).

The Effects of the Environmental Factors on Job Engagement. The results of this study did not show a consistency in the effects of the four environmental factors on job engagement according to the categories of intrinsic and extrinsic rewards. To discuss these findings, the results of this study (the effect of each environmental factor on engagement) were compared to the evidence in the engagement literature. First, regarding the effect of financial rewards on engagement, the results of previous research have been contradictory. The significant effect of financial rewards on job engagement found in this study is consistent with Koyuncu et al.'s (2006) research that examined antecedents of work engagement using a sample of 286 managerial and professional women in Turkey. Koyuncu et al. included personal demographic, work situation characteristics, and work life experiences as antecedents of engagement and measured engagement employing the UWES. The researchers demonstrated that rewards and recognition had a significant effect on all three components of work engagement (vigor, dedication, and absorption).

Also, the finding of this study partly supports Alfes et al.'s (2013) study. Alfes et al. tested the effects of line manager behavior and HRM practices on engagement. The researchers collected 1,796 survey responses from employees of service-sector organizations in the United Kingdom and utilized a scale developed by Soane et al. (2012) in assessing engagement levels. The result of Alfes et al.'s research revealed that HRM practices had a significant effect on engagement. The finding of this study is also somewhat consistent with Hulkko-Nyman et al.'s (2012) research on total rewards perceptions and work engagement, which suggested that the effects of monetary rewards on engagement depend on the context from which a research sample is drawn.

In contrast, the significant effect of financial rewards on job engagement is different from the findings of some empirical studies (e.g., Fairlie, 2011; Saks, 2006; Sarti, 2014) which have evidenced that financial rewards did not have a significant relationship with engagement, and intrinsic rewards (e.g., learning opportunities and HRD practices) were significantly related to engagement. To be more specific, as described previously, Fairlie (2011) revealed that financial rewards did not have a relationship with engagement, while testing the variable with other research variables (e.g., intrinsic rewards, leadership and organizational features, and organizational support). Saks (2006) examined the relationships between several factors (i.e., job characteristics, perceived organizational support, supervisor support, rewards and recognition, procedural justice, and distributive justice) and job engagement, using 102 employees of various organizations in Canada. Saks developed a scale to assess job engagement for his study. The results of Saks' research revealed that rewards and recognition did not predict job engagement. Sarti (2014) collected 167 data from employees of nine long-term care facilities in Italy. In Sarti's research, the UWES was utilized to measure engagement. She showed that financial rewards did not have an effect on engagement, while controlling for learning opportunity, decision authority, supervisor and coworker support, and performance feedback.

In terms of the effects of job autonomy, some empirical studies have tested the relationship between job autonomy and engagement. In this study, job autonomy did not show a significant, direct relationship with job engagement. This result is consistent with Menguc et al. (2013). Menguc et al. used a sample of 482 employees and customers in retail stores and assessed work engagement using an instrument developed by Salanova et al. (2005). The researchers hypothesized and demonstrated that job autonomy had a moderating effect in the relationship between supervisor feedback and work engagement rather than having a direct effect

on engagement. Similarly, Van De Voorde, Van Veldhoven, and Veld's (2016) study evidenced that job autonomy did not have a relationship with work engagement, while examining the effect of job autonomy with those of other variables (i.e., job variety, job demands, empowerment HRM, labor productivity). In Van De Voorde et al.'s research, 311 survey responses from employees in a general hospital were analyzed, and the UWES was employed for measuring work engagement.

The relationship between procedural justice and job engagement has been tested in some empirical studies on engagement. The finding of this study supports the findings of Saks's (2006), He, Zhu, and Zheng's (2014), and Inoue et al.'s (2010) studies. More specifically, Saks's research, described previously in detail, found that procedural justice did not predict job engagement. He et al. (2014) examined the effect of procedural justice on engagement mediated by organizational identification and the effect of moral identity centrality on engagement moderated by procedural justice. He et al.'s research measured engagement using the JES developed by Rich et al. (2010), and the sample of the research was 222 employees working at a financial service organization in the United Kingdom. He et al. found that procedural justice affected engagement through organizational identification, while no direct relationship existed between procedural justice and engagement. Inoue et al. (2010) investigated the relationship between procedural and interactional justice and engagement, using 243 data collected from a manufacturing company in Japan. The UWES was utilized in assessing engagement levels. The researchers proved that procedural justice did not have a direct effect on engagement.

On the other hand, the finding of this study is not consistent with Moliner, Martínez-Tur, Romos, and Cropanzano's (2008) and Karatepe's (2011) research which revealed the positive effect of procedural justice on work engagement. To be more specific, Moliner et al. (2008)

examined the effects of organizational justice on extra-role customer service via engagement and burnout. In Monliner et al.'s (2008) study, engagement was measured using the UWES. The sample of their study consisted of 317 employees of service organizations in Spain. Monliner et al. found that procedural justice had a significant effect on engagement ($\beta = .27$, $p < .05$). Karatepe (2011) investigated the effect of procedural justice on work outcomes through work engagement. In his study, engagement was assessed utilizing the UWES, and a sample of the study was 143 full-time frontline employees working at hotels in Nigeria. Karatepe's study showed that procedural justice had a significant relationship with work engagement ($\beta = .36$, $p < .001$), while controlling for demographic characteristics (i.e., industry, gender, and tenure).

Regarding the effect of learning culture on job engagement, the result of this study is not consistent with Park, Song, Yoon, and Kim's (2014) research. Park et al. examined the mediating effect of engagement in the relationship between learning organization and innovative behavior, using a sample of 326 employees of various companies in Korea. In measuring engagement, the UWES was employed, and the relationships between three latent variables of leaning organization, engagement, and innovative behavior were tested. Park et al. showed that a learning organization (i.e., learning culture) had a positive relationship with work engagement ($\beta = .50$, $p < .05$).

As the construct of learning culture is concerned with learning in organizations, previous research addressing the effects of participation in formal and informal learning practices on engagement were compared to this study. Previous studies (e.g., Sarti, 2014; Shuck, Rocco, & Albornoz, 2011; Shuck, Twyford, Reio, & Shuck, 2014) have confirmed that opportunities for learning, such as on the job training, informal learning, employee development programs, and organizational support for participation in learning, had significant influences on engagement.

For example, Shuck, Twyford, Reio, and Shuck (2014) examined the relationship between perceived support for participation in HRD practices and engagement in order to investigate the mediating role of engagement in the relationship between participation in HRD and intention to turnover. In Shuck et al.'s research, 207 employees working in the health care industry participated in a survey, and engagement was measured using the JES developed by Rich et al. (2010). Shuck et al.'s (2014) research demonstrated that perceived support for participation in HRD had a positive effect on engagement ($\beta = .26$, $p < .001$).

Shuck, Rocco, and Albornoz (2011) conducted a qualitative research to explore employees' experience of being engaged and the factors that contributed to promoting engagement. A large multinational service company participated in their research. The results of a document analysis, interviews and observations revealed that one of the important factors that fostered employees' engagement was opportunities for learning. Furthermore, given that research on learning organization (e.g., Dirani, 2009; Egan, Yang, Bartlett, 2004; Joo & Shim, 2010; Wang, 2007) has evidenced that learning culture is positively related to work motivation, including job satisfaction and organizational commitment, the results of this study are not very consistent with the previous research and are somewhat surprising. Thus, more investigation is needed in terms of the influence of learning culture on engagement.

In summary, the effects of job autonomy as an intrinsic reward and financial rewards and procedural justice as extrinsic rewards have not shown to be consistent in predicting engagement. By contrast, constructs relating to learning in organizations (learning culture in this study) have been found to be predictors of engagement in many studies. Considering these discussions, it seems that the general assumption that intrinsic rewards would be more effective than extrinsic rewards in fostering engagement at work might oversimplify the relationships between

motivators and engagement. These relationships might have been affected by which variables were controlled for and by what instrument was used to measure engagement. Moreover, those relationships are likely to be complex in ways that environmental factors affect job engagement through psychological states.

Implications for Theory and Research

The findings of the current study advance the knowledge base of engagement at work, especially regarding how to foster job engagement. This section highlights three implications for engagement theory and research: (1) empirical support of Kahn's theory of engagement, (2) congruency between conceptualization and measurement, and (3) employment of a rigorous guiding framework.

Empirical Support of Kahn's Theory of Engagement

The results of this study provide further empirical evidence regarding Kahn's theory of engagement, which argues that the level of an employee's engagement is increased or decreased depending on the employee's experience with psychological conditions that are influenced by contextual and personal factors. Although the concept of engagement at work has received a great deal of attention from researchers, no accepted theory of engagement exists or has been predominantly applied in engagement research (Saks & Gruman, 2014). Because of the various foundations undergirding the research on engagement, the extant empirical literature on engagement is disjointed (Shuck, 2011). Since research needs to formulate questions and establish research models based upon the knowledge that has been proven (i.e., what we know and what we do not know), this lack of accumulated evidence and absence of an accepted theory in the current literature impedes researchers from expanding the knowledge base on engagement at work. This study contributes to the literature by supporting Kahn's theory of engagement.

First, this study empirically supports Kahn's argument that job elements predict psychological meaningfulness, while work context influences psychological safety. Richer knowledge about the effectiveness of the six predictors tested (job autonomy, financial rewards, learning culture, procedural justice, psychological meaningfulness, and psychological safety) was also provided throughout this study. That is, this study added evidence that psychological meaningfulness may be a strong predictor of job engagement, consistent with Shamir's (1991) claim that a person is motivated by a certain task, not because it contains intrinsic rewards, but because it is meaningful to the person.

Moreover, this study adds evidence to the literature by examining the effects and role of psychological meaningfulness and psychological safety, which few previous studies have addressed. This study evidences the mediating effects of psychological meaningfulness in the relationships between job elements and job engagement. Also, in exploring an alternative model, this study shows that psychological safety can be a mediator in the effect of work context on job engagement. The mediating role of psychological states has been emphasized in the literature both on engagement and on work motivation. Saks and Gruman (2014) claimed that "Kahn's (1990) theory is more convincing as it specifies the psychological conditions that lead to engagement as well as the factors that influence each of the psychological conditions" (p. 163). In a similar sense, in research on job design and work motivation, Hackman and Oldham (1976) and Fried and Ferris (1987) demonstrated that two psychological conditions (i.e., experienced meaningfulness and responsibility) explained internal work motivation much more than job dimensions did. The empirical evidence provided by this study regarding the critical role of psychological states can also be supported by motivational theories that framed this study (i.e., Deci, 1971; Maslow, 1943; Porter & Lawler, 1968) (Figure 5.2). Those motivational theories

assert the importance of human needs satisfaction to increase motivation. Based on the empirical and theoretical support of Kahn's theory discussed above, we, therefore, suggest that Kahn's (1990) theory of engagement at work be considered "the" theory of engagement, in which future study can be grounded.

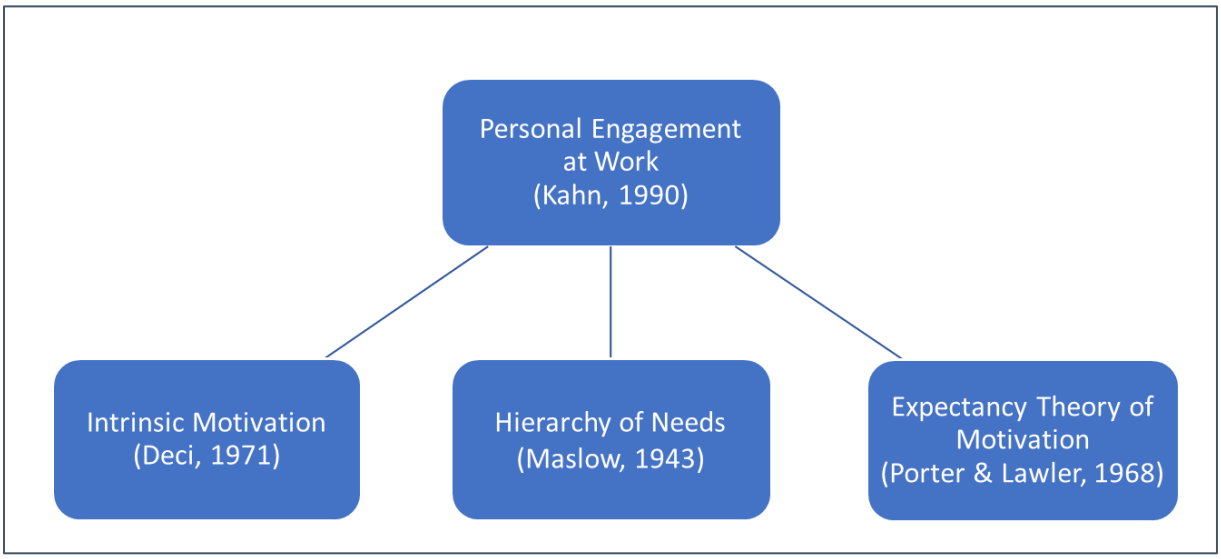


Figure 5.2. Guiding Framework of This Study

Congruency Between Conceptualization and Measurement

This study contributes to advancing the literature on engagement by aligning the conceptualization of engagement with the measurement. Shuck (2011, 2013) has persistently argued that the designs of some previous research on engagement were not sophisticated in terms of the connectedness between the research questions, definition, and measurement. The literature on engagement cannot be substantially and continuously developed in proportion to the number of empirical studies being conducted if the engagement researchers do not maintain consistency among the research questions about, conceptualization of, and measurement for engagement. Saks and Gruman (2014) made the following assertion concerning the important aspects that researchers who wish to expand the engagement literature must keep in mind:

> However, given where we are today, it is perhaps a good time to step back and assess the past 10 years of research on employee engagement. It does not make much sense to continue to study employee engagement if it remains plagued by concerns about its meaning and measurement. If we don't address these concerns now, it will be difficult to move forward toward a science of employee engagement that can meaningfully be translated into practice. (p. 179)

In the current empirical literature on engagement, the most popular instrument assessing engagement is the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006), drawn from the burnout literature. In fact, in spite of its popularity, issues with the validity of the UWES have been raised. Despite the issues, researchers may have used the instrument frequently due to its convenience and that it has been validated in many countries. By contrast, a dominantly used measure that evaluates Kahn's conceptualization has not been adopted. Because of all of this, there are inconsistencies between conceptualization (e.g., adopting Kahn's conceptualization) and measurement (e.g., using the UWES). Some cases may also exist in which researchers employed the concept of engagement drawn from the burnout literature in order to utilize the UWES because no measure has been sufficiently validated or dominantly used for Kahn's construct. Measures drawn from Kahn's conceptualization need to be extensively validated to precisely measure Kahn's definition of engagement and to test Kahn's theory.

Hence, this study addresses this gap in the current literature. This study drew on the construct of engagement from Kahn's (1990) conceptualization and operationalized the concept using Rich et al.'s (2010) definition of job engagement. Kahn's conceptualization was adopted because this concept more comprehensively explains the phenomenon of engagement—cognitive, emotional, and behavioral self in role—and because the concept is distinct from other

motivational constructs. Rich et al.'s definition of job engagement was selected because it reflects Kahn's concept by developing a multidimensional construct that consists of cognitive, emotional, and physical engagement. To measure the operationalized construct, this study employed Rich et al.'s job engagement scale (JES). The results of this study reveal that the JES established a strong level of reliability. Also, the nine items of the JES selected for this study reflect the construct of job engagement, although the error terms of physical engagement and cognitive engagement were found to have a strong correlation (r = .58) similar to Shuck, Adelson, Reio's (2016) study. Hence, not only does this study add to the empirical evidence on Kahn's theory of engagement, but it suggests that the JES can be used in future research adopting Kahn's conceptualization and testing Kahn's theory.

Employment of a Rigorous Guiding Framework

This study established a guiding framework by combining several motivational theories. Kahn's (1990) grounded theory suggests the process of developing engagement with influencing factors. However, stronger foundational theories needed to be employed to better understand engagement antecedents and the relationships between antecedents and engagement proposed by Kahn.

This study contributes to the literature by designing a research model based on a rigorous guiding framework. In other words, Kahn's (1990) theory was combined with the following motivational theories, all of which emphasize human needs satisfaction in motivation: Maslow's (1943) hierarchy of needs, Deci's (1971) intrinsic motivation, and Porter and Lawler's (1968) expectancy theory of motivation. The guiding framework helped to specifically explain what factors influence job engagement and how and why these factors may increase job engagement. More specifically, this study examined the relationships between four environmental factors and

job engagement through two psychological states, providing a more balanced and integrated approach between both extrinsic and intrinsic motivators and between job elements and work context. The framework guided us in translating Kahn's theory into four specific variables according to the four quadrants (Figure 5.3). In particular, the three of these variables of job autonomy, learning organization, and procedural justice have not been examined much in previous research on antecedents of engagement. In this regard, this study adds significant evidence to the literature by integrating Kahn's theory with foundational motivation theories.

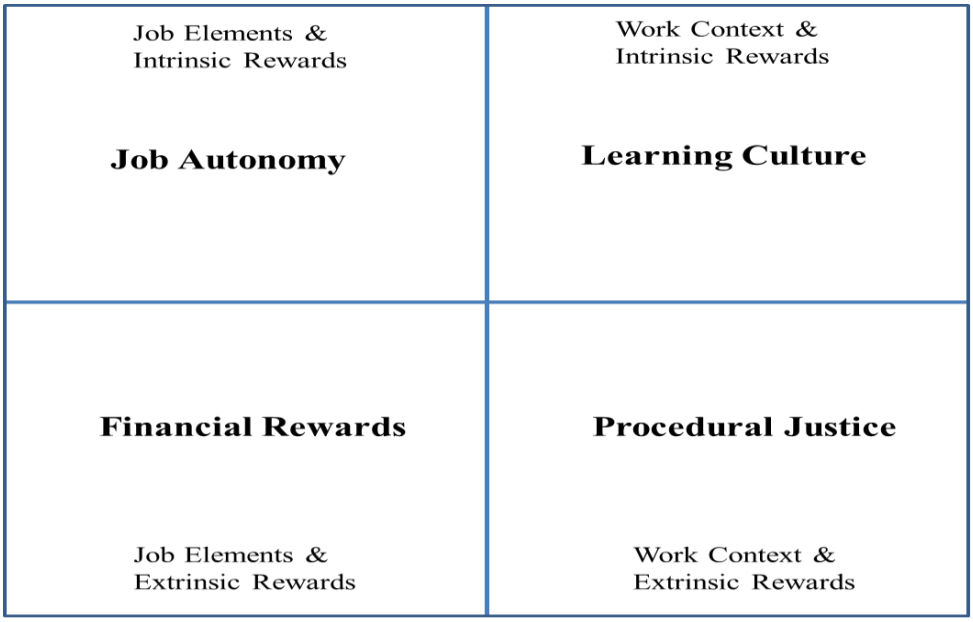


Figure 5.3. *The Environmental Factors Tested in this Study: The Four Quadrants Employed*

As a result, this study revealed that psychological meaningfulness was a strong predictor of job engagement. Compared to the influence of psychological meaningfulness on job engagement, no substantial predictors of job engagement were found except for the significant, but weak, effect of financial rewards. In addition, this study shows that because of psychological meaningfulness, job autonomy had an indirect effect on job engagement. Moreover, in the alternative model, this study demonstrates that both psychological meaningfulness and psychological safety could mediate the relationships between environmental factors and job

engagement. This implies that satisfaction with psychological states would be critical in the development of motivation (Deci, 1971); and the environmental factors would not effectively promote job engagement levels if they do not help an employee to experience psychological states.

Moreover, when it comes to the relative importance of intrinsic and extrinsic rewards on job engagement, the findings of this study support Porter and Lawler's (1968) argument that how much an employee is satisfied with the rewards they receive is more important than whether the rewards are intrinsic or extrinsic. The findings of this study imply that it might be more meaningful to explore what environmental/personal factors predict which psychological states and, in turn, influence job engagement, rather than distinguishing between the effects that intrinsic and extrinsic rewards have in predicting job engagement.

Implications for Practice

The findings of this study provide practitioners with knowledge about what kinds of interventions could be effective to foster engagement at work and what instrument can be used to accurately diagnose employees' job engagement levels. More specifically, four potential implications are highlighted as described in detail below.

First, employees' job engagement levels need to be assessed before, during, and after engagement interventions using a precise instrument in order to design and implement more effective engagement interventions. Even though many instruments have been used by consultants and HR practitioners, few of them measure what they are supposed to measure (Saks & Gruman, 2014). Without a precise assessment of engagement levels, it is difficult to diagnose whether or not employees are engaged in their jobs and to what degree engagement interventions contribute to enhancing employees' engagement with their jobs. For this reason, HRD and OD

professionals must have a clear understanding as to what engagement is (i.e. definition) and strive to use an accurate way to assess engagement levels. In this respect, the findings of this study provide a significant implication for practitioners.

This study suggests employing the job engagement scale (JES) (developed by Rich et al., 2010), an instrument measuring the degree to which employees are willing to invest their cognitive, emotional, and physical energies in their jobs. The JES was developed based on a valid definition of job engagement, and this study evidences that the scale has a strong level of reliability. In addition, based on the results of the CFA in this study, we logically presume that the items of the JES assess the construct of job engagement. Therefore, practitioners can use the JES to more precisely measure employees' job engagement levels.

Second, HR/OD practitioners need to pay attention to whether or not their interventions for job engagement facilitate employees' experience of meaningfulness. The findings of this study imply that employees' psychological meaningfulness is critically important to employees' engaging with their work. That is, in fact, if engagement interventions such as career development, monetary incentives, continuing education, and empowerment practices do not meet employees' meaningfulness, the interventions might not accomplish their intended aims. This strongly points to the need for organizations to deeply consider how to address and improve employees' psychological states, especially meaningfulness. In designing and implementing engagement programs, HRD, HRM, and OD professionals can diligently communicate with employees to better understand what meaningfulness means to them (Fairle, 2011) and how they perceive engagement programs as related to experiencing meaningfulness at work.

In addition, both intrinsic and extrinsic rewards need to be taken into account together to improve engagement. The findings of this study demonstrate that certain extrinsic rewards (i.e.

financial rewards including the current pay level, benefits, and pay raises) directly and indirectly influence job engagement, while the type of intrinsic reward (i.e. job autonomy) indirectly affects job engagement. The findings imply that both extrinsic and intrinsic rewards can be effective if they facilitate employees' sense of meaningfulness.

Furthermore, this study revealed that financial rewards influenced job engagement without facilitating psychological meaningfulness, while intrinsic rewards did not. As discussed in the conclusions section, previous studies are inconsistent in terms of the relative importance of extrinsic and intrinsic rewards. This study suggests that the effects of intrinsic and extrinsic rewards in increasing engagement levels could be different depending on employees' characteristics, such as age, gender, job types, and performance levels. This claim can be supported by the findings of some previous research (e.g., Cerasoli et al., 2014; Hulkko-Nyman et al., 2012; Mottaz, 1985) which showed that the relative effects of extrinsic and intrinsic rewards on work motivation were different according to employee groups. Thus, we suggest that organizations consider a more refined approach to addressing the needs of different segments of employees.

Lastly, HRM and HRD processes need to be integrated (Ruona & Gibson, 2004) in order to take a "comprehensive, integrated, coordinated, and dynamic approach" (Ruona & Gibson, p. 59) to foster engagement. In general, in many organizations, HRM programs (e.g., compensation, annual performance reviews, and promotion) often address extrinsic rewards, while HRD programs (e.g., coaching, mentoring, and career development) tap into intrinsic rewards. However, some interventions such as transformational leadership for employees utilize an integrated approach to coordinate both respects of intrinsic and extrinsic rewards. The separated processes might not be very helpful to promote engagement. A synergistic effect can

be created (Barney & Wright, 2001) by integrating HRD and HRM to help employees engage with their work by fostering their psychological meaningfulness and safety.

Limitations and Recommendations for Future Research

The present study has several limitations. First, this study did not examine the role of psychological availability and the effects of personal factors, including emotional energy, insecurity, and life outside work. Kahn's (1990) theory of engagement argues that three critical psychological conditions (psychological meaningfulness, safety, and availability) need to be met for an employee to be engaged in his or her work role. Motivational theories (e.g., McClelland, 1961) also claim that motivation is a function of a person and the environment. In empirical studies on work motivation, personal factors, such as types of individual traits (e.g., Furnham, Forde, & Ferrari, 1999) and personality (e.g., Joo & Lim, 2009), have proven to effectively predict work motivation (e.g., job satisfaction). Thus, as McClelland (1965, 1968) emphasized, individual characteristics should be considered in the process of motivation development, because variations in motives exist depending on one's experiences and cultural backgrounds. Kahn also suggested future research to investigate the interplay of the three psychological conditions in fostering engagement. Since the interaction could be "additive and compensatory" (p. 718) or would have "a specific hierarchy" (p. 718). Addressing the interplay between three psychological states will likely produce richer knowledge about how to promote engagement at work.

Second, a variety of potential antecedents need to be examined regarding to what extent they predict job engagement. There is still a lack of research on engagement (Eldor, 2016) despite the increase in engagement research published. Inconsistent results exist with respect to some antecedents of engagement. The antecedents that have been tested in previous research

need deeper exploration, especially to deal with the contradictory results of certain factors. Potential drivers that have not been tested yet need to be explored and tested based on a rigorous guiding framework.

Third, there is limited generalizability of these results when applying the study findings to practice. Because this study collected data through MTurk, a relatively new online survey website, there might be unique aspects in the data as described in Chapter 3. In addition, the sample of this study was drawn from the target population of this study—employees working in companies in the U.S. The results of this study, hence, can be generalized to this population through a logical inference instead of statistical inferences due to the convenience sampling method used. In order to generalize Kahn's (1990) theory of engagement, future researchers need a variety of samples from different sectors and/or other cultural contexts.

Fourth, more research needs to be conducted using qualitative research methods (Kim et al., 2013; Shuck, 2013). In the current literature on engagement, most of the evidence is provided through quantitative methods. It seems that Shuck, Rocco, and Albornoz's (2011) research on employees' experiences with engagement at work is almost the single qualitative study published, since Kahn's (1990) pioneering work, at this point. As Shuck (2013) indicated, engagement is a complex construct that requires in-depth investigation through qualitative as well as quantitative research. In addition, the following complexities need to be addressed in order to advance Kahn's theory: the interactions between three psychological states, between environmental factors and individual characteristics, and between job elements and work context. Quantitative research may not effectively address the complexity of engagement, so qualitative research would be useful.

Lastly, the present study is a cross-sectional study conducted at a specific point in time. One of the limitations in cross-sectional studies is that these kinds of studies address only one direction of the cause-effect relationships. However, in this case, the engagement level at time 1 can affect the engagement level at time 2 or an employee's effort to acquire more environmental factors at time 2. For this reason, engagement researchers particularly drawing from the job burnout literature (e.g., Biggs, Brough, & Barbour, 2014; Hakanen, Schaufeli, & Ahola, 2008; Schaufeli, Bakker, Van Rhenen, 2009), have begun to utilize longitudinal designs. A longitudinal design would be helpful for exploring Kahn's (1990) theory—the two or three directions between environmental/personal factors, psychological states, and job engagement—and providing in-depth knowledge about antecedents of engagement.

REFERENCES

Alderfer, C. P. (1972). *Human needs in Organizational Settings*. New York: Free Press of Glencoe.

Alfes, K., Truss, C., Soane, E., Rees, C., & Gatenby, M. (2013). The relationship between line manager behavior, perceived HRM practices, and individual performance: Examining the mediating role of engagement *Human Resource Management*, *52*(6), 839-859.

Andersson, L. M., & Pearson, C. M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of Management Review, 24*(3), 452-471.

Andrew, O. C., & Sofian, S. (2012). Individual factors and work outcomes of employee engagement. *Procedia—Social and Behavioral Sciences*, *40,* 498-508.

Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International Journal of Productivity and Performance Management*, *63*(3), 308-323. doi:10.1108/IJPPM-01-2013-0008

Aon Hewitt (2010). Trends in global employee engagement, *Consulting Talent & Organization*, Aon Hewitt.

Arnold, H. J.; & Feldman, D. C. (1982). A multivariate analysis of the determinants of job turnover. *Journal of Applied Psychology, 67*(3), 350-360.

Ashton, C., & Morton, L. (2005). Managing talent for competitive advantage. *Strategic HR Review, 4*(5), 28-31.

Bacal, R. (2014). Multiple Meanings for Employee Engagement A Serious Problem, *Success in Today's Workplace: Work911.com by Bacal & Associates*. Retrieved from http://work911.com/articles/engagejargon.htm

Bakker, A. B., & Demerouti, E. (2007). The job demands–resources model: State of the art. *Journal of Managerial Psychology*, *22*, 309 –328.

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work and Stress*, *22*, 187-200.

Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, *37*(1), 31-46.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.

Bartlett, C.A., & Ghoshal, S. (2002). Building competitive advantage through people, MIT Sloan Management Review, winter, 34-41.

Behrend, T. S., Sharek, D. J., Meade, A.W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavioral Research Methods*, *43*(3), 1-14. doi:10.3758/s13428-011-0081-0

Behson, S. J., Eddy, E. R., & Lorenzet, S. J. (2000). The importance of the critical psychological states in the job characteristics model: A meta-analytic and structural equations modeling examination. *Current Research in Social Psychology*, *5*(12), 170-189.

Benson, J., & Fleishman, J. A. (1994). The robustness of maximum likelihood and distribution-free estimators to non-normality in confirmatory factor analysis. *Quality and Quantity, 28*(2), 117-136.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238 –246.

Bentler, P. M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin*, *112*(3), 400-404.Bentler, P. M. (2001). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software.

Bentler, P. M. (1995). *EQS Structural equations program manual*. Encino, CA: Multivariate Software.

Bentler, P.M. (2001). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 588-600.

Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon. com's Mechanical Turk. *Political Analysis*, *20*(3), 351-368.

Biggs, A., Brough, P., & Barbour, J. P. (2014). Strategic alignment with organizational priorities and work engagement: A multi-wave analysis. *Journal of Organizational Behavior*, *35*(3), 301-317.

Bion, W. R. (1961). *Experiences in groups*. New York, NY: Basic Books.

Bradburn, N., Sudman, S., & Wansink, B. (2004). *Asking questions: The definitive guide to questionnaire design for market research, political polls, and social and health questionnaires*. San Francisco, CA: Jossey-Bass.

Brown, S. P. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin*, *120*, 235–255.

Brown, S. P., & Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of Applied Psychology, 81,* 358-368.

Bruk-Lee, V., Khoury, H., Nixon, A, Goh, A., Spector, P. (2009). Replicating and extending past personality/job Satisfaction meta-analyses. *Human Performance, 22*(2), 156-189.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6,* 3-5.

Byrne, B. M. (2012). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.

Carmeli, A. (2007). Social capital, psychological safety and learning behaviours from failure in organisations. *Long Range Planning, 40*(1), 30-44.

Carmeli, A., & Gittell, J. H. (2009). High-quality relationships, psychological safety, and learning from failures in work organizations. *Journal of Organizational Behavior, 6*. 709-729.

Carmeli, A., Reiter-Palmon, R., & Ziv, E. (2010). Inclusive leadership and employee involvement in creative tasks in the workplace: The mediating role of psychological safety. *Creativity Research Journal, 22*(3), 250-260.

Cerasoli, C., & Ford, M. (2014). Intrinsic motivation, performance, and the mediating role of mastery goal orientation: A test of self-determination theory. *Journal of Psychology, 148*(3), 267-286.

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin, 140*(4), 980-1008. doi:10.1037/a0035661

Chandler, J., Mueller, P., & Paolacci, G. (2013). Nonnaïveté among Amazon Mechanical Turk workers: Consequences and solutions for behavioral researchers. *Behavior Research Methods*, 1-19.

Chang, S., & Lee, M. (2007). A study on relationship among leadership, organizational culture, the operation of learning organization and employees' job satisfaction. *Learning Organization*, *14*(2), 155-185.

Chen, C., Liao, J., & Wen, P. (2014). Why does formal mentoring matter? The mediating role of psychological safety and the moderating role of power distance orientation in the Chinese context. *International Journal of Human Resource Management*, *25*(8), 1112-1130.

Chomeya, R. (2010). Quality of psychology test between Likert scale 5 and 6 points. *Journal of Social Sciences*, *6*(3), 399-403.

Christian, M., Garza, A., & Slaughter, J. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, *64* (1), 89-136.

Clifton, J. (2017, June 13). The World's Broken Workplace [Chairman's blog on the Gallup website]. Retrieved from http://www.gallup.com/opinion/chairman/212045/world-broken-workplace.aspx?g_source=BLOG_TCB&g_medium=topic&g_campaign=tiles

Cohen, A. (1991). Career stage as a moderator of the relationships between organizational commitment and its outcomes: A meta-analysis. *Journal of Occupational Psychology*, *64*, 253-268.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *86*, 278-321.

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*(3), 386-400.

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, *86*, 425-445.

Combs, J., Yongmei, L., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, *59*, 501-528.

Cook (2000). Charting futures for sociology: Structure and action. *Contemporary Sociology*, *29*, 685-692.

Corporate Leadership Council. (2004). *Driving performance and retention through employee engagement*. Washington, DC: Corporate Leadership Council.

Crawford, E. R., LePine, J. A., & Rich, B. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, *95*, 834-848. doi:10.1037/a0019364

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*, 874-900.

Dale Carnegie Training (2014). Engaged employees infographic. Retrieved from http://www.dalecarnegie.com/employee-engagement/engaged-employees-infographic/

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, 2, 292–307.

Deci, E. L. (1971). The effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105-115.

Deci, E. L. (1975). Intrinsic motivation. New York, NY: Plenum Publishing Company.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

Dirani, K. M. (2009). Measuring the learning organization culture, organizational commitment and job satisfaction in the Lebanese banking sector. *Human Resource Development International*, *12*(2), 189-208. http://dx.doi.org/10.1080/13678860902764118

Dunham, R. B. (1976). The measurement and dimensionality of job characteristics. *Journal of Applied Psychology, 61,* 404-409.

Dunham, R. B., Aldag, R. J., & Brief, A. P. (1977). Dimensionality of task design as measured by the job diagnostic survey. *Academy of Management Journal, 20*, 209-223.

Eby, L. T., Freeman, D. M., Rush, M. C., & Lance, C. E. (1999). Motivational bases of affective organizational commitment: A partial test of an integrative theoretical model. *Journal of Occupational and Organizational Psychology, 72*, 463-483.

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2). 350-383.

Edmondson, A. C. (2004). Psychological safety, trust, and learning in organizations: A group-level lens. In R. M. Kramer, & K. S. Cook (Eds.), *Trust and distrust in organizations: Dilemmas and approache*s (pp. 239-272). Series on Trust, vol. 7. New York, NY: Russell Sage Foundation.

Egan, T. M., Yang, B., & Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly, 15*, 279-301.

Eldor, L. (2016). Work engagement: Toward a general theoretical enriching model. *Human Resource Development Review*, *15*(3), 317-339.

Enders, C., & Bandalos, D. (2001). The Relative Performance of Full Information Maximum Likelihood Estimation for Missing Data in Structural Equation Models. *Structural Equation Modeling, 8*(3), 430–457.

Erickson, T. J. (2005). Testimony submitted before the U.S. Senate Committee on Health, Education, *Labor and Pensions, May 26*.

Fairlie, P. (2011). Meaningful work, employee engagement, and other key employee outcomes: Implications for human resource development. *Advances In Developing Human Resources*, *13*(4), 508-525. doi:10.1177/1523422311431679

Farr, J. L. (1976). Task characteristics, reward contingency, and intrinsic motivation. *Organizational Behavior & Human Performance*, *16*(2), 294-307. doi:10.1016/0030-5073(76)90018-0

Ferris, G. R., & Gilmore, D. C. (1984). The moderating role of work context in job design research: A test of competing models. *Academy of Management Journal*, *27*(4), 885-892. doi:10.2307/255886

Festinger, L. (1957). *A theory of cognitive dissonance*. San Francisco, CA: Stanford University Press.

Field, A. (2009). Discovering statistics using SPSS: Introducing Statistical Methods (3rd Ed.). Thousand Oaks, CA: Sage Publication Ltd.

Fouché, E., Rothmann, S., & van der Vyver, C. (2017). Antecedents and outcomes of meaningful work among school teachers, *South African Journal of Industrial Psychology*, *43*, 1-10. doi:10.4102/sajip.v43i0.1398

Folger, R., & Cropanzano, R. (1998). *Organizational justice and human resource management*. Beverly Hills, CA: Sage.

French, J. R. P. Jr, Rodgers, W., & Cobb, S. (1974). Adjustment as person-environment fit. In G. V. Coelho, D. A. Hamburg, J. E. Adams, *Coping and Adaptation (ed.)*, 316–333. New York: Basic Books.

French, J. R. P., Jr., & Kahn, R. L. (1962). A programmatic approach to studying the industrial environment and mental health. *Journal of Social Issues*, *18*(3), 1-47.

Freudenberger, H. J. (1975). The staff burnout syndrome in alternative institutions. *Psychotherapy Theory, Research, and Practice*, *12*(1), 72–83.

Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, *40*, 287-322.

Furnham, A., Forde, L., & Ferrari, K. (1999). Personality and work motivation. *Personality and individual differences*, *26*(6), 1035-1043.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation, *Journal of Organizational Behavior*, *26*, 331-362.

Gagné, M., Senecal, C., & Koestner, R. (1997). Proximal job characteristics, feelings of empowerment, and intrinsic motivation: A multidimensional model. *Journal of Applied Social Psychology*, *27*, 1222-1240.

Gagne´, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*, 331–362.

Galletta, M., & Portoghese, I. (2011). Intrinsic motivation, job autonomy and turnover intention in the Italian healthcare: The mediating role of affective commitment, *Journal of Management Research*, *3*(3), 1-19. doi:10.5296/jmr.v3i2.619

Gallup (2013). *State of the global workplace report: Employee engagement insights for business leaders worldwide*, Gallup Inc.

Garvin, D. A. (1993). Building a learning organization. *Harvard Business Review*, *71*(4), 78-91.

Goodman, J., Cryder, C., & Cheema, A. (2013). Data Collection in a flat world: The strengths and weaknesses of Mechanical Turk amples. Journal of Behavioral Decision Making, 26(3), 213-224.

Gorey, A. (2014). Why Most Employee Engagement Programs Fail, *Profiles International blog*.

Graber, S. (2015). The Two Sides of Employee Engagement. *Harvard Business Review Digital Articles*, December 4, 2015. Retrieved from https://hbr.org/2015/12/the-two-sides-of-employee-engagement

Granello, D. H., & Wheaton, J. E. (2004). Online Data Collection: Strategies for Research. *Journal of Counseling & Development*, *82*, 387-393.

Grapentine, T. (2000). Path analysis vs. structural equation modeling. *Marketing Research*, *12*(3), 12–20.

Grewal, R., Cote, J., & Baumgartner, H. (2004). Multicollinearity and Measurement Error in Structural Equation Models: Implications for Theory. *Marketing Science*, *23* (4), 519-529.

Griffin, M. A., Parker, S. K., & Neal, A. (2008). Is behavioral engagement a distinct and useful construct? *Industrial & Organizational Psychology*, *1*(1), 48-51. doi:10.1111/j.1754-9434.2007.00007.x

Grover, S. L., & Crooker, K. J. (1995). Who appreciate family-responsive human resources policies: The impact of family friendly policies on the organizational attachment of parents and non-parents. *Personnel Psychology*, *48*(2), 271-288.

Gu, Q., Wang, G. G., & Wang, L. (2013). Social capital and innovation in R&D teams: The mediating roles of psychological safety and learning from mistakes. *R&D Management*, *43*(2), 89-102.

Guzzo, R. A. (1979). Types of rewards, cognitions, and work motivation. *Academy of Management Review*, *4*(1). 75-86.

Hackman, J. R., & Oldham, G. R. (1974). The job diagnostic survey: An instrument for the diagnosis of jobs and the evaluation of job redesign projects (Report No. 4). New Haven, CT: Yale University, Department of Administration Science.

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, *60*(2), 159-170.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organization Behavior and Human Performance, 16*(2), 250-279.

Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.

Hair, J. F., Anderson, R. E., Tatham, R. L., & William, C. B. (1995). *Multivariate data analysis with readings.* New Jersy: Prentice Hall.

Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work and Stress*, *22*(3), 224-241.

Hallberg, U., & Schaufeli, W. B. (2006). "Same same" but different: Can work engagement be discriminated from job involvement and organizational commitment? *European Journal of Psychology, 11*, 119-127.

Hanusz, Z., & Tarasińska, J. (2012). New tests for multivariate normality based on Small's and Srivastava's graphical methods. *Journal of Statistical Computation and Simulation*, *82*(12), 1743-1752.

Harman, H. H. (1976). *Modern Factor Analysis* (3rd ed). Chicago, IL: University of Chicago Press.

Harrison, D., Newman, D., & Roth, P. (2006). How Important are Job Attitudes? Meta-analytic Comparisons of Integrative Behavioral Outcomes and Time Sequences. *Academy of Management Journal*, *49*, 305-325.

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, *87*, 268-279.

Harvey, R., Billings, R., & Nilan, K. (1985). Confirmatory factor analysis of the Job Diagnostic Survey: Good news and bad news. *Journal of Applied Psychology, 70,* 461-468.

Havighurst, R. J. (1954). Flexibility and the social roles of the retired. *American Journal of Sociology, 59*, 309-311. doi: 10.1086/221362

He, H., Zhu, W., & Zheng, X. (2014). Procedural justice and employee engagement: Roles of organizational identification and moral identity centrality. *Journal of Business Ethics*, *122*(4), 681-695.

Heger, B. K. (2007). Linking the employee value proposition to employee engagement and business outcomes: Preliminary findings for a linkage research pilot study. *Organizational Development Journal*, *25*, 121-133.

Heneman, H. G., & Schwab, D. P. (1985). Pay satisfaction: Its multidimensional nature and measurement. *International journal of Psychology*, *20*(2), 129-141.

Highhouse, S., & Zhang, D. (2015). The New Fruit Fly for Applied Psychological Research. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *8*(2), 179-183.

Holton, E. F., Bates, R. A. & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory, Human Resource Development Quarterly, 11(4), 333-360.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. Electronic Journal of Business Research Methods, 6(1), 53-60.

Hu, L.T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55.

Hu, L. T., Bentler, P. M., & Kano, Y. (1992). Can test statistics in covariance structure analysis be trusted?. *Psychological Bulletin*, *112*(2), 351-362.

Hulkko-Nyman, K., Sarti, D., Hakonen, A., & Sweins, C. (2012). Total rewards perceptions and work engagement in elder-care organizations. *International Studies of Management & Organization*, *42*(1), 24-49. http://dx.doi.org/10.2753/IMO0020-8825420102

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: a meta-analytic summary and theoretical extension of the work design literature. *The Journal of Applied Psychology*, *92*(5), 1332-1356.

Hunt, J. M. (1965). Intrinsic motivation and its role in psychological development. *Nebraska Symposium on Motivation*, *13*, 189–282.

Idaszak, J. R., & Drasgow, F. (1987). A revision of the Job Diagnostic Survey: Elimination of a measurement artifact. *Journal of Applied Psychology, 72* (1), 69-74.

Inoue, A., Kawakami, N., Ishizaki, M., Shimazu, A., Tsuchiya, M., Tabata, M., & Kuroda, M. (2010). Organizational justice, psychological distress, and work engagement in Japanese workers. *International Archives of Occupational and Environmental Health*, *83*(1), 29-38.

Ipeirotis, P. G. (2010). Demographics of Mechanical Turk, *Technical Report CeDER-10–01*. New York: New York University.

Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N: q hypothesis. *Structural Equation Modeling*, *10*(1), 128-141.

Jackson, D. L., Gillaspy, J. A. Jr., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods*, *14*, 6–23.

Jagpal, H. S. (1982). Multicollinearity in structural equation models with unobservable variables. *Journal of Marketing Research*, *19*(4), 431-439.

Jaimez, M. J., & Bretones, F. D. (2011). Towards a healthy organisation model: The relevance of empowerment. *Journal Of Industrial Relations & Human Resources*, *13*(3), 9-25.

Jamal, M. (1984). Job stress and job performance controversy: An empirical assessment. *Organizational Behavior and Human Performance, 33,* 1-21.

James, J. B., McKechnie, S., & Swanberg, J. (2011). Predicting employee engagement in an age-diverse retail workforce. *Journal of Organizational Behavior*, *32*(2), 173-196. doi:10.1002/job.681

Janik, M., & Rothmann, S. (2015). Meaningful work and secondary school teachers' intention to leave. *South African Journal of Education*, *35*(2), 1-13.

Jaramillo, F., Mulki, J. P., & Marshall, G. W. (2005). A meta-analysis of the relationship between organizational commitment and salesperson job performance: 25 years of research. *Journal of Business Research, 58*(6), 705–714.

Johns, G., Xie, J. L., & Fang, Y. (1992). Mediating and moderating effects in job design. *Journal of Management*, *18*, 657-676.

Jones, M. R. (1955). Nebraska symposium on motivation. Lincoln, NE: University of Nebraska Press.

Joo, B. (2010). Organizational commitment for knowledge workers: The roles of perceived organizational learning culture, leader–member exchange quality, and turnover intention. *Human Resource Development Quarterly*, *21*(1), 69-85.

Joo, B. K., Jeung, C. W., & Yoon, H. J. (2010). Investigating the influences of core self-evaluations, job autonomy, and intrinsic motivation on in-role job performance. *Human Resource Development Quarterly*, *21*(4), 353-371.

Joo, B. K., & Lim, T. (2009). The effects of organizational learning culture, perceived job complexity, and proactive personality on organizational commitment and intrinsic motivation, *Journal of Leadership and Organizational Studies*,*16*(1), 48-60.

Joo, B., & Shim, J. (2010). Psychological empowerment and organizational commitment: The moderating effect of organizational learning culture. *Human Resource Development International*, *13*(4), 425-441.

Jöreskog, K. G., & Sörbom, D. (1986). LISREL VI: Analysis of linear structural relationships by maximum likelihood and least squares methods. Mooresville, IN: Scientific Software.

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The core self-evaluations scale (CSES): Development of a measure. *Personnel Psychology*, *56*, 303-331.

Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C., & Rich, B. L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, *77*(2), 157-167. doi:10.1016/j.jvb.2010.04.002

Kagan, J. (1972). Motives and development. *Journal of Personality and Social Psychology*, *22*, 51–66.

Kahn, W. A. (1990). Psychological conditions of personal engagement at work. *Academy of Management Journal, 33*(4), 692-724.

Kahn, W. A. (1992). To be fully there: Psychological presence at work. *Human Relations, 45*(4), 321-349.

Kanungo, R. N. (1982). Measurement of job and work involvement. *Journal of Applied Psychology*, *67*, 341-349.

Karatepe, O. M. (2011). Procedural justice, work engagement, and job outcomes: Evidence from Nigeria. *Journal of Hospitality Marketing and Management, 20*(8), 855-878. doi:10.1080/19368623.2011.577688

Kennedy, P. (1992). *A guide to econometrics*. Cambridge, MA: MIT press.

Kiggundu, M. N. (1980). An empirical test of the theory of job design, using multiple job ratings. *Human Relations*, *33*(5), 339- 351

Kim, W., Kolb, J. A., & Kim, T. (2013). The relationship between work engagement and performance: A review of empirical literature and a proposed research agenda. *Human Resource Development Review*, *12*(3), 248-276.

Kline, R. B. (1998). *Principles and practice of Structural Equations Modeling*. New York: Guilford.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford Press.

Koyuncu, M., Burke, R. J., & Fiksenbaum, L. (2006). Work engagement among women managers and professionals in a Turkish bank: Potential antecedents and consequences. *Equal Opportunities International*, *25*, 299-310.

Landers, R. N., & Behrend, T. S. (2015). An inconvenient truth: Arbitrary distinctions between organizations, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *8*(2), 142-164.

Latham, G. P., & Ernst, C. T. (2006). Keys to motivating tomorrow's workforce. *Human Resource Management Review*, *16*(2), 181-198.

Lawler, E. E. Ill, & Hall, D. T. (1970). Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, *54*, 305-312.

Lawler, E. I. (1973). *Motivation in work organizations*. Boston, MA: Brooks/Cole.

Lee, C. H., & Bruvold, N. T. (2003). Creating value for employees: Investment in employee development. *International Journal of Human Resource Management*, *14*(6), 981-1000. doi:10.1080/0958519032000106173

Lee, J., & Ok, C. (2015). Drivers of work engagement: An examination of core self-evaluations and psychological climate among hotel employees. *International Journal of Hospitality Management*, *4484-4498*. doi:10.1016/j.ijhm.2014.10.008

Li, C. (2014). *The performance of MLR, USLMV, and WLSMV estimation in structural regression models with ordinal variables*. Unpublished doctoral dissertation. Michigan State University.

Lin, Y. (2012). *Intrinsic motivations of older adult learners in Taiwan*. Unpublished doctoral dissertation, University of Georgia.

Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance, 4*, 309-336.

Lockwood, N. R. (2007). Leveraging employee engagement for competitive advantage: HR's strategic role, *2007 SHRM Research Quarterly*, SHRM Research.

Lodahl, T. (1964). Patterns of job attitudes in two assembly technologies. *Administrative Science Quarterly, 8*(4), 482-519.

Macey, W. & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology, 1*, 3-30.

Macey, W.H., Schneider, B., Barbera, K., & Young, S.A. (2009). *Employee engagement: Tools for analysis, practice, and competitive advantage*. England: Blackwell.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*, 83–104.

Malhotra, N., Budhwar, P., & Prowse, P. (2007). Linking rewards to commitment: An empirical investigation of four UK call centres. *International Journal of Human Resource Management, 18*(12), 2095-2128.

Malhotra, N., Budhwar, P., & Prowse, P. (2007). Linking rewards to commitment: An empirical investigation of four UK call centres. *International Journal of Human Resource Management, 18*(12), 2095-2128.

Mardia, K. V. (1970). Measures of multivariate skewness and kurtosis with applications, *Biometrika, 57*, 519–530.

Markel, K. S., & Frone, M. R. (1998). Job characteristics, work–school conflict, and school outcomes among adolescents: Testing a structural model. *Journal of Applied Psychology, 83*(2), 277-287. doi:10.1037/0021-9010.83.2.277

Marquardt, D. W. (1970). Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation. *Technometrics 12*(3), 591–256.

Marsick, V. J., & Watkins, K. E. (2003). Demonstrating the values of an organization's learning culture: The dimensions of the learning organization questionnaire. *Advances in Developing Human Resources, 5*(2), 132-151.

Mauno, S., Kinnunen, U., & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: A longitudinal study, *Journal of Vocational Behavior, 70*(1), 149-171.

Maslach , C. (1976). Burned-out. *Human Behavior, 5,* 16–22.

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. San Francisco, CA: Jossey-Bass.

Maslach, C., Schaufelli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52,* 397-422.

Maslow, A. (1943). A theory of human motivation. *Psychological Review, 50,* 370-396.

Maslow, A. (1970). *Motivation and Personality* (2nd ed.). New York: Harper & Row.

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates and consequences of organizational commitment. *Psychological Bulletin, 108*: 171-194.

May, D. R. (2003). *Fostering the human spirit at work: Toward an understanding of the influences on employees' experienced meaningfulness at work*. Unpublished manuscript.

May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety, and availability and the engagement of the human spirit at work. *Journal of Occupational Psychology*, *77*, 11-37.

McClelland, D. C. (1961). *The achievement society*. Princenton, NJ: Von Nostrand.

McClelland, D. C. (1965). Toward a theory of motive acquisition. *American Psychologist*, *20*(5), 321-333.

McClelland, D. C. (1968). Money as a motivator: Some research insights. The McKinsey Quarterly, 57(2), 23-28.

Menguc, B., Auh, S., Fisher, M., & Haddad, A. (2013). To be engaged or not to be engaged: The antecedents and consequences of service employee engagement. *Journal of Business Research*, *66*, 2163-2170.

Merton, R. K. (1957). *Social theory and social structure*. New York, NY: Free Press of Glencoe.

Meyer, J. P., & Gagné, M. (2008). Employee engagement from a self-determination theory perspective, *Industrial and Organizational Psychology*, *1*, 60–62.

Meyer, J. P., & Gagné, M. (2008). Employee engagement from a self-determination theory perspective. *Industrial & Organizational Psychology*, *1*(1), 60-62. doi:10.1111/j.1754-9434.2007.00010.x

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, *61*(1), 20-52.

Meyer, J. P.; Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, *1*(61). doi:10.1016/1053-4822(91)90011-Z

Moliner, C., Martínez Tur, V., Peiró, J. M., Ramos, J., & Cropanzano, R. (2005). Relationships between organizational justice and burnout at the work-unit level. *International Journal of Stress Management*, *12*(2), 99-116.

Moliner, C., Martínez-Tur, V., Peiró, J. M., Ramos, J., & Cropanzano, R. (2008). Organizational justice and extra-role customer service: The mediating role of web-being at work. *European Journal of Work and Organizational Psychology*, *17*, 327-348.

Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The importance of job autonomy, cognitive ability, and job-related skill for predicting role breadth and job performance. *Journal of Applied Psychology*, *90*, 399-406.

Morse, N. C. (1953). *Satisfaction in the white-collar job*. Ann Arbor, MI: University of Michigan Survey Research Center.

Mottaz, C. J. (1985). The relative importance of intrinsic and extrinsic rewards as determinants of work satisfaction. *Sociological Quarterly*, *26*(3), 365-385.

Mottaz, C. J. (1988). Determinants of organizational commitment. *Human Relations*, *41*(6), 467-482. doi:10.1177/001872678804100604

Mowday, R. T. (1998). Reflections on the Study and Relevance of Organizational Commitment. *Human Resource Management Review*, *8*(4), 387-401.

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, *14*(2), 224-247. doi:10.1016/0001-8791(79)90072-1

Mueller, R. O., & Hancock, G. R. (2010). Structural equation modeling. In G. R. Hancock, & R. O. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (pp. 371-383). New York, NY: Routledge.

Murphy, E. (2014). Why Employee Engagement Programs Fail, *Strativity: Unlock Exceptional™*. Retrieved from http://strativity.com/why-employee-engagement-programs-fail/#

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A Meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*, 71-94.

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*(1), 71-94. doi:10.1037/a0021484

Nembhard, I. M., & Edmondson, A. C. (2006). Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *Journal of Organizational Behavior*, *27*(7), 941-966.

Newman, D. & Harrison, D. (2008). Been there, bottled that: Are state and behavioral work engagement new and useful construct wines? *Industrial and Organizational Psychology*, *1*, 31-36.

Newman, D. A., Joseph, D. L., Sparkman, T. E., & Carpenter, N. C. (2011). Invited reaction: The work cognition inventory: Initial evidence of construct validity. *Human Resource Development Quarterly*, *22*(1), 37-47. doi:10.1002/hrdq.20065

Newsom, J. (2017). Practical approaches to dealing with nonnormal and categorical variables [PDF]. Retrieved from http://web.pdx.edu/~newsomj/semclass/ho_estimate2.pdf

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity*, *41*(5), 673-690.

Olivier, A. L., & Rothmann, S. (2007). Antecedents of work engagement in a multinational oil company. *South African Journal of Industrial Psychology*, *33*(3), 49-56.

O'Reilly, C. A., & Caldwell, D. F. (1981) The commitment and job tenure of new employees: Some evidence of postdecisional justification. *Administrative Science Quarterly*, *26*, 597-616.

Othman, N., & Nasurdin, A. (2013). Social support and work engagement: A study of Malaysian nurses. *Journal of Nursing Management, 21*(8), 1083-1090.

Paolacci, G., & Chandler, J. (2014). Inside the Turk: Understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science*, *23*(3), 184-188.

Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgement and Decision Making*, *5*(4), 411-419.

Park, Y. K., Song, J. H., Yoon, S. W., & Kim, J. (2014). Learning organization and innovative behavior: The mediating effect of work engagement. *European Journal of Training and Development*, *38*(1/2), 75-94.

Pearson, C., Andersson, L., & Porath, C. (2000). Assessing and Attacking Workplace Incivility. Organizational Dynamics, 29(2), 123-137.

Pfeffer, J. (1994). *Competitive advantage through people: Unleashing the power of the work force*. Boston, MA: Harvard Business School Press.

Piccolo, R. F., & Colquitt, J. A. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal*, *49*(2), 327.

Pinder, C. (2007). Need theories of work motivation. In S. Rogelberg (Ed.), *Encyclopedia of Industrial and Organizational Psychology*. (pp. 509-512). Thousand Oaks, CA: SAGE Publications, Inc. doi: http://dx.doi.org/10.4135/9781412952651.n195

Pinder, C. C. (2008). Work motivation in organizational behavior (2nd ed.) New York, NY: Psychology Press.

Pinder, W. C. C. (2011). *Work motivation in organizational behavior* (2nd ed.). New York, NY: Psychology Press.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common methods biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.

Porter, L. W. (1962). Job attitudes in management: Perceived deficiencies in need fulfillment as a function of job level. *Journal of Applied Psychology*, *46*(6), 375-384.

Porter, L. W., & Lawler, E. E. (1968). *Managerial attitudes and performance*. Homewood, IL: Dorsey Press.

Porter, L., Steers, R., Mowday, R., & Boulian, P. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology*, *59*, 603-609.

Preacher, K. J., & Hayes, A. F. (2004) SPSS and SAS procedures for estimating indirect effects in simple mediation models Behavior Research Methods. *Instruments, & Computers*, *36* (4), 717-731.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879-891.

Reif, W. E. (1975). Intrinsic versus extrinsic rewards: Resolving the controversy. *Human Resource Management*, *14*(2), 1-10.

Reio Jr, T. G., & Sanders-Reio, J. (2011). Thinking about workplace engagement: Does supervisor and coworker incivility really matter? *Advances in Developing Human Resources*, *13*(4), 462- 478.

Rhodes, S. R., & Steers, R. M. (1981). Conventional vs. worker-owned organizations. *Human Relations*, *12*, 1013-1035.

Rich, B., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. Academy of Management Journal, 53(3), 617-635.

Robinson, D., Perryman, S., & Hayday, S. (2004). The Drivers of Employee Engagement. *Report 408*, Institute for Employment Studies.

Rogerson, P. (2001). *Statistical methods for geography*. Thousand Oaks, CA: Sage.

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior, 30*, 91-127.

Rothbard, N.P. (2001), Enriching or depleting? The dynamics of engagement in work and family roles, *Administrative Science Quarterly*, *46*, 655-684.

Rothmann, S., & Hamukang'andu, L. (2013). Callings, work role fit, psychological meaningfulness and work engagement among teachers in Zambia. *South African Journal of Education, 33*(2), 1-16

Rousseau, D. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements*. Thousand Oaks, CA: Sage

Rousseau, D. M., & Greller, M., M. (1994). Human resource practices: Administrative contract makers. *Human Resource Management, 33*, 385–401.

Rummler, G. A., & Brache, A. P. (1995). *Improving performance: How to manage the white space on the organization chart* (2nd Ed.). San Francisco, CA: Jossey-Bass Inc.

Ruona, W. E. (2014). Talent management as a strategically aligned practice. In N. Chalofsky, T. Rocco & M. M. Morris (Eds.), *The Handbook of Human Resource Development: Theory and application*, Hoboken, NJ: John Wiley & Sons, Inc.

Ruona, W. E., & Gibson, S. K. (2004). The making of twenty-first-century HR: An analysis of the convergence of HRM, HRD, and OD. *Human Resource Management, 43*(1), 49-66.

Rurkkuhm, S. (2010). *The relationship between employee engagement and organizational citizenship behavior in Thai organizations*. Unpublished doctoral dissertation. University of Minnesota.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67.

Saber, D. A. (2014). Frontline registered nurse job satisfaction and predictors over three decades: A meta-analysis from 1980 to 2009. *Nursing Outlook, 62*(6), 402-414. doi:10.1016/j.outlook.2014.05.004

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600-619.

Saks, A., & Gruman, J. (2014). What Do We Really Know About Employee Engagement? *Human Resource Development Quarterly*, *25*(2), 155-182.

Salanova, M., Agut, S., & Peiro, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediating role of service climate. *Journal of Applied Psychology*, *90*, 1217-1227.

Sarti, D. (2014). Job resources as antecedents of engagement at work: Evidence from a long-term care setting. *Human Resource Development Quarterly*, *25*(2), 213-237. doi:10.1002/hrdq.21189

Satorra, A., & Bentler, P. M. (1988). Scaling corrections for chi-square statistics in covariance structure analysis. *Proceedings of the Business and Economics Sections* (pp. 308-313), American Statistical Association 1988.

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye and C.C. Clogg (Eds.), Latent Variable Analysis: Applications to Developmental Research (pp. 399-419). Newbury Park: Sage.

Schaufeli, W. B., & Bakker, A. B. (2003). *UWES (Utrecht Work Engagement Scale): Test manual*. Department of Psychology, Utrecht University. Retrieved from http://www.wilmarschaufeli.nl/downloads/test-manuals-2/

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*(3), 293-315.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66* (4), 701–716.

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, *30*(7), 893-917.

Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds), Research in social issues in management, (pp. 135-177). Greenwich, CT: Information Age Publishers.

Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. Journal of Happiness Studies, 3, 71–92.

Schulte, M., Cohen, N. A., & Klein, K. J. (2012). The coevolution of network ties and perceptions of team psychological safety. *Organization Science*, *23*(2), 564-581.

Schwartz, J., Bersin, J, & Pelster, B. (2014). Global human capital trends 2014 survey: Top 10 findings. In J. Schwartz, J. Bersin, & B., Pelster, *Global Human Capital Trends 2014: Engaging the 21st-century Workforce* (pp. 7-22), Westlake, TX: Deloitte University Press.

Shalley, C. E., Gilson, L. L., & Blum, T. C. (2009). Interactive effects of growth need strength, work context, and job complexity on self-reported creative performance. *Academy of Management Journal*, *52*(3). 489-505.

Shalley, C., Gilson, L., & Blum, T. (2009). Interactive effects of growth need strength, work context, and job complexity on self-reported creative performance. *Academy of Management Journal*, *52*(3), 489-505.

Shamir, B. (1991). Meaning, self and motivation in organizations. *Organization Studies*, *12*(3), 405-424.

Shapiro, D. N., Chandler, J., & Mueller, P. A. (2013). Using Mechanical Turk to study clinical populations. *Clinical Psychological Science*, *1*, 213-220.

Sheehan, K., & Pittman, M. (2016). *Amazon's mechanical turk for academics: the HIT handbook for social science research*. Melvin & Leigh, Publishers.

Shirar, J. (2014, Jan 16). 10 Reasons Your Employee Engagement Program Will Fail, *Officevibe Blog*.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, *7*(4), 422-445.

SHRM Foundation (2012). Employee engagement: Your competitive advantage, *SHRM Foundation Executive Briefing*. Alexandria, VA: SHRM Foundation.

Shuck, B. (2011). Four emerging perspectives of employee engagement: An integrative literature review. *Human Resource Development Review*, *10*(3), 304-328.

Shuck, B. (2013). Invited Reaction: Further Observations on the Relationship Between Work Engagement and Performance: A Review of Empirical Literature and a Proposed Research Agenda. *Human Resource Development Review*, *12*(3), 277-283.

Shuck, B., & Wollard, K. (2010). Employee engagement and HRD: A seminal review of the foundations. *Human Resource Development Review*, *9*(1), 89-110.

Shuck, B., Ghosh, R., Zigarmi, D., & Nimon, K. (2013). The jingle jangle of employee engagement: Further exploration of the emerging construct and implications for workplace learning and performance. *Human Resource Development Review*, *12*(1), 11-35.

Shuck, B., Nimon, K., & Zigarmi, D. (2017). Untangling the predictive nomological validity of employee engagement. *Group & Organization Management*, *42*(1), 79-112.

Shuck, B., Reio, T. G., & Rocco, T. S. (2011). Employee engagement: An examination of antecedent and outcome variables. *Human Resource Development International*, *14*(4), 427-445. doi:10.1080/13678868.2011.601587

Shuck, B., Rocco, T., & Albornoz, C. (2011). Exploring employee engagement from the employee perspective: Implications for HRD. *Journal of European Industrial Training*, *35*(4), 300-325.

Shuck, B., Twyford, D., Reio, T., & Shuck, A. (2014). Human resource development practices and employee engagement: Examining the connection with employee turnover intentions. *Human Resource Development Quarterly*, *25*(2), 239-270.

Shuck, M. B., Rocco, T. S., & Albornoz, C. A. (2011). Exploring Employee Engagement from the Employee Perspective: Implications for HRD. *Journal of European Industrial Training*, *35*(4), 300-325.

Slater, P. E. (1966). *Microcosms*. New York, NY: Wiley.

Small, N. J. H. (1978). Plotting squared radii. *Biometrika*, *65*(3), 657-658.

Smith, K. K., & Berg, D. N. (1987). *Paradoxes of group life*. San Francisco, CA: Jossey-Bass.

Smith, N., Sabat, I., Martinez, L., Weaver, K., & Xu, S. (2015). A convenient solution: Using MTurk to sample from hard-to-reach populations. *Industrial and Organizational Psychology-Perspectives on Science and Practice*, *8*(2), 220-228.

Soane, E., Shantz, A., Alfes, K., Truss, C., Rees, C., & Gatenby, M. (2013). The association of meaningfulness, well-being, and engagement with absenteeism: A moderated mediation model. *Human Resource Management*, *52*(3), 441-456. doi:10.1002/hrm.21534

Song, J., Joo, B., & Chermack, T. J. (2009). The dimensions of learning organization questionnaire (DLOQ): A validation study in a Korean context. *Human Resource Development Quarterly*, *20*(1), 43-64.

Spector, P. E. (1986). Perceived control by employees: A meta-analysis of studies concerning autonomy and participation at work, *Human Relations*, *39*(11), 1005-1016.

Spector, P. E. (1997). *Job Satisfaction: Application, assessment, causes and consequences*. Thousand Oaks, CA: Sage.

Spreitzer, G. (1995). Psychological empowerment in the work place: Dimensions, measurement, and validation. *Academy of Management Journal, 38,* 1442–1465.

Srivastava, M. S. (1984). A measure of skewness and kurtosis and a graphical method for assessing multivariate normality. *Statistics & Probability Letters*, *2*(5), 263-267.

Steers, R. M. Antecedents and outcomes of organizational commitment. *Administrative Science Quarterly, 22,* 46-56.

Steers, R. M., & Porter L. W. (1975). *Motivation and Work Behavior*. New York: McGraw-Hill.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory (WAMI*). Journal of Career Assessment*, *20*(3), 322-337.

Steger, M. F., Littman-Ovadia, H., Miller, M., Menger, L., & Rothmann, S. (2013). Engaging in work even when it is meaningless: Positive affective disposition and meaningful work interact in relation to work engagement. *Journal of Career Assessment*, *21* (2), 348-361.

Steiger, J. H., & Lind, J. M. (1980). Statistically based tests for the number of common factors. *Paper presented at the annual meeting of the Psychometric Society*, Iowa City: IA.

Stolte, J. F., Fine, G. A., & Cook, K. S. (2001). Sociological miniaturism: Seeing the big through the small in social psychology. *Annual Review Of Sociology*, *27*, 387-413.

Stringer, C., & Boverie, B. (2007). The role of meaning in work: A study of the transformational power of meaningful work. *Proceedings from The Seventh International Transformative Learning Conference*: Albuquerque, New Mexico.

Tabachnick, B. G., & Fidell, L. S. (1996). Using Multivariate Statistics (3rd ed.). New York, NY: Harper Collins.

Taylor, F. W. (1911). *Principles of scientific management*. New York, NY: Harper.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications.* Washington, DC: American Psychological Association.

Towers Perrin. (2003). *Working today: Understanding what drives employee engagement*. Retrieved from http://www.keepem.com/doc_files/Towers_Perrin_Talent_2003%28TheFinal%29.pdf

Towers Perrin. (2007). *Closing the engagement gap: A road map for driving superior business performance*. Retrieved from https://c.ymcdn.com/sites/simnet.site-ym.com/resource/group/066D79D1-E2A8-4AB5-B621-60E58640FF7B/leadership_workshop_2010/towers_perrin_global_workfor.pdf

Tsai, P. C., Wu, S., Yvonne Yen, Y., Ho, C., & Huang, I. (2005). Study of remaining employees' continuance commitment after downsizing from the perspective of job satisfaction. *International Journal of Human Resources Development and Management*, *5*(1), 99-123.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, *38*(1), 1-10.

Ullman, J. B. (2006). Structural equation modeling. In B. G. Tabachnick & L. S. Fidell (Eds.), Using multivariate statistics, (5th Ed.; pp. 653–771). Boston: Allyn & Bacon.

Van De Voorde, K., Veld, M., & Van Veldhoven, M. (2016). Connecting empowerment-focused HRM and labor productivity to work engagement: The mediating role of job demands and resources. *Human Resource Management Journal*, *26*(2), 192-210.

Van Zyl L. E, Deacon, E., & Rothmann, S. (2010). Towards happiness: Experiences of work-role fit, meaningfulness, and work engagement of industrial/organizational psychologists in South Africa. *South African Journal of Industrial Psychology*, *36*(1), 1-10. doi: 10.4102/sajip.v36i1.890

Walumbwa, F. O., & Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: Mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology*, *94* (5), 1275–1286.

Wang, X. (2007). Learning, job satisfaction and commitment: An empirical study of organizations in China. *Chinese Management Studies*, *1*(3), 167-179. http://dx.doi.org/10.1108/17506140710779285

Watkins, K. E., & Marsick, V. J. (1993). *Sculpting the learning organization: Lessons in the art and science of systemic change*. San Francisco, CA: Jossey-Bass.

Watkins, K. E., & Marsick, V. J. (1996). *Inaction: Creating the learning organization*. Alexandria, VA: American Society for Training and Development.

Watkins, K. E., & Marsick, V. J. (1997). *Dimensions of the learning organization*. Warwick, RI: Partners for the Learning Organization.

Weick, K. E. (1969). *The social psychology of organizing*. New York, NY: McGraw-Hill.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw, L. L. Cummings, B. M. Staw, L. L. Cummings (Eds.) , *Research in organizational behavior: An annual series of analytical essays and critical reviews*, *18* (pp. 1-74). US: Elsevier Science/JAI Press.

Wilson, M. G., Dejoy, D. M., Vandenberg, R. J., Richardson, H. A., & McGrath, A. L. (2004). Work characteristics and employee health and well-being: Test of a model of healthy work organization. *Journal of Occupational and Organizational Psychology*, *77*, 565-588.

Woo, S. E., Keith, M., & Thornton, M. A. (2015). Amazon Mechanical Turk for Industrial and Organizational Psychology: Advantages, Challenges, and Practical Recommendations. *Industrial & Organizational Psychology, 8*(2), 171-179. doi:10.1017/iop.2015.21

Wright, T. A. (2006) The emergence of job satisfaction in organizational behavior: A historical overview of the dawn of job attitude research, *Journal of Management History, 12*(3), 262-277.

Yang, B. (2003). Identifying valid and reliable measures for dimensions of a learning culture. *Advances in Developing Human Resources*, *5*(2), 152-162.

Yang, B., Watkins, K., & Marsick, V. J. (1998). Examining construct validity of the Dimensions of the Learning Organization Questionnaire. In R. Torraco (Ed.), *Proceedings of the 1998 Annual Academy of Human Resource Development Conferenc*e (pp. 83-90). Chicago: Academy of Human Resource Development.

Yang, B., Watkins, K. E., & Marsick, V. J. (2004). The construct of the learning organization: Dimensions, measurement, and validation, *Human Resource Development Quarterly, 15*(1), 31-55.

Zigarmi, D., Roberts, T. P., & Alan Randolph, W. (2015). Employees' perceived use of leader power and implications for affect and work intentions. *Human Resource Development Quarterly, 26*(4), 359-384.

APPENDIX A

THE INSTRUMENT USED IN THIS STUDY

A. Survey Items Measuring a Dependent Variable

Construct	Item Language
Job engagement	I exert my full effort towards my job.
	I try my hardest to perform well on my job.
	I strive as hard as I can to complete my job.
	I am enthusiastic about my job.
	I feel energetic at my job.
	I am excited about my job.
	At work, my mind is focused on my job.
	At work, I pay a lot of attention to my job.
	At work, I am absorbed by my job.

B. Survey Items Measuring Independent Variables

Construct	Item Language
Job autonomy	My job gives me the opportunity to use my personal judgment in carrying out the work.
	My job gives me the opportunity for independence and freedom in how I do the work.
	My job gives me the opportunity to decide on my own how to go about doing the work.
Financial rewards	I am satisfied with my current salary.
	I am satisfied with my overall level of pay.
	I am satisfied with my benefits package.
	I am satisfied with the value of my benefits.
	I am satisfied with my most recent pay increase.
	I am satisfied with the raises I have typically received in the past.
Learning culture	In my organization, people are rewarded for learning.
	In my organization, people spend time building trust with each other.
	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.
	My organization makes its lessons learned available to all employees.
	My organization recognizes people for taking initiative.
	My organization works together with the outside community to meet mutual needs.
	In my organization, leaders continually look for opportunities to learn.
Procedural justice	In my organization, I can express my views and feelings during the procedures to evaluate my performance.
	In my organization, I have influence over the decisions made as a result of the performance evaluation.
	In my organization, the procedures used to evaluate my performance are applied consistently.
	In my organization, the procedures used to evaluate my performance are free of bias.
	In my organization, the procedures used to evaluate my performance utilize accurate information.
	In my organization, I can appeal the decisions made as a result of my performance review.
	In my organization, the procedures used to evaluate my performance uphold ethical and moral standards.

C. Survey Items Measuring Mediating Variables

Construct	Item Language
Psychological meaningfulness	The work I do on this job is very important to me.
	My job activities are personally meaningful to me.
	The work I do on this job is worthwhile.
	My job activities are significant to me.
	The work I do on this job is meaningful to me.
	I feel that the work I do on my job is valuable.
Psychological safety	Even if I make a mistake in this organization, it is not often held against me.
	Employees in this organization are able to bring up problems and tough issues.
	Employees in this organization do not reject others for being different.
	It is safe to take a risk in this organization.
	No one in this organization would deliberately act in a way that undermines my efforts.

APPENDIX B

TALLY CHARTS: RESULTS OF THE SORT ACTIVITY

A. Items Representing Job Engagement

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
JE03	24	I devote a lot of energy to my job.	9						
JE04	31	I try my hardest to perform well on my job.	8		1				
JE05	30	I strive as hard as I can to complete my job.	9						
JE07	37	I am enthusiastic in my job.	8					1	
JE08	32	I feel energetic at my job.	9						
JE09	6	I am interested in my job.	7					2	
JE13	40	At work, my mind is focused on my job.	9						
JE14	16	At work, I pay a lot of attention to my job.	9						
JE16	26	At work, I am absorbed by my job.	8					1	

B. Items Representing Job Autonomy

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
JA01	41	The job gives me a chance to use my personal initiative and judgment in carrying out the work.		9					
JA02	36	The job gives me considerable opportunity for independence in how I do the work.		9					
JA11	12	The job permits me to decide on my own how to go about doing the work.		9					

C. Items Representing Financial Rewards

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
FR01	39	I am satisfied with my current salary.			9				
FR02	10	I am satisfied with my overall level of pay.			8		1		
FR03	27	I am satisfied with my benefit package.			9				
FR04	35	I am satisfied with the value of my benefits.			9				
FR05	5	I am satisfied with my most recent increase.	1		8				
FR06	7	I am satisfied with the raises I have typically received in the past.			9				

D. Items Representing Learning Culture

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
LC01	25	In my organization, people are rewarded for learning.				9			
LC02	17	In my organization, people spend time building trust with each other.				2			7
LC03	18	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.				8	1		
LC04	20	My organization makes its lessons learned available to all employees.				9			
LC05	23	My organization recognizes people for taking initiative for change.		1	1	7			
LC06	14	My organization works together with the outside community to meet mutual needs.	1		1	7			
LC07	33	In my organization, leaders continually look for opportunities to learn.				9			

E. Items Representing Procedural Justice

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
PJ01	34	In my organization, I can express my views and feelings during rewards procedures.					7		2
PJ02	19	In my organization, I can influence over the rewards outcome arrived at by those procedures.		1	1		7		
PJ03	42	In my organization, rewards procedures have been applied consistently.					9		
PJ04	3	In my organization, rewards procedures have been free of bias.					9		
PJ05	45	In my organization, rewards procedures have been based on accurate information.					9		
PJ06	4	In my organization, I can appeal the rewards outcomes arrived at by rewards procedures.					9		
PJ07	15	In my organization, rewards procedures have upheld ethical and moral standards.					9		

F. Items Representing Psychological Meaningfulness

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
PM01	1	The work I do on this job is very important to me.						9	
PM02	44	My job activities are personally meaningful to me.	2					7	
PM03	22	The work I do on this job is worthwhile.						9	
PM04	29	My job activities are significant to me.	1					8	
PM05	43	The work I do on this job is meaningful to me.						9	
PM06	38	I feel that the work I do on my job is valuable.						9	

G. Items Representing Psychological Safety

True #	Random #	Items	Tally						
			JE	JA	FR	LC	PJ	PM	PS
PS01	11	Even if you make a mistake in this organization, it is not often held against you.							9
PS02	9	Employees in this organization are able to bring up problems and tough issues.							9
PS03	2	Employees in this organization do not reject others for being different.							9
PS04	13	It is safe to take a risk in this organization.							9
PS05	21	It is not difficult to ask others in this organization for help.				3			6
PS06	8	No one in this organization would deliberately act in a way that undermines my efforts.					1		8
PS07	28	Working with others in this organization, my unique skills and talents are valued and utilized.	1			3		4	1

APPENDIX C

SURVEY CRITIQUE SHEET

Survey Critique for Moonju's Dissertation

Dear Colleagues,

First of all, thank you for your participation in this survey critique. As dissertation research, I am studying what factors predict job engagement. I am currently in the final stage of my instrument development, and I am hoping to get some critiques of the instrument before I finalize it.

When I actually administer the questionnaire, it will be on Qualtrics. If you want to see how it feels and looks online, here is the link: https://ugeorgia.qualtrics.com/SE/?SID=SV_9N4wJD9BU9BUspn .

The principal task I am asking you to do is to critique my questionnaire. I have reproduced all the questions into this word document and made room for your comments. Also, because English is not my first language, please feel free to critique my wording and anything about the questionnaire.

Your feedback will be very welcomed and appreciated to improve the survey. If you have any questions, please contact Moonju Sung (mjsung@uga.edu).

Thank you so much for your time and effort.

Sincerely,

Moonju

[Page 1 on Qualtrics]

A Study on Organizational Support and Employees' Willingness to do Their Jobs

The purpose of this university-based survey is to explore employees' perceptions of organizational support for their jobs and their willingness to invest their energies in their jobs. This survey has 50 items, which were drawn from scholarly research. It will take about 15 minutes to complete the survey.

This survey consists of three sections: The first section asks about how much support you are receiving from your organization for your job. In the second section, you will be asked about how much energy you are willing to invest in your job. In the last section, you will be asked to provide general demographic information (age, gender, etc.)

Please read each statement of the following sections carefully and give your honest opinions. There are no right or wrong answers for these questions, and your answer will be used only for research purposes.

[Critique Question 1]
Do you think that this is a good introductory section? How can I improve it?

[Page 2 on Qualtrics]

Section I. Organizational Support

This section asks about the extent to which your organization is supportive of you to do your job. Please rate how much you agree or disagree with the following statements.

To what extent do you agree with each statement?

[Critique Question 2]

Do you think that the instruction of this section is clear enough? How can I improve it?

[Page 2 on Qualtrics]

[Critique Question 3]

The questions in my survey are designed to be completed by employees in business organizations. The survey items were drawn from a variety of different existing instruments. However, in some cases, I would have to alter the questions. All items use a standard Likert scale of strongly disagree to strongly agree. Could you please read each of the questions and either say "okay" or "suggest changes to clarify that?" As I said earlier, please remember that English is not my first language, so any help with standard English communication would be greatly appreciated.

Items on Qualtrics	Comment
1. In my organization, people are rewarded for learning.	
2. In my organization, people spend time building trust with each other.	
3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	
4. My organization makes its lessons learned available to all employees.	
5. My organization recognizes people for taking initiative.	
6. My organization works together with the outside community to meet mutual needs.	
7. In my organization, leaders continually look for opportunities to learn.	
8. In my organization, I can express my views and feelings during a performance review process resulting in rewards.	

Items on Qualtrics	Comment
9. In my organization, I have influence over the outcome arrived at by a performance review process resulting in rewards.	
10. In my organization, a performance review process resulting in rewards has been applied consistently.	
11. In my organization, a performance review process resulting in rewards has been free of bias.	
12. In my organization, a performance review process resulting in rewards has been based on accurate information.	
13. In my organization, I can appeal the rewards arrived at by a performance review process resulting in rewards.	
14. In my organization, a performance review process resulting in rewards has upheld ethical and moral standards.	
15. My job gives me a chance to use my personal judgment in carrying out the work.	
16. My job gives me considerable opportunity for independence and freedom in how I do the work.	
17. My job permits me to decide on my own how to go about doing the work.	
18. I am satisfied with my current salary.	
19. I am satisfied with my overall level of pay.	
20. I am satisfied with my benefits package.	
21. I am satisfied with the value of my benefits.	

Items on Qualtrics	Comment
22. I am satisfied with my most recent pay increase.	
23. I am satisfied with the raises I have typically received in the past.	
24. In my organization, leaders do not continually look for opportunities to learn.	

[Page 3 on Qualtrics]

Section II. Your Willingness to do Your Job

This section asks about the extent to which you are willing to invest your energies in your job. Although it is believed that putting a lot of effort into a job is wonderful, people, in reality, have different levels of energy that they want to invest in their jobs depending on situations.

Below is a list of statements describing your willingness to invest your energy in your job. Please answer honestly about to what extent each statement is true for you. This survey maintains the confidentiality of individual responses, so your response will be strictly protected.

To what extent do you agree with each statement?

[Critique Question 4]
Do you think that the instruction of this section is clear enough? How can I improve it?

[Page 3 on Qualtrics]

[Critique Question 5]

Could you please read each of the questions and either say “okay” or “suggest changes to clarify that?” Also, any help with standard English communication would be greatly appreciated.

Items on Qualtrics	Comment
25. The work I do on this job is very important to me.	
26. My job activities are personally meaningful to me.	
27. The work I do on this job is worthwhile.	
28. My job activities are significant to me.	
29. The work I do on this job is meaningful to me.	
30. I feel that the work I do on my job is valuable.	
31. Even if you make a mistake in this organization, it is not often held against you.	
32. Employees in this organization are able to bring up problems and tough issues.	
33. Employees in this organization do not reject others for being different.	
34. It is safe to take a risk in this organization.	

Items on Qualtrics	Comment
35. No one in this organization would deliberately act in a way that undermines my efforts.	
36. I exert my full effort towards my job.	
37. I try my hardest to perform well on my job.	
38. I strive as hard as I can to complete my job.	
39. I am enthusiastic about my job.	
40. I feel energetic at my job.	
41. I am excited about my job.	
42. At work, my mind is focused on my job.	
43. At work, I pay a lot of attention to my job.	
44. At work, I am absorbed by my job.	
45. It is not safe to take a risk in this organization.	

[Page 4 on Qualtrics]

Section III. Demographic Information

Please answer the following questions in ways that best describe you.

[Critique Question 6]

Do you think that the instruction of this section is clear enough? If not, please describe how I can improve it.

[Critique Question 7]

Please read each of the questions and either say “okay” or “suggest changes to clarify that.”

Items on Qualtrics	Comments
46. What is your gender? (M / F)	
47.What year were you born? ( )	
48. What is the highest educational degree you earned? (1) High school diploma (2) Bachelor’s degree (3) Master’s degree (4) Doctorate (5) Other	

Items on Qualtrics	Comments
49. What is your primary responsibility? (1) Research and development (2) Engineering in manufacturing facilities (3) Marketing/Sales (4) Finances/Accounting (5) Human resources (6) Operations/Production (7) Administration/Administrative assistance (8) Other	
50. What is your role? (1) Non-management [Hourly Employee] (2) Non-management Technical/Professional (3) Entry-level Management (4) Middle management (Team management) (5) Senior management (Executives)	

This is the end of the survey critique. Thank you so much for your feedback!

APPENDIX D

THE INSTRUMENT USED IN THE PILOT STUDY

A Study on Organizational Support and
Employees' Willingness to do Their Jobs

The purpose of this university-based survey is to explore employees' perceptions of organizational support for their jobs and their willingness to invest their energies in their jobs. This survey has 51 items, which were drawn from scholarly research. It will take about 15 minutes to complete the survey.

This survey consists of three sections:

- The first section asks about how much support you are receiving from your organization for your job.
- In the second section, you will be asked about how much energy you are willing to invest in your job.
- In the last section, you will be asked to provide general demographic information (age, gender, etc.)

Please read each statement of the following sections carefully and give your honest opinions. There are no right or wrong answers for these questions, and your answer will be used only for research purposes.

Section I. Organizational Support

This section asks about the extent to which your organization is supportive of you to do your job. Please rate how much you agree or disagree with the following statements.

To what extent do you agree with each statement?

To what extent do you agree with each statement?	Strongly Disagree ⟷ Strongly Agree					
1. In my organization, people are rewarded for learning.	1	2	3	4	5	6
2. In my organization, people spend time building trust with each other.	1	2	3	4	5	6
3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	1	2	3	4	5	6
4. My organization makes its lessons learned available to all employees.	1	2	3	4	5	6
5. My organization recognizes people for taking initiative.	1	2	3	4	5	6
6. My organization works together with the outside community to meet mutual needs.	1	2	3	4	5	6
7. In my organization, leaders continually look for opportunities to learn.	1	2	3	4	5	6
8. In my organization, I can express my views and feelings during the procedures to evaluate my performance.	1	2	3	4	5	6
9. In my organization, I have influence over the decisions made as a result of the performance evaluation.	1	2	3	4	5	6
10. In my organization, the procedures used to evaluate my performance are applied consistently.	1	2	3	4	5	6
11. In my organization, the procedures used to evaluate my performance are free of bias.	1	2	3	4	5	6

To what extent do you agree with each statement?	Strongly Disagree ⟷ Strongly Agree					
12. In my organization, the procedures used to evaluate my performance utilize accurate information.	1	2	3	4	5	6
13. In my organization, I can appeal the decisions made as a result of my performance review.	1	2	3	4	5	6
14. In my organization, the procedures used to evaluate my performance uphold ethical and moral standards.	1	2	3	4	5	6
15. My job gives me a chance to use my personal judgment in carrying out the work.	1	2	3	4	5	6
16. My job gives me considerable opportunities for independence and freedom in how I do the work.	1	2	3	4	5	6
17. My job permits me to decide on my own how to go about doing the work.	1	2	3	4	5	6
18. I am satisfied with my current salary.	1	2	3	4	5	6
19. I am satisfied with my overall level of pay.	1	2	3	4	5	6
20. I am satisfied with my benefits package.	1	2	3	4	5	6
21. I am satisfied with the value of my benefits.	1	2	3	4	5	6
22. I am satisfied with my most recent pay increase.	1	2	3	4	5	6
23. I am satisfied with the raises I have typically received in the past.	1	2	3	4	5	6
24. In my organization, leaders do not continually look for opportunities to learn.	1	2	3	4	5	6

Section II. Your Willingness to do Your Job

This section asks about the extent to which you are willing to invest your energies in your job. Although it is believed that putting a lot of effort into a job is wonderful, people, in reality, have different levels of energy that they want to invest in their jobs depending on situations.

Below is a list of statements describing your willingness to invest your energy in your job. Please answer honestly about to what extent each statement is true for you. This survey maintains the confidentiality of individual responses, so your response will be strictly protected.

To what extent do you agree with each statement?

To what extent do you agree with each statement?	Strongly Disagree ⟷ Strongly Agree					
25. The work I do on this job is very important to me.	1	2	3	4	5	6
26. My job activities are personally meaningful to me.	1	2	3	4	5	6
27. The work I do on this job is worthwhile.	1	2	3	4	5	6
28. My job activities are significant to me.	1	2	3	4	5	6
29. The work I do on this job is meaningful to me.	1	2	3	4	5	6
30. I feel that the work I do on my job is valuable.	1	2	3	4	5	6
31. Even if I make a mistake in this organization, it is not often held against me.	1	2	3	4	5	6
32. Employees in this organization are able to bring up problems and tough issues.	1	2	3	4	5	6

To what extent do you agree with each statement?	Strongly Disagree ⟷ Strongly Agree					
33. Employees in this organization do not reject others for being different.	1	2	3	4	5	6
34. It is safe to take a risk in this organization.	1	2	3	4	5	6
35. No one in this organization would deliberately act in a way that undermines my efforts.	1	2	3	4	5	6
36. I exert my full effort towards my job.	1	2	3	4	5	6
37. I try my hardest to perform well on my job.	1	2	3	4	5	6
38. I strive as hard as I can to complete my job.	1	2	3	4	5	6
39. I am enthusiastic about my job.	1	2	3	4	5	6
40. I feel energetic at my job.	1	2	3	4	5	6
41. I am excited about my job.	1	2	3	4	5	6
42. At work, my mind is focused on my job.	1	2	3	4	5	6
43. At work, I pay a lot of attention to my job.	1	2	3	4	5	6
44. At work, I am absorbed by my job.	1	2	3	4	5	6
45. It is not safe to take a risk in this organization.	1	2	3	4	5	6

Section III. Demographic Information

Please answer the following questions in ways that best describe you.

46. What is your gender? (M / F)
47. In what year were you born? ( )
48. What is the highest educational degree you earned? (1) No degree (2)High school diploma (3) Bachelor's degree (4) Master's degree (5) Doctorate (6) Other ( )
49. What is your current job level? (1) Entry level without management responsibilities (2) Intermediate level without management responsibilities (3) First/Middle management (Team/Department management) (4) Senior management (Executives)Executive (5) Non-management Technical/Professional (6) Other
50. Regardless of your job title, how many employees are you responsible for supervising? ( )
51. Which of the following activities is close to what you primarily do at work? (1) General operations (2) Administrative assistance (3) Marketing/Sales (4) Finances/Accounting (5) Human resources (6) Research and development (7) Engineering in manufacturing facilities (8) Operations/Production (9) Other

APPENDIX E

RESULTS OF THE PILOT STUDY

Results of the Pilot Study

The purpose of the pilot study was to test the survey questionnaire for this study regarding whether each measure in the questionnaire is reliable, the extent to which the seven measures consisting the questionnaire are inter-correlated one another, and whether the items capture variations between individual respondents. In other words, the pilot study was conducted to answer the following question: Is the survey instrument technically adequate?

The survey questionnaire had three parts—Introduction, two major sections assessing seven research variables, and demographic information—and consisted of 51 items in total. The survey for the pilot study was administered through an online survey system—Qualtrics™.

The respondents of the survey were drawn from the target population of this study, employees working at profit organizations in the United States. In the process of data collection for the pilot study, one person in my personal network distributed the survey link through emails to the people working in two shipping companies. Additionally, I sent request emails for survey participation to those of my acquaintance working companies such as a law firm, a consulting firm, and high technology companies. After all, 40 people were responded to the survey.

The data (n=40) collected through the Qualtrics™ was downloaded as a data set for SPSS. The data was analyzed using SPSS to answer the question described earlier. In doing so, mean scores and standard deviations were calculated using a frequencies analysis. Correlations among survey items of each measure and correlations among each construct were analyzed employing bivariate correlations. Coefficient alpha was also calculated utilizing scale reliability. Additionally, histograms for each measure were produced to explore how the responses were distributed.

In the analysis, missing data was treated as pair-wise deletion. Mean scores of the seven measures ranged from 3.41 (financial rewards) to 4.72 (job engagement) on the 6-point Likert scale, and standard deviations ranged from .72 (job autonomy) to 1.27 (financial rewards). Also, as can be seen in Figure 1, each measure had variations in the responses, and the curves of the measures were very similar to normal distribution. In terms of scale reliability, job engagement, psychological meaningfulness, and financial rewards showed strong reliability, and learning culture and procedural justice had reasonable levels of reliability. However, the alpha coefficients of psychological safety and job autonomy were slightly below the criterion ($\alpha < .70$). For the psychological safety measure, because the face validity of the constructs was strong and because the number of the responses in the pilot study was small to apply the cutoff strictly, a decision was made to maintain the items of the measure. The job autonomy scale, in contrast, was revised as it was presumed that the different formats of the items might have caused the slightly low alpha. More specifically, the format of the items was standardized, and the adjective, considerable, referring to a substance on one item was removed to maintain consistency with the other items.

Table E1.

Distribution and Reliability of the Scales

Scale	Number of items	Mean	Standard deviation	Cronbach's Alpha
Job engagement	9	4.72	1.00	.95
Psychological meaningfulness	6	4.68	.97	.95
Psychological safety	5	4.46	.82	.68
Job autonomy	3	4.69	.72	.69
Financial rewards	6	3.41	1.27	.91
Learning culture	7	4.14	.78	.80
Procedural justice	7	4.04	.81	.87

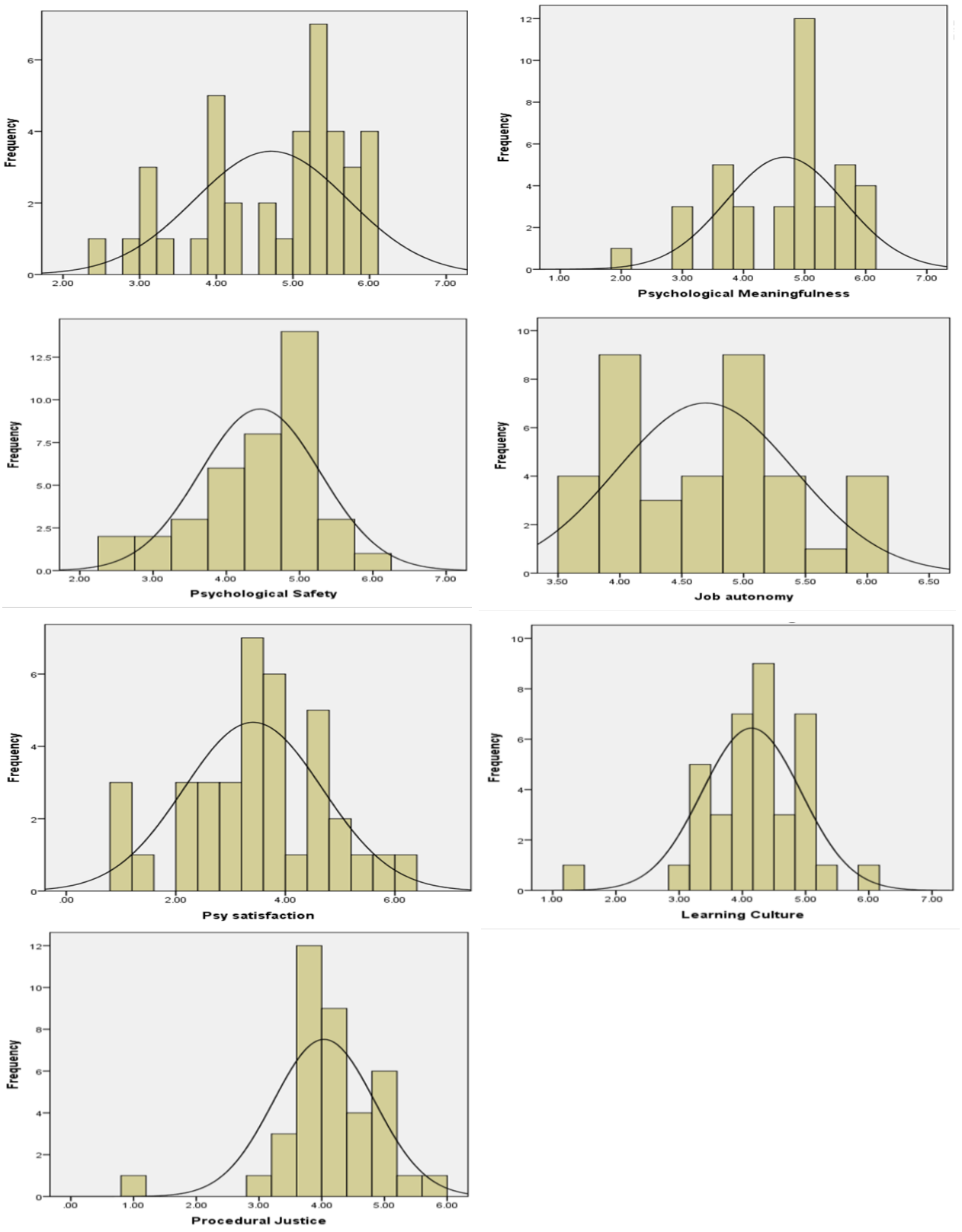


Figure E1. Distributions of the Scales

Lastly, to assess multicollinearity among the seven measures, a bivariate correlation analysis, as described earlier, was carried out. Most of the correlation coefficients were below or around .50, which means that the pairs of the variables were moderately correlated. However, the correlation between job engagement and psychological meaningfulness was shown to be strong (r=.78), whereas learning culture and procedural justice were not significantly correlated with job engagement in the pilot study.

Table E2.

Correlations among the Measures

	JE	PM	PS	JA	FR	LC	PJ
JE	1	-	-	-	-	-	-
PM	.78**	1	-	-	-	-	-
PS	.33*	.34*	1	-	-	-	-
JA	.39*	.47**	.28	1	-	-	-
FR	.33*	.42**	.49**	.35*	1	-	-
LC	.26	.32*	.45**	.33*	.59**	1	-
PJ	.10	.34*	.35*	.34*	.31	.62**	1

Note. JE: job engagement; PM: psychological meaningfulness; PS: psychological safety; JA: job autonomy; FR: financial rewards; LC: learning culture; PJ: procedural justice.
* $p < .05$, ** $p < .001$.

On the basis of the results, the methodologists and I concluded that the seven measures, overall, are adequate in terms of variance, reliability, and multicollinearity, and thus, they can be used in the main study with a minor revision of the job autonomy measure. In addition, the survey through the Qualtrics was effective in distributing the survey and convenient for respondents who work in companies. Therefore, the main study will be conducted using the final survey questionnaire (attachment A) through the Qualtrics™.

APPENDIX F

FINAL SURVEY INSTRUMENT

UNIVERSITY OF GEORGIA

A Study on Organizational Support and Employees' Willingness to do Their Jobs

The purpose of this university-based survey is to explore employees' perceptions of organizational support for their jobs and their willingness to invest their energies in their jobs. This survey has 51 items, which were drawn from scholarly research. It will take about 15 minutes to complete the survey.

This survey consists of three sections:

- The first section asks about how much support you are receiving from your organization for your job.
- In the second section, you will be asked about how much energy you are willing to invest in your job.
- In the last section, you will be asked to provide general demographic information (age, gender, etc.)

Please read each statement of the following sections carefully and give your honest opinions. There are no right or wrong answers for these questions, and your answer will be used only for research purposes.

Section I. Organizational Support

This section asks about the extent to which your organization is supportive of you to do your job. Please rate how much you agree or disagree with the following statements.

To what extent do you agree with each statement?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1. In my organization, people are rewarded for learning.	O	O	O	O	O	O
2. In my organization, people spend time building trust with each other.	O	O	O	O	O	O
3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	O	O	O	O	O	O
4. My organization makes its lessons learned available to all employees.	O	O	O	O	O	O
5. My organization recognizes people for taking initiative.	O	O	O	O	O	O
6. My organization works together with the outside community to meet mutual needs.	O	O	O	O	O	O
7. In my organization, leaders continually look for opportunities to learn.	O	O	O	O	O	O
8. In my organization, I can express my views and feelings during the procedures to evaluate my performance.	O	O	O	O	O	O
9. In my organization, I have influence over the decisions made as a result of the performance evaluation.	O	O	O	O	O	O
10. In my organization, the procedures used to evaluate my performance are applied consistently.	O	O	O	O	O	O
11. In my organization, the procedures used to evaluate my performance are free of bias.	O	O	O	O	O	O
12. In my organization, the procedures used to evaluate my performance utilize accurate information.	O	O	O	O	O	O
13. In my organization, I can appeal the decisions made as a result of my performance review.	O	O	O	O	O	O
14. In my organization, the procedures used to evaluate my performance uphold ethical and moral standards.	O	O	O	O	O	O
15. My job gives me the opportunity to use my personal judgment in carrying out the work.	O	O	O	O	O	O
16. My job gives me the opportunity for independence and freedom in how I do the work.	O	O	O	O	O	O
17. My job gives me the opportunity to decide on my own how to go about doing the work.	O	O	O	O	O	O
18. I am satisfied with my current salary.	O	O	O	O	O	O
19. I am satisfied with my overall level of pay.	O	O	O	O	O	O
20. I am satisfied with my benefits package.	O	O	O	O	O	O
21. I am satisfied with the value of my benefits.	O	O	O	O	O	O
22. I am satisfied with my most recent pay increase.	O	O	O	O	O	O
23. I am satisfied with the raises I have typically received in the past.	O	O	O	O	O	O
24. In my organization, leaders do not continually look for opportunities to learn.	O	O	O	O	O	O

Section II. Your Willingness to do Your Job

This section asks about the extent to which you are willing to invest your energies in your job. Although it is believed that putting a lot of effort into a job is wonderful, people, in reality, have different levels of energy that they want to invest in their jobs depending on situations.

Below is a list of statements describing your willingness to invest your energy in your job. Please answer honestly about to what extent each statement is true for you. This survey maintains the confidentiality of individual responses, so your response will be strictly protected.

To what extent do you agree with each statement?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
25. The work I do on this job is very important to me.	O	O	O	O	O	O
26. My job activities are personally meaningful to me.	O	O	O	O	O	O
27. The work I do on this job is worthwhile.	O	O	O	O	O	O
28. My job activities are significant to me.	O	O	O	O	O	O
29. The work I do on this job is meaningful to me.	O	O	O	O	O	O
30. I feel that the work I do on my job is valuable.	O	O	O	O	O	O
31. Even if I make a mistake in this organization, it is not often held against me.	O	O	O	O	O	O
32. Employees in this organization are able to bring up problems and tough issues.	O	O	O	O	O	O
33. Employees in this organization do not reject others for being different.	O	O	O	O	O	O
34. It is safe to take a risk in this organization.	O	O	O	O	O	O
35. No one in this organization would deliberately act in a way that undermines my efforts.	O	O	O	O	O	O
36. I exert my full effort towards my job.	O	O	O	O	O	O
37. I try my hardest to perform well on my job.	O	O	O	O	O	O
38. I strive as hard as I can to complete my job.	O	O	O	O	O	O
39. I am enthusiastic about my job.	O	O	O	O	O	O
40. I feel energetic at my job.	O	O	O	O	O	O
41. I am excited about my job.	O	O	O	O	O	O
42. At work, my mind is focused on my job.	O	O	O	O	O	O
43. At work, I pay a lot of attention to my job.	O	O	O	O	O	O
44. At work, I am absorbed by my job.	O	O	O	O	O	O
45. It is not safe to take a risk in this organization.	O	O	O	O	O	O

Section III. Demographic Information

Please answer the following questions in ways that best describe you.

46. What is your gender?

- Male
- Female

47. In what year were you born?

48. What is the highest educational degree you earned?

- (1) No degree
- (2) High school diploma
- (3) Bachelor's degree
- (4) Master's degree
- (5) Doctorate
- (6) Other

49. What is your current job level?

- (1) Entry level without management responsibilities
- (2) Intermediate level without management responsibilities
- (3) First/Middle management (Team/Department management)
- (4) Senior management (Executives)
- (5) Non-management Technical/Professional
- (6) Other

50. Regardless of your job title, how many employees are you responsible for supervising?

51. Which of the following activities is close to what you are primarily doing at work now?

(1) General operations

(2) Administrative assistance

(3) Marketing/Sales

(4) Finances/Accounting

(5) Human resources

(6) Research and development

(7) Engineering in manufacturing facilities

(8) Production

(9) Other

APPENDIX G

DOCUMENT FOR PARTICIPANT RECRUITMENT

A Study on Organizational Support and
Employees' Willingness to do Their Jobs

Dear MTurk Workers,

The purpose of this university-based survey is to explore employees' perceptions of organizational support for their jobs and their willingness to invest their energies in their jobs. This survey has 51 items, which were drawn from scholarly research. It will take about 15 minutes to complete the survey.

If you are working at a company in the United States and meet the following criteria, you can participate in this survey after you pass a qualification test.

- A full-time employee;
- Working for a company with more than 50 employees; and
- From an organization that has annual performance reviews.

The reward for survey participation is $1.00. You will only be paid once you complete the survey with correct answers to attention check items.

Go to link (will appear after you accept HIT. Further instructions will be provided once you accept the HIT.) and answer all questions. Note the secret key found at the end of the survey which you will need to complete the HIT.

APPENDIX H

CONSENT INFORMATION

Dear Potential Participant,

Many studies have shown that companies with employees who are willing to invest their energies in their jobs perform two times better than those without. In addition, research has revealed that the amount of energies employees invest in their jobs is significantly related to employee's well-being. It is increasingly clear that workplaces need to provide sufficient support so employees can be their best at work.

Moonju Sung and Dr. Wendy Ruona in the Learning, Leadership, and Organization Development program at the University of Georgia are currently conducting a study that may help employers better understand the factors that foster employees' engagement and well-being at work. We are doing this as part of Moonju Sung's Ph. D. study and in the hopes of gaining a better understanding of what employees like you believe leads to happier and productive workplace.

We would greatly appreciate if you would complete a survey. This survey consists of 51 questions, and will likely take about 15 minutes for you to complete. You will be compensated $1.00 when your response is completed and correct for attention check measures included in the survey.

If you are working at a company in the U.S. and meet the following criteria, you can participate in the survey.

- A full-time employee;
- Working for a company with more than 50 employees; and
- From an organization that has annual performance reviews.

To participate in the survey, you will need to pass a qualification test on the next page. If you do not pass the test, you will not proceed with the survey and will not be paid. In this case, your response to the qualification test will be removed from the researchers' data set.

Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time. Your confidentiality will be maintained to the degree permitted by the technology used. We will not access to any personal information that you have on your public profile at the Amazon MTurk. Also, your MTurk worker ID and IP addresses will be retained separately from your responses to the survey and destroyed after we complete the payment to you. However, there are some minimal risks associated with this research. To protect your response from being released to your organization, we advise you not to take this survey using your work computer.

If you agree to participate in this survey, please click on the "I Agree" button and move to the next page. Then, you will take the qualification test and then, proceed with the survey after you pass the test.

If you have any questions or concerns about this survey, please do not hesitate to contact Moonju Sung, (mjsung@uga.edu or 706-255-1692) or Dr. Wendy Ruona (wruona@uga.edu). Again, we thank you so much for your participation.

Best regards,

Moonju Sung and Wendy Ruona, Ph.D.

Learning, Leadership & Organization Development Program
University of Georgia

Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 609 Boyd GSRC, Athens, Georgia 30602; telephone (706) 542-3199; email address irb@uga.edu.

APPENDIX I

SUMMARY OF EMPIRICAL STUDIES DISCUSSED IN CHAPTER FIVE

A. Summary of the Research on Engagement Discussed in Conclusions

Author	Title	Sample	Measure of Engagement	Data Analysis	Research Variables (Hypothesized Antecedents of Engagement)
Alfes, Truss, Soane, Rees, and Gatenby (2013)	Relationship between line manager behavior, perceived HRM practices, and individual performance: Examining the mediating role of engagement	Employees of service-sector organizations in the United Kingdom (n=1,796)	A scale developed by Soane et al. (2012)	Structural equation modeling	**Perceived line manager behavior** and **perceived HRM practices**
Fairlie (2011)	Meaningful work, employee engagement, and other key employee outcomes: Implications for Human Resource Development	Employees in the United States and Canada (n=574)	Utrecht Work Engagement Scale (UWES-9)	Multiple regression	**Meaningful work**, **intrinsic rewards**, extrinsic rewards, leadership and organizational features, supervisory relationships, coworker relationships, organizational support, work demands and balance, engagement, disengagement, exhaustion, and work adjustment
Fouché, Rothmann, and van der Vyver (2017)	Antecedents and outcomes of meaningful work among school teachers	Teachers at public schools in South Africa (n=513)	Work Engagement Scale (Diedericks & Rothmann, 2013)	Structural equation modeling	**Calling orientation**, **job design**, **co-worker relations**, and **meaningful work**
He, Zhu, and Zheng (2014)	Procedural justice and employee engagement: Roles of organizational identification and moral identity centrality	Employees working at a financial service organization in the United Kingdom (n=222)	Job Engagement Scale (JES) developed by Rich et al. (2010)	Structural equation modeling	*Procedural justice*, **organizational identification**, and **moral identity centrality**

Author	Title	Sample	Measure of Engagement	Data Analysis	Research Variables (Hypothesized Antecedents of Engagement)
Hulkko-Nyman, Sarti, Hakonen, and Sweins (2012)	Total rewards perceptions and work engagement in elder-care organizations	154 Finnish employees and 137 Italian employees	UWES	Multiple regression analyses	**Pay**, **benefits**, feedback and possibility to influence, **stability of employment**, and **appreciated work**
Inoue et al. (2010)	Organizational justice, psychological distress, and work engagement in Japanese workers	Employees of a manufacturing company in Japan (n=243)	UWES	Bivariate analysis and multiple mediation analyses	*Procedural justice*, *interactional justice*, and **worksite support**
Karatepe (2011)	Procedural Justice, work Engagement, and job outcomes: Evidence from Nigeria	Full-time frontline employees working at hotels in Nigeria (n=143)	UWES	Multiple regression analyses	**Procedural justice**
Koyuncu, Burke, and Fiksenbaum (2006)	Work engagement among women managers and professionals in a Turkish bank: Potential antecedents and consequences	Managerial and professional women in Turkey (n=286)	UWES	Multiple regression analyses	Personal demographics, workload, **control**, **reward and recognition**, community, fairness, and **value-fit**
May, Gilson, and Harter (2004)	The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work	Employees working at an insurance firm in the United States (n=213)	A scale developed for the study	Path analysis	**Psychological meaningfulness**, **psychological safety**, **psychological availability**, **job enrichment**, **work role fit**, rewarding co-worker relations, supportive supervisor relations, **co-worker norm adherence**, resources, **self-consciousness**, and outside activities

Author	Title	Sample	Measure of Engagement	Data Analysis	Research Variables (Hypothesized Antecedents of Engagement)
Menguc, Auh, Fisher, & Haddad (2013)	To be engaged or not to be engaged: The antecedents and consequences of service employee engagement	Service employees and customers of a Canadian company	Work Engagement Scale (Salanova et al., 2005)	Multiple regression analysis	Supervisor support, **supervisory feedback**, and perceived autonomy
Moliner, Martínez-Tur, Romos, and Cropanzano (2008)	Organizational justice and extrarole customer service: The mediating role of well-being at work	Employees of service organizations in Spain (n=317)	UWES	Structural equation modeling	Distributive justice, **procedural justice**, and **interactional justice**
Park, Song, Yoon, and Kim (2014)	Learning organization and innovative behavior: The mediating effect of work engagement	Employees of various companies in Korea (n=326)	UWES	Multiple regression analysis and structural equation modeling	**Learning organization**
Saks (2006)	Antecedents and consequences of employee engagement	Employees of various organizations in Canada (n=102)	A scale developed to assess job engagement for the study	Multiple regression analyses	**Job characteristics**, **perceived organizational support**, supervisor support, rewards and recognition, procedural justice, and distributive justice
Sarti (2014)	Job resources as antecedents of engagement at work: evidence from a long-term care setting	Workers of long-term care facilities in Italy (n=167)	UWES	Multiple regression analysis	Financial rewards, **learning opportunity**, decision authority, **supervisor and coworker support**, and performance feedback
Shuck, Rocco, and Albornoz (2011)	Exploring employee engagement from the employee perspective: Implications for HRD	A large multinational service company	N/A (Qualitative research)	Document analysis, interviews, and observations	**Relationship development and attachment to co-workers**, **workplace climate**, and **opportunities for learning**

Author	Title	Sample	Measure of Engagement	Data Analysis	Research Variables (Hypothesized Antecedents of Engagement)
Shuck, Twyford, Reio, and Shuck (2014)	Human Resource Development practices and employee engagement: Examining the connection with employee turnover intentions	Employees working in the health care industry (n=207)	JES	Regression analyses (A simultaneous regression and a series of linear regressions)	**Perceived support for participation in HRD practices**
Soane, Shantz, Alfes, Truss, Rees, and Gatenby (2013)	Association of meaningfulness, well-being, and engagement with absenteeism: A moderated mediation model	Employees working for a service organization in the United Kingdom (n=625)	UWES	Multiple regression analyses	**Meaningfulness** (antecedents) and **well-being** (moderator)
Van De Voorde, Van Veldhoven, and Veld (2016)	Connecting empowerment-focused HRM and labor productivity to work engagement: The mediating role of job demands and resources	Employees in a general hospital in Netherlands (n=311)	UWES	Multiple regression analyses	**Job variety**, job autonomy, **job demands**, empowerment HRM, and labor productivity

Note: Bold indicates antecedents with significant direct effects, and italic represents antecedents having significant indirect effects.

B. Summary of the Research on Motivational Constructs and Psychological States Discussed in Conclusions

Author	Title	Sample	Construct used (Motivation or Psychological states)	Data Analysis	Effective Antecedents of the Construct
Fried and Ferris (1987)	The validity of the job characteristics model: A review and meta-analysis	About 200 relevant studies on the job characteristics model	Job satisfaction, growth satisfaction, and internal work motivation	Meta-analyses	Job feedback, job autonomy, skill variety, experienced meaningfulness, experienced responsibility, and knowledge of results

Author	Title	Sample	Construct used (Motivation or Psychological states)	Data Analysis	Effective Antecedents of the Construct
Johns, Xie, and Fang (1992)	Mediating and moderating effects in job design	Managers of a large utility company (n=300)	Job satisfaction, internal motivation, and growth satisfaction	Multiple regression analyses and path analysis	Job core dimensions, experienced meaningfulness, experienced responsibility, and knowledge of results
Humphrey, Nahrgang, and Morgeson (2007)	Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature	259 studies on job characteristics model	Job satisfaction, job involvement, organizational commitment, and internal work motivation	Meta-analysis	Job core dimensions, experienced meaningfulness, experienced responsibility, and knowledge of results, information processing, job complexity, physical demands, interdependence, feedback from others, social support, interaction outside the organization, and work conditions
Chen, Liao, and Wen's (2014)	Why does formal mentoring matter? The mediating role of psychological safety and the moderating role of power distance orientation in the Chinese context	208 mentor-protégé dyads in 15 companies in China	Affective commitment	Multiple regression analysis	Formal mentoring and psychological safety
Edmondson (1999)	Psychological safety and learning behavior in work teams	53 teams of a manufacturing company	Psychological safety	Multiple regression analyses and general linear model	Team leader coaching and context support

Author	Title	Sample	Construct used (Motivation or Psychological states)	Data Analysis	Effective Antecedents of the Construct
Gu, Wang, and Wang (2013)	Social capital and innovation in R&D teams: The mediating roles of psychological safety and learning from mistakes	151 R&D teams of nine Chinese high-tech companies (n=585)	Psychological safety	Structural equation modeling	Structural, cognitive, and relational capital
Schulte, Cohen, and Klein (2012)	Coevolution of network ties and perceptions of team psychological safety	69 work teams of a national service program in the United States	Psychological safety	Simulation Investigation for Empirical Network Analysis	Network ties
Carmeli (2007)	Social capital, psychological safety, and learning behaviors from failure in organizations	Managers and employees of 33 organizations in private and and public sectors	Psychological safety	Mediation analyses	Social capital
Cerasoli, Nicklin, and Ford (2014)	Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis	183 independent previous empirical studies, conducted between 1971 and 2014, with 212,468 respondents from school, work, and physical domains	Performance as an outcome	Meta-analysis	Contingent, salient extrinsic incentive and intrinsic motivation
Reif (1975)	Intrinsic versus extrinsic rewards: Resolving the controversy	Employees of six organizations (n=354)	Importance of rewards and need dissatisfaction as dependent variables	Descriptive analysis	The needs of employees, characteristics of employees' contexts, and intrinsic and extrinsic rewards

Author	Title	Sample	Construct used (Motivation or Psychological states)	Data Analysis	Effective Antecedents of the Construct
Mottaz (1985)	The Relative importance of intrinsic and extrinsic rewards as determinants of work satisfaction	Full-time employees of six diverse organizations in the United States (n=1,385)	Work satisfaction	Multiple regression analyses	Intrinsic rewards and extrinsic social rewards across all occupational groups and extrinsic organizational rewards in lower-level occupations
Dirani (2009)	Measuring the learning organization culture, organizational commitment and job satisfaction in the Lebanese banking sector	Employees of five banks in Lebanon (n=298)	Organizational commitment and job satisfaction	Bivariate and multiple regression analyses	Seven dimensions of learning organization
Egan, Yang, Bartlett (2004)	The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention	Employees working at the information technology industry in the United States (n=245)	Job satisfaction	Structural equation modeling	Learning organizational culture
Joo and Shim (2010)	Psychological empowerment and organizational commitment: The moderating effect of organizational learning culture	Employees of public organizations in Korea (n=294)	Organizational commitment	Multiple regression analyses	Psychological empowerment and organizational learning culture
Wang (2007)	Learning, job satisfaction and commitment: An empirical study of organizations in China	Employees working for nine companies in China (n=991)	Job satisfaction and commitment	Correlation analysis and structural equation modeling	Organizational learning culture