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**THE STRUCTURAL RELATIONSHIPS OF WORK ENGAGEMENT WITH ITS
ANTECEDENTS AND CONSEQUENCES
IN THE KOREAN BUSINESS ORGANIZATION CONTEXT**

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by

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ABSTRACT

The primary purpose of this research was to reveal the relationships of work engagement with its proposed antecedent and consequent variables in the context of Korean business organizations. In the research framework, work engagement was specified as a main variable. Six variables in three categories were proposed as antecedent variables of work engagement: job-related variables (job characteristics and task interdependence), psychological condition variables (self-efficacy and trust), and environmental variables (perceived organizational support and group cohesion). The proposed consequent variables of work engagement were cooperation intention, organizational commitment, proactive behavior, and turnover intention. A web-based survey questionnaire with adopted measures for the research variables systematically translated into Korean was developed and used in collecting data from seven Korean for-profit business organizations. A total of 612 valid responses were identified as the final set of data. The collected data were analyzed with two statistical programs (SPSS and LISREL) and several analytical methods such as basic descriptive statistics, correlation analysis, Cronbach alpha coefficient test, inter-item correlation test, multiple regression analysis, measurement model analysis, and structural mediation model analysis. The data analyses yielded the following results: (a) the adopted measures for work engagement (UWES-17) has acceptable reliability and construct validity in the Korean business organization context; (b) work engagement is influenced by the levels of the proposed antecedent variables; (c) work engagement influences all the proposed consequent variables; and (d) the casual relationships between the antecedent and consequent variables are significant through the mediating role of work engagement.

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CHAPTER ONE

INTRODUCTION

Since the nationwide financial crisis in the Korean economy in the late 1990s, Korean business organizations have been seriously concerned about their business success and sustainability (Kim & Kwon, 2003). With regard to this concern, Korean business organizations have focused their attention on the organization-level performance and have strived to improve organizational performance as measured by profit, productivity, turnover rate, customer satisfaction, reputation, and so forth. Specifically, their focus of interest was to find and strategically operate the drivers associated with performance improvement at the organizational level. In conjunction with this stream of interest, employees' work engagement, as one of the drivers, has recently received much attention. Today's organization is in need of engaged workers who are energetic, dedicated, and immersed in their work (Bakker & Schaufeli, 2008). The reason that there has been a great deal of interest in employees' work engagement is because it is considered to be a significant predictor of organization-level performance. In other words, employees' work engagement has been shown to have a statistically significant relationship with organizational performance (Baumruk, 2004; Buckingham & Coffman, 1999; Coffman & Gonzalez-Molina, 2002; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; Luthans & Peterson, 2001; Richman, 2006). In their book *First, Break All the Rules*, Buckingham and Coffman (1999) suggest that engagement has a significant relationship with productivity and profitability, employee retention, employee safety, and customer satisfaction, which represent organizational performance. Coffman and

Gonzalez-Molina (2002), in the book *Follow This Path*, noted the relationship between employees' work engagement and the indices of organizational performance, and described work engagement as a driver to lead to an organization's profit growth. Some literature provided empirical evidence that engagement predicts organizational success and financial performance (Baumruk, 2004; Richman, 2006). Salanova, Augt, and Peiro (2005) found that engagement and service climate are positively related. Some meta-analytic studies have reported that employees' work engagement is positively correlated with customer satisfaction, productivity, and profit (Harter et al., 2002) and negatively related with employee turnover (Harter et al., 2002) and absenteeism and shrinkage (Harter, Schmidt, Killham, & Asplund, 2006).

A simple logic assumed by the aforementioned studies is that when workers are engaged in their work and organization, they will be more proactive and willing to go beyond their work roles, and then more productive (Bakker & Demerouti, 2008). Given this logic, the focus of research on work engagement should be on which working conditions encourage workers to be engaged into their work and how engaged workers influence both individual and organizational performance.

Statement of the Problem

Two primary problems exist with regard to research on work engagement. The first problem is that there is a dearth of empirical research on work engagement in relation to the factors that could influence the levels of engagement as well as the factors that could be affected by the levels of engagement. As previously noted, although work engagement has been paid a great deal of attention in both the academic and practitioner

circles (Saks, 2006), little research has been devoted to work engagement from the standpoint of integrative frameworks which are designed to address the relationships of work engagement with its antecedent and consequent factors at the same time (Robinson, Perryman, & Hayday, 2004). Only a few studies have, in limited scope, been done to investigate the relationships of work engagement with its possible antecedent and consequent factors in an integrated research framework (Saks, 2006; Salanova & Schaufeli, 2008; Sonnentag, 2003). Furthermore, much of what has been studied regarding work engagement is focused only on the impact of work engagement on individual and organizational performance variables. The reason is because much of the literature on employees' work engagement has come from the viewpoint of practitioners. In academic literature, more attention should be devoted to empirical research on work engagement (Robinson et al., 2004). The integrated research framework could be made up of significant antecedent factors of work engagement, which are divided and categorized in terms of individual, group, and organizational levels, significant consequent factors representing individual and organizational performances, and work engagement playing as a mediator connecting the antecedent factors with the consequent factors.

The second problem that exists in the current research on work engagement is that employees' work engagement has been defined and measured in different ways. As a result, even though work engagement has become one of the popular research topics in both academia and practice, it has been conceived of as lacking a clear definition as a construct. Little and Little (2006) indicated that employees' work engagement has been defined and measured in a variety of ways and there is little effort to clarify the term

employees' work engagement as a construct. They also noted that it is necessary to clarify the conceptual commonalities and differences between work engagement and other traditional organizational constructs such as job satisfaction, job involvement, and organizational commitment. Additionally, in a review of literature on engagement at work, Simpson (2009) found that engagement has been defined and measured in four ways: (a) personal engagement (Kahn, 1990); (b) engagement as an positive opposite of burnout (Maslach & Leiter, 1997; Leiter & Maslach, 2004); (c) employee engagement (Buckingham & Coffman, 1999; Harter et al., 2002); and (d) work engagement (Schaufeli, Salanova, Gonzales-Roma', & Bakker, 2002). These differences have led to an ongoing debate on whether engagement is a unique construct.

The term employee engagement originated as a result of 25 years of interviews and surveys conducted by the Gallup Organization (Little & Little, 2006). A substantial amount of the literature on employees' work engagement has been written by practitioners and consultants (Saks, 2006). Therefore, while many studies were dedicated to the relationships between engagement and organizational outcomes in business organizational settings, a small percentage of the literature addresses the factors that could influence levels of employee engagement and what is significantly influenced by employee engagement at the level of organization. The paucity of literature on employee engagement research could mean that it is difficult to operationalize employee engagement as a construct.

At the inception of research on engagement, Kahn (1990) defined personal engagement as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and

emotionally during role performances” (p.694). According to his definition, engagement could be explained in the work situation and could occur in combinations of three different psychological conditions: physical, cognitive, and emotional. In their empirical work, May, Gilson, and Harter (2004) found meaningfulness, safety, and availability at work to be a psychological condition of personal engagement at work. According to Konrad (2006), employee engagement consists of three conceptual components: cognitive, emotional, and behavioral aspects. First, employees are engaged based on the cognitive belief, information, or appraisal about their organization, leaders, and work. Second, engagement encompasses attitudes toward the organization, leaders, and work. Third, engaged employees devote themselves to their organization and work with a discretionary effort. Although Kahn’s (1990), May et al.’s (2004), and Konrad’s (2006) works address the psychological conditions or antecedents necessary for engagement, they do not fully explain why individuals will respond to these conditions with varying degrees of engagement. In sum, a lack of empirical evidence on the integrative roles and functions of engagement and a variation of the way to define engagement are reasons for this research.

Purpose of the Research

The primary purpose of this research is to investigate the structural relationships of engagement at work with its plausible antecedent and consequential factors in the Korean business organization context.

For this research purpose, the following specific objectives were to be achieved:

1. Validate the proposed measurement for work engagement in the Korean business organization context.
2. Test the causal relationships between work engagement and its antecedent and consequent factors in the Korean business organization setting.
3. Identify the overall relationship between work engagement and its antecedent and consequence factors in the Korean business organization setting.

Significance of the Research

This research is an attempt to address the roles of engagement at work, and it goes beyond, but builds on, theories about traditional organizational constructs such as employee satisfaction, involvement, and commitment. As described in the *purpose of the study* section, the study aimed to address the integrative relationships between work engagement and its antecedents and consequences. Thus, the anticipated results from the study could deliver an expanded understanding of the significance of employees' work engagement including the integrative pathway through which employee's work engagement works in organizational contexts. These results would be helpful resources for researchers and practitioners who are working on how to manage employees' work engagement. Academic researchers could refer to this study to expand the research framework on organizational dynamics regarding engagement, and practitioners could develop a strategy to organize the environment which fosters more engagement of employees in their work and organization. Furthermore, by testing the relationships between employees' work engagement and organizational outcome variables in an

empirical design, the study could provide further empirical evidence to confirm previously produced results of other relevant research.

Research Questions

A total of six research questions were developed. In terms of the drivers that influence the level of employees' work engagement, the study designates eight variables as antecedents of work engagement, which are categorized into job-related, psychological conditions, and environmental conditions, based on the previous research. Four consequence variables of work engagement are included: cooperation intention, organizational commitment, proactive behavior, and turnover intention.

The validation of the scale for work engagement in the Korean business organization context is part of the significance of this research. For that reason, the following research questions will be answered:

RQ 1. To what extent do the hypothesized measurements for work engagement valid and reliable in Korean business organization contexts?

To identify the simple causal relationships of work engagement with each research variable, the following four research questions will be answered:

RQ 2-1. To what extent does each of the following impact the level of work engagement – (1) job characteristics and (2) task interdependence?

RQ 2-2. To what extent does each of the following impact the level of work engagement – (1) trust in management / peers and (2) self-efficacy?

RQ 2-3. To what extent does each of the following impact the level of work engagement – (1) perceived organizational support and (2) team cohesiveness?

RQ 3. To what extent does work engagement influence each of the following – (1) cooperation intention, (2) organizational commitment, (3) proactive behavior, (4) turnover intention?

The study ultimately aims to investigate the structural relationships of work engagement with the other variables. Thus, the final research question is stated as follows:

RQ 4. To what extent does work engagement mediate the effects of the antecedent variables on the consequent variables?

Limitations

Certain limitations may affect the interpretation of the study results.

First, this study has a limitation in the measurement of engagement. Engagement has been defined and measured based on different conceptual frameworks. As previously mentioned, engagement is generally articulated in four ways (Simpson, 2009). One of them is adopted to measure the levels of engagement at work. Therefore, the research results must be interpreted in light of the specific conceptualization of engagement.

Second, as with all empirical studies, there are other possible variables that are not included in this research. A limited number of variables, which are conceived of as driving or building engagement at work, are examined in this study. Hence, the question of what factors contribute to engagement is not fully addressed. This applies to the consequence variable in the same way. Moreover, this study uses self-report data. This may limit confidence with respect to the causal relationships among the research variables.

Third, the population of the study is basically all Korean for-profit, private organizations. However, not all the organizations are studied. A limited number of organizations that are considered as representative of the average Korean organization are randomly sampled; their employees are contacted and invited to participate in the study. Although this study applies the random sampling process to collect data, the research sample's representativeness of population is not fully guaranteed.

Lastly, the research framework in the study is drawn from theoretical assumptions and previous research results. However, an alternative framework could be considered, based on the data analysis results.

Definition of Terms

Although the following terms have been defined by many researchers, the terms are defined here specifically to correspond with the purpose of the study. The following glossary will provide a general understanding of terms used in this study. More detailed explanations of the following terms are presented in the literature review section.

Work engagement: "A positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, et al., 2002, p. 74). According to Simpson (2009), there are four streams in defining and measuring engagement at work. The four streams are described in Chapter 2, and work engagement is one of the four streams. Therefore, it is required to note that work engagement, which was coined by Schaufel, Salanova, et al. (2002), was adopted as a term indicative of employees' engagement at work for this research.

Job characteristics: According to Hackman, Oldham, Jansen, and Purdy's (1975) work, there are five core characteristics of jobs:

1. *Skill variety*: the degree to which a job requires the worker to perform activities that challenge his skills and abilities
2. *Task identity*: the degree to which the job requires completion of a "whole" and identifiable piece of work
3. *Task significance*: the degree to which the job has a substantial and perceivable impact on the lives of other people
4. *Autonomy*: the degree to which the job gives the worker freedom, independence, and discretion in scheduling work and determining how he or she will carry it out.
5. *Feedback*: the degree to which workers, in carrying out the work activities required by the job, get information about the effectiveness of their efforts

Task interdependence: "Features of inputs into the work itself that require individuals to complete the work" (Wageman, 2001, p. 198)

Self-efficacy: "An individual's beliefs about his or her abilities to mobilize cognitive resources and courses of action needed to successfully execute a specific task within a given context" (Luthans & Peterson, 2001, p. 379)

Trust: "A psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau, Sitkin, Burt, & Camerer, 1998, p. 395)

Perceived organizational support: “The extent to which employees perceive that their contributions are valued by their organization and that the firm cares about their well-being” (Eisenberger, Huntington, Hutchinson, & Sowa, 1986, p. 501)

Group cohesion: “The resultant of all the forces acting on members to remain in the group” (Festinger, 1950, p. 274).

Cooperation: “The willful contribution of personal effort to the completion of interdependence jobs” (Wagner, 1995, p. 152)

Organizational commitment: “The strength of an individual’s identification with and involvement in a particular organization” (Porter, Steers, Mowday, & Boulian, 1974, p. 604)

Proactive behavior: “Taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions” (Crant, 2000, p. 436)

Turnover intention: An employee’s level of intent to leave the organization based on his/her own decision

Assumptions

The study is based on several assumptions. The following assumptions form the foundation from which the study proceeds.

1. Individual’ internal characteristics have a significant impact on attitude and behavior toward the environment.
2. Human factors such as employee’ attitudes, knowledge, skills, value systems, and so forth are considered as valuable to improve organizational performance.

3. The employee sample will take part in the study with honesty and sincerity.
4. The results of the study will lead the Korean business organizations to a better understanding of the dynamics of working.

Conceptual Research Framework

The literature on engagement at work reports statistically significant relationships of employees' work engagement with its antecedents and consequences. According to the reported results (Buckingham & Coffman, 1999; Coffman & Gonzalez-Molina, 2002; Harter et al., 2002; Harter et al., 2006; Saks, 2006), employees' work engagement is significant to explain indices for organizational performance and is significantly influenced by personal and environmental factors. In other words, the level of engagement could be improved by managing those personal and environmental factors; and, in turn, the improved engagement could lead to better performance at the level of the individual, group, and organization. Based on a comprehensive literature review, a hypothesized framework has been developed for this study, and is presented in Figure 1. The relevance of engagement to the other variables is discussed in the next chapter.

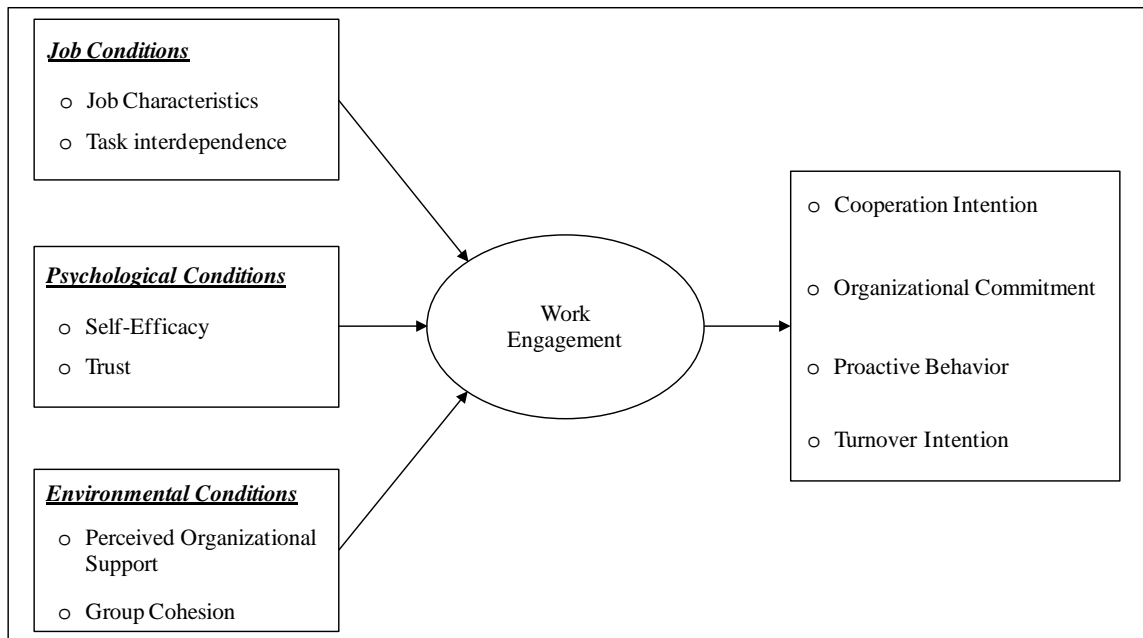


Figure 1. Nomological network between work engagement and its antecedents and consequences

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

The conceptual framework of this study is based on the theoretical and empirical literature on engagement and its potential antecedents and consequences written in both the academic and practical fields. Thus, the purpose of this chapter is to comprehensively review the related literature and determine where this study fits into the existing relevant area of knowledge. This chapter consists of the following sections: (a) engagement at work (Harter et al., 2002; Kahn 1990; Maslach & Leiter, 1997; Schaufeli, Salanova, et al., 2002), (b) the drivers of engagement at work; and (c) the consequences of engagement at work. The reasonable connections with engagement are discussed in the last two sections.

Engagement at Work

As mentioned in the previous chapter, employees' work engagement is one of the areas of increasing interest because most of the causal observations reported in both the practitioner and academic literature suggest that employees' work engagement is significantly directed to organization-level performance measured by performance indices such as financial returns (Baumruk, 2004; Richman, 2006), employee retention and customer satisfaction (Buckingham & Coffman, 1999), and service climate (Salanova et al., 2005). On the other hand, along with the increased attention to engagement, conceptual issues have arisen. Saks (2006) noted that most of the previous literature about engagement is found in practice-based journals. With regard to this indication, there is still room for argument about the conceptual precision of engagement. Discussed

in this section are definitions of employees' work engagement and the perspectives suggested by many researchers on the conceptual precision of these definitions.

Definitions

The term engagement in the workplace context has been defined in many different ways. Through a systematic review of the literature on engagement at work, Simpson (2009) outlined four streams in defining and measuring engagement at work. In accordance with this classification, the four lines of engagement research needs to be discussed.

Personal engagement. According to Kahn's (1990) research, often credited as an initial study of engagement in the academic field, personal engagement is defined as harnessing individuals' selves to their work roles. By using the in-depth interview method, Kahn (1990) explored the conditions at work by which people personally engage and disengage with two samples from two different settings (16 employees / summer camp and 16 employees / architectural firm). Based on findings of the study, Kahn (1990) stated that in engagement, people employ and express themselves during role performances in physical, cognitive, and emotional ways. In other words, an engaged employee is a person who is physically involved in their work, cognitive, vigilant, and empathically connected to other employees during the performance of their work roles. He further described personal engagement by delineating the psychological conditions in which people become personally engaged at work: meaningfulness, safety, and availability. Psychological meaningfulness refers to "a feeling that one is receiving a return on investments of one's self in a currency of physical, cognitive, or emotional

energy” (pp. 703-704) as well as being influenced by tasks, roles, and work interactions. Psychological safety is defined as a sense of being “able to show and employ one’s self without fear of negative consequences to self-image, status, or career” (p. 708). The result of the study revealed that interpersonal relationships, group and intergroup dynamics, management style and process, and organizational norms influence the level of psychological safety. Psychological availability means a sense of “having the physical, emotional, or psychological resources to personally engage at a particular moment” (p. 714), and could be influenced by physical energy, emotional energy, individual insecurity, and outside life. In his conceptualization of engagement, Kahn (1990) assumed that engagement is concerned with specific moments during the performance of one’s work roles. This means that employee’ engagement could fluctuate depending on the daily work and work situations rather than remaining constant. Kahn’s (1990) conceptualization of engagement was empirically examined by May et al. (2004). In their study, they proposed a model that is designed to examine the determinants and mediating effects of the three psychological conditions on engagement at work. As a result, they found that all three psychological conditions were significantly related to engagement at work. Psychological meaningfulness showed the strongest relation to engagement.

Engagement as a positive antipode of burnout. In studies conducted by burnout researchers, engagement was identified as the direct opposite of burnout on a continuum (González-Roma´, Schaufeli, Bakker, & Lloret, 2006; Leiter & Maslach, 2004; Maslach & Leiter, 1997; Maslach, Schaufeli, & Leiter, 2001). Leiter and Maslach (2004) defined burnout as “a psychological syndrome of exhaustion, cynicism, and inefficacy, which is

experienced in response to chronic job stressors” (p. 93). Exhaustion, cynicism, and inefficacy were considered the core dimensions of job burnout, and the components of engagement were described as the opposites of the three dimensions of job burnout (Maslach & Leiter, 1997). However, this bipolar relationship between engagement and job burnout was questioned by Schaufeli, Salanova, et al. (2002). According to their argument, engagement and burnout are distinct concepts. In other words, a highly engaged employee is not necessarily experiencing a low level of burnout.

Employee engagement. From the practitioner perspective, Harter et al. (2002) defined engagement as “the individual’s involvement and satisfaction as well as enthusiasm for work” (p. 269). In 2003, Harter and his colleagues developed a model of employee engagement in which four antecedents of engagement are delineated: (a) clarity of expectations and basic materials and equipment being provided; (b) feelings of contribution to the organization; (c) feeling a sense of belonging to something beyond oneself; and (d) feeling as though there are opportunities to discuss progress and growth. The four antecedents of employee engagement are measured by the Gallup Workplace Audit (GWA), which is called a measure of employee engagement. Other works (Fleming & Asplund, 2007; Wagner & Harter, 2006) claimed that engagement develops one micro-culture at a time, highlighting the individual view of engagement.

Work engagement. Drawing on earlier work by Kahn (1992; cf. also Kahn, 1990), Schaufeli and his colleagues defined work engagement as a “persistent, positive, affective-motivational state of fulfillment” (Maslach et al., 2001, p. 417; Salanova, Schaufeli, Llorens, Peiro, & Grau, 2000; Schaufeli, Salanova, et al., 2002). In conceptualizing work engagement, Schaufeli, Salanova,

et al. (2002) further stated that engagement is not a momentary state related to a specific work experience, but rather it is “a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior” (p. 74). With regard to the conceptual components of work engagement, Schaufeli, Salanova, et al. (2002) stated that work engagement is characterized by vigor, dedication, and absorption. They described the three components of work engagement as follows:

Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterized by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work. (p. 74)

These three conceptual components of work engagement were originally hypothesized based on the factorial structure of Maslach’s burnout inventory (Maslach & Jackson, 1981) and the results of 30 in-depth interviews (Schaufeli et al., 2001). In their study, assuming that engagement is a positive antipode of burnout, Schaufeli, Salanova, et al. (2002) conceptualized vigor and dedication as direct opposites of exhaustion and cynicism that are conceptual components of burnout. They also hypothesized absorption as a conceptual component of engagement based on Schaufeli et al.’s study (2001) in which absorption was found to be a relevant aspect of engagement. The three conceptual

components of work engagement have been empirically measured by the Utrecht Work Engagement Scale (UWES; Schaufeli, Salanova, et al., 2002). This scale has been tested and validated in other studies (Bakker, Demerouti, & ten Brummelhuis, 2012; Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Salanova, 2006; Schaufeli, Martinez, Marques-Pinto, Salanova, & Bakker, 2002; Shimazu et al., 2008; Storm & Rothmann, 2003). The validation studies for the UWES are summarized in Table 1.

Table 1

Summary of Validation Studies for the UWES

Study	Sample	Data analysis	Results
Schaufeli, Salanova, González-Romá, & Bakker, (2002) with UWES-17	314 university students and 619 employees from Spain	· Internal consistency analysis · Factorial validity analysis	· Cronbach alpha = .68 ~ .91 · Correlation = .63 ~ .70 · The three-factor model is superior to the one factor model
Schaufeli, Martinez, Marques-Pinto, Salanova, & Bakker (2002) with UWES-	1,661 university students from three countries	· Internal consistency analysis · Intercorrelation analysis · Factorial validity analysis	· Cronbach alpha = .65 ~ .86 · Correlation = .71 ~ .94 · The three-factor model with a good fit to data
Storm & Rothmann (2003) with UWES-17	2,396 policemen in South Africa	· Internal consistency analysis · Factorial validity analysis	· Cronbach alpha = .78 ~ .89 · The three-factor model with a good fit to data
Schaufeli & Bakker (2004) with UWES-17	1,698 employees from four independent sample groups	· Internal consistency analysis · Intercorrelation analysis · Factorial validity analysis	· Cronbach alpha = .70 ~ .90 · Correlation $r = .62 \sim .67$ · The three-factor model is superior to the one-factor model
Schaufeli, Bakker, & Salanova (2006) with UWES-9	14,521 from 10 different countries	· Internal consistency analysis · Factorial validity analysis	· Cronbach alpha = .85 ~ .92 · The three-factor model is superior to the one-factor model
Shimazu et al. (2008) with UWES-17	2,334 employees from Japan	· Internal consistency analysis · Test-retest reliability · Factorial validity analysis	· Cronbach alpha = .92 · Test-retest $r = .66$ · The three factor model with a good fit to data
Bakker, Demerouti, & ten Brummelhuis (2012) with UWES-9	144 employees from five occupational areas	· Internal consistency analysis · Factorial validity analysis	· Cronbach alpha = .84 · The three-factor model with a good fit to data

For the current research, work engagement (Schaufeli, Salanova, et al., 2002) was adopted to define employees' engagement at work and the UWES was used to measure the levels of employees' engagement at work.

Conceptual Issue Related to Work Engagement.

Although engagement has been defined in a number of studies and is considered a compelling factor in organizational contexts, the meaning of engagement is conceptually unclear. Macey and Schneider (2008) noted that “this can be attributed to the bottom-up manner in which the engagement notion has quickly evolved within the practitioner community” (p. 3). With regard to engagement as an organizational construct, two main issues deserve discussion. The first issue concerns what conceptual components are included in engagement. The second, related to the first issue, concerns what differentiates engagement from traditionally espoused organizational factors such as job satisfaction, job involvement, and organizational commitment.

In his work, Kahn (1990) argued that employees’ engagement at work is not the same as other employee role constructs including job involvement, organizational commitment, or intrinsic motivation. Instead, he suggested the following:

While these constructs add to our understanding of how employees perceive themselves, their work, and the relation between the two, the understandings are too general, existing at some distance from the day-to-day process of people experiencing and behaving within particular work situations (p. 693).

Job satisfaction. Job satisfaction is one of the well-known constructs in the field of organizational behavior. This construct is defined as a pleasurable or positive emotional state resulting from the appraisal of one’s job (Locke & Henne, 1986) and as the extent to which an employee has a positive affective orientation or attitude towards their job (Tett & Meyer, 1993). Igarria and Buimaraes (1993) defined job satisfaction as

“the primary affective reactions of an individual to various facets of the job and to job experiences” (p. 148).

As seen in these definitions, job satisfaction involves an affective dimension which refers to one’s attitude to his/her job. On the other hand, employee engagement is beyond the affective domain. With regard to this point, Winter (2003) suggested that engagement encompasses a much broader involvement with the organization than employee satisfaction.

Research suggests that job satisfaction influences job involvement, organizational commitment, and organizational citizenship behaviors, yet this research does not address how an individual’s job satisfaction impacts business results. For example, an employee who is satisfied in his/her job may identify with the organization. However, such satisfaction does not necessarily guarantee that the person will be motivated to perform or will be dedicated to the organization. Employee engagement differs from job satisfaction in that employee engagement, as mentioned before, has been identified as a significant predictor of the business results.

In sum, engagement is a different construct from job satisfaction in that (a) it is comprised of a combination of affective, cognitive, and behavioral components while job satisfaction refers to an affective construct; (b) it has shown to have significant relationships with organization-level results while job satisfaction has shown to be related to other attitudes or behaviors.

Job involvement. Job involvement is the degree to which one is cognitively preoccupied with and concerned with one’s present job (Paulley, Alliger, & Stone-Romero, 1994). Kanungo (1982) suggested that job involvement is a cognitive or belief

state of psychological identification. According to this definition, job involvement is the result of an individual's cognitive judgment about both his/her needs and the need-satisfying abilities of the job. In other words, job involvement conceptually contains a cognitive component. Employee engagement also differs from job involvement in that the former involves the use of emotions and behaviors in addition to cognitions. Research has shown that job involvement is related to organizational citizenship behaviors and job performance (Diefendorff, Brown, Kamin, & Lord, 2002). However, significant direct relationships between job involvement and organizational performance have not been reported.

Organizational commitment. Organizational commitment is generally defined as the degree to which an employee identifies with his/her organization and is committed to its goals. According to this definition, organizational commitment refers to an individual attitude. However, employee engagement cannot be fully explained by an attitudinal component only. It is the extent to which an individual with job ownership is attentive and absorbed in the performance of his/her roles within the organization.

According to the definition of Caldwell, Chatman, and O'Reilly (1990), commitment involves instrumental and normative factors. Meyer and Allen (1991) noted that organizational commitment includes three factors—the affective, continuance, and normative. With regard to this definition, organizational commitment conceptually takes into account one's level of commitment to stay, but does not consider one's level of productivity, performance, and effectiveness. Along with this, it has been reported that organizational commitment does not show significant relationships with organization-level outcomes. In contrast, as mentioned previously, there have been significant

relationships between employee engagement and organizational performance indices. This is similar to the difference between job satisfaction and employee engagement. Organizational commitment is rather closely related to job satisfaction in that they are both attitude-related constructs. It seems reasonable that a person who is satisfied with his/her current job will become committed to his/her organization. However, research has not shown that organizational commitment includes behavioral factors or guarantees leading employees to be more dedicated to their roles and organization.

Thus, a conclusion could be drawn that employee engagement differs from organizational commitment in that it involves another conceptual component besides attitude and explains organizational performance significantly, while organizational commitment refers to an attitudinal concept and does not impact organizational performance by itself.

Significance of Work Engagement

The significance of engagement in the context of workplace has been determined in practitioner literature (Shuck & Wollard, 2010). Some studies reported that employees' work engagement is a significant predictor of individual outcomes, organizational success, and financial performance (Bates, 2004; Baumruk, 2004; Buckingham & Coffman, 1999; Coffman & Gonzalez-Molia, 2002; Harter et al., 2002; Harter et al., 2006; Hewitt Associates, 2004).

Using a vast database established by the Gallup Organization, Harter et al. (2002) conducted a meta-analysis to identify the significance of engagement at a business-unit level. Data collected from a total of 7,939 business units in 36 companies were analyzed

in the way of meta-analysis. In their research framework, the independent variables were overall satisfaction and engagement that were measured with the GWA instrument; the dependent variables, representing organizational performance, were specified as: (a) customer satisfaction-loyalty, (b) profitability, (c) productivity, (d) turnover, (e) safety, and (f) composite performance (composition of all the dependent variables except safety). In describing the results, they noted that employees' work engagement showed generalizability across companies in its correlation with customer satisfaction-loyalty, profitability, productivity, employee turnover, and safety outcomes. To be specific, employee turnover, customer satisfaction-loyalty, and safety resulted in the strongest relationships to employees' work engagement ($r = .30$; $r = .33$; $r = .32$, respectively), and productivity and profitability also demonstrated positive correlations ($r = .25$; $r = .17$, respectively) to engagement. Additionally, engagement was significantly correlated with the composite business performance index within a given company ($r = .38$).

Hewitt Associates (2004) reported that companies with the highest employees' work engagement levels have a four-year average total share-holder return of 20% or higher, than that of companies with lower levels of engagement. The Gallup Organization's studies estimated that highly engaged employees account for 90% of a company's productivity. Some researchers noted that Gallup's employees' work engagement index estimates that 70% of employees are disengaged, and these disengaged workers are costing U.S businesses \$ 300 billion a year in lost productivity (Bates, 2004; Johnson, 2004). Only 29% of workers are estimated by the Gallup Organization to be truly engaged—working with passion and feeling connected to the organization (Johnson, 2004).

Robinson et al. (2004) noted that while employees' work engagement has been given more attention, there has been surprisingly little effort to research this topic with the academic and empirical approach. On the academic side, the first effort to empirically examine engagement in relation to its influence and outcome variables within an integrative research framework was Saks' (2006) study. The purpose of this study was to test the causal relationship of engagement with its antecedents and consequences based on social exchange theory (SET). He believed that the formation of an employee's engagement could be explained through SET. From the standpoint of SET, he stated that "one way for individuals to repay their organizations is through their level of engagement" (p. 603). Saks divided engagement into job and organization engagements in the research design with job characteristics, perceived organizational support, perceived supervisor support, rewards and recognition, and procedural and distributive justice as independent variables of employees' work engagement; and with job satisfaction, organizational commitment, intention to quit, and organizational citizenship behavior as dependent variables. The study data were collected from 102 employees working in a variety of jobs and organizations via a survey, and were analyzed in terms of the causal relationship. The study found that employees' work engagement predicts job satisfaction and organizational commitment in the positive direction, and intent to quit in the negative direction. In addition, the researcher suggested that the overall results of the study show the mediation effect of employees' work engagement, which means that the impacts of its antecedents on its consequences work through employees' work engagement.

Antecedents of Work Engagement

Drivers of Work Engagement

Despite the significance of employees' work engagement, surprisingly little effort has been made to address the factors that drive the level of employees' engagement in organizational contexts. Maslach et al. (2001) suggested that six areas of work-life result in engagement: workload, control, rewards and recognition, community and social support, perceived fairness, and values. On the other hand, Hewitt Associates (2004) proposed that drivers of engagement are people, compensation, processes and procedures, quality of life, opportunities, and work / values. As shown in Figure 2, this model includes significant individual-, group-, and organization-level factors.

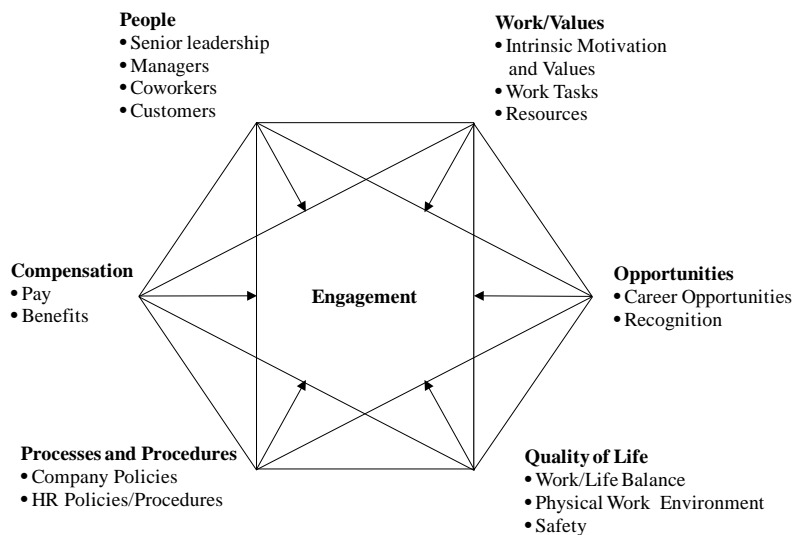


Figure 2. Hewitt Associates' drivers of engagement

Note. From Hewitt Associates. (2004). *Employee engagement: Why it matters and what you can do about it.* Chicago, IL: Author.

In discussion of the drivers of engagement at work, Bakker and Demerouti (2008) identified job resources and personal resources as key influences of engagement.

Previous studies have consistently shown that job resources such as social support (from colleagues and supervisors), performance feedback, skill variety, autonomy, and learning opportunities are positively associated with employees' engagement at work (Bakker & Demerouti, 2007; Schaufeli & Salanova, 2007). Job resources refer to those physical, social, or organizational aspects of the job that may:

- reduce job demands and the associated physiological and psychological costs;
- be functional in achieving work goals; and
- stimulate personal growth, learning, and development (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004)

In several studies, job resources were assumed to motivate workers in both the intrinsic way (Bakker & Demerouti, 2007; Jansen, de Jonge, & Bakker, 1999; Houkes, Jansen, de Jonge, & Nijhuis, 2001) and the extrinsic way (Bakker & Demerouti, 2007). According to Bakker and Demerouti's (2007) explanation with respect to the motivation roles of job resources, job resources such as proper feedback and social support help workers fulfill basic human needs for autonomy, relatedness, and competence (Deci & Ryan, 1985; Ryan & Frederick, 1997). Personal resources also influence whether or not workers decide to engage in their work (Bakker & Demerouti, 2007). Personal resources refer to an individual's sense of the ability to control and impact their work and its environment (Hobfoll, Johnson, Ennis, & Jackson, 2003). Xanthopoulou, Bakker, Demerouti, and Schaufeli's (2007) study showed significant relationships between personal resources and engagement. In their study, they investigated the roles of self-efficacy, organization-based self-esteem, and optimism as predictors of work engagement. Results demonstrated that these personal resources significantly predict engagement.

Specifically, engaged employees perceived themselves as efficacious; believed in their ability to deal with job demands given by their organization; and tended to think of their work experience optimistically.

Based on the above discussions about the drivers of engagement, the following variables are specified as relevant predictors of work engagement in this study's research design and are discussed in terms of the relation to work engagement.

Job Conditions

Job characteristics. Theories, including those presented in the *Theory of Work Adjustment* (Dawis & Lofquist, 1984), *Interactional Psychology* (Schneider, Smith, & Goldstein, 2000), and *Vocational Behavior Theory* (Holland, 1996), stress the notion that the interactions between people and environmental factors could play a critical role in determining behavior. In other words, positive interactions between individuals and their environment could lead to positive, desirable outcomes in both psychological and behavioral aspects. Job characteristics are among the environmental factors which are most closely related to individual employees. According to the Job Characteristics Model (JCM) (Hackman & Oldham, 1980), which is a fundamental taxonomy in the job characteristics literature, every job could potentially motivate workers to be involved in their work, depending on the presence of five core job characteristics: autonomy, skill variety, task feedback, task identity, and task significance. With regard to the model, Fried and Ferris (1987) suggested that the combinations among the five job characteristics explained the model's psychological outcomes better than any single job characteristic. On the other hand, by applying structural equation modeling (SEM)

analyses to compare three cross-lagged causal models of the relationship between job characteristics and employee well-being (e.g. job satisfaction, work motivation, emotional exhaustion), de Jonge et al. (2001) tested a principal assumption of Karasek's job characteristics model (see Karasek & Theorell, 1990) and the research results supported the assumption that job characteristics are causally related to the employee's well-being. In addition to this work, ter Doest and de Jonge (2006) supported the main findings of de Jonge et al.'s (2001) work. An empirical test of the relationship of job characteristics with engagement was conducted by Saks (2006). Based on Kahn's (1990) conceptual framework of engagement, he hypothesized and tested the positive relationship between job characteristics and job/organization engagement. Scores of each core job characteristic were summated to one composite variable representing the overall level of job characteristics. Through a series of regression analyses, he found that job characteristics significantly predicted job engagement ($\beta = .37, p < .001$). On the other hand, burnout researchers such as Maslach et al. (2001) have investigated the relationships between job characteristics and engagement. In Maslach et al.'s (2001) conceptual study, where engagement was identified as a positive antithesis of burnout and was measured by a burnout inventory (Maslach, Jackson, & Leiter, 1996), they noted that workload and control conditions are important for engagement. Furthermore, they stated that a lack of feedback and autonomy leads to the erosion of engagement.

Task interdependence. Task interdependence has been argued to increase the motivational potential of work itself in that individuals are encouraged to communicate, exchange, and ultimately depend on one another to complete their work (Campion, Medsker & Higgs, 1993; Gilson & Shalley, 2004; Wageman, 1995). By using surveys

and interview data, Gilson and Shalley (2004) empirically examined the impact of task interdependence on engagement in the context of team process. In their study, they hypothesized that the more team members believe that their work requires task interdependence, the more frequently the team will engage in creative processes. The hypothesis was supported by the study results ($F = 14.05, p < .01$).

Psychological Conditions

Self-efficacy. Self-efficacy has been widely recognized as a theoretically well-established construct as well as one of the major predictors of work-related effectiveness (Luthans & Peterson, 2001; Stajkovic & Luthans, 1998a, b). In the workplace context, self-efficacy, generally, refers to “an individual’s beliefs about his or her abilities to mobilize cognitive resources and courses of action needed to successfully execute a specific task within a given context” (Luthans & Peterson, 2001, p. 379). Several studies have revealed that self-efficacy is significantly related to engagement (Llorens, Schaufeli, Bakker, & Salanova, 2007; Salanova, Schaufeli, Llorens, Peiró, & Grau, 2001; Xanthopoulou et al., 2009). Some of them showed that the connection between self-efficacy and engagement can be understood with consideration of job resources. According to Xanthopoulou et al. (2007), various job resources could affect engagement through self-efficacy. In detail, the availability of job resources activates employees’ self-efficacy and helps them feel more capable of controlling their work environment; and then they feel more confident, find their work meaningful, and eventually engage in their work. Consistent with this, Llorens et al. (2007) found that job resources had lagged effects on engagement through efficacy beliefs. Additionally, structured qualitative

interviews with a group of Dutch employees from different occupations who scored high on the Utrecht Work Engagement Scale showed that engaged employees have high energy and self-efficacy (Schaufeli, Salanova, et al., 2001). In line with the findings of the above studies, Bakker and Demerouti (2007) argued that self-efficacy, as one of the personal resources, could influence engagement at work.

Trust. At the interpersonal level, Rousseau et al. (1998) defined trust as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p. 395). Baier (1986) suggested that trust is “accepted vulnerability to another’s possible but not expected ill will (or lack of good will) toward one” (p. 235). In addition, Robinson (1996) considered trust as a person’s “expectations, assumption or belief about the likelihood that another’s future actions will be beneficial, favorable or at least not detrimental” (p. 576). Even though there has been a lack of research on the relationship of trust with engagement, the relationship can be conceptually captured in Chughtai and Buckley’s (2008) work. Indicating the tendency that engagement at work has been primarily studied in relation to job-related factors, Chughtai and Buckley (2008) highlighted that it is increasingly necessary to examine the causal relationships of psychological and situational variables with engagement. They further posited that trust and work engagement are related in the way of reciprocal reinforcement. Specifically, high trust in top management, supervisor, and peers would increase employees’ engagement at work. A logic underlying this proposition is that employees may form trust in the top management, supervisor, and peers based on the social and formal support from and cognitive information about those trustees, and the trustworthiness, in turn, makes the employees think of their leaders as

those who could provide resources necessary to achieve their work goals. Eventually, this yields the employees' confidence to invest more effort in their work, which in turn may lead to greater work engagement (Schaufeli & Bakker, 2004). In addition, Kahn (1990) stated that interpersonal trust promotes psychological safety, which is one of the psychological conditions for engagement.

Environmental Conditions

Perceived organizational support. Perceived organizational support (POS) refers to as an individual's belief that their organization values their contribution to the organizational performance and cares about their well-being in their work-life (Rhoades & Eisenberger, 2002). Traditionally, organizational support theory has suggested that the consequences of POS could be explained based on the reciprocity norm. In detail, firstly, POS should encourage employees to care about their organization's welfare (Cropanzano & Mitchell, 2005; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). When the employees feel themselves valued and supported by their organization in performing their work, they are likely to create a strong sense of obligation to their organization in response to the support. Secondly, POS should enhance the employees' interest in their work. When the employees are given available resources, which are necessary for performing their job successfully, and positive feedback on their job performance, they think not only of their work as meaningful, significant, and valuable, but also of themselves as competent. This results in the increased psychological attachment to and involvement in the work. Therefore, POS could lead to favorable outcomes for both the organization and employees. This has been supported by previous studies on the

significance of POS. According to the studies, POS is in a significantly positive relationship with organizational commitment (Bishop, Scott, & Burroughs, 2000; Eisenberger et al., 1986; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997), turnover intention (Bishop et al., 2000), and overall job satisfaction (Rhoades & Eisenberger, 2002). Especially, Bishop et al. (2000) addressed that POS and turnover intention are connected with each other through the mediating role of organizational commitment.

On the other hand, according to Maslach et al.'s (2001) model, social support such as organizational support is one of the conditions that drive engagement in the workplace. Especially, the relationship of organizational support with engagement can be explored in the perspective of reciprocity such as social exchange theory (SET). From the standpoint of SET, work engagement may be one way for individual workers to respond to their organization. Particularly, in response to the support given by the organization, the individual workers may engage in their work by bringing themselves fully into their work roles and investing their personal resources such as cognitive, emotional, and physical resources (Saks, 2006). Therefore, in this research, POS is supposed as a significant predictor of work engagement.

Group cohesion. It has reportedly been known that group cohesion is a key variable to effective work teams (Cohen & Bailey, 1997; Hackman, 1987; Langfred, 1998; Sundstrom, De Meuse, & Futrell, 1990). In terms of the conceptual aspect, cohesion has usually been considered as a unidimensional construct (Mullen & Copper, 1994; Zaccaro, 1991). In the inception of group cohesion research, Festinger (1950) noted the following:

Cohesion refers to the resultant of all the forces acting on members to remain in the group. These forces may depend on the attractiveness or unattractiveness of either the prestige of the group, members of the group, or the activities in which the group engages (p. 274).

Group cohesion was also defined as “the resistance of the group to disruptive forces” (Gross & Martin, 1952, p. 553) and “a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives” (Carron, 1982, p. 124). In relatively recent years, it has referred to the degree to which individual group members feel their group attractive (Hogg, 1992; Yoo & Alavi, 2001). In the early efforts to reveal the roles of group cohesion, no relationship between group cohesion and group performance was revealed (Deep, Bass, & Vaughan, 1967; McKenney & Dill, 1966). However, a recent work on group cohesion and group performance has produced different results. Unlike the results of the early studies, two recent meta-analytic studies concluded that a small but positive relationship between group cohesion and group performance existed (Evans & Dion, 1991; Mullen & Copper, 1994). In research on group dynamics, group cohesion has been identified as having a considerable impact on group performance (Carless & De Paola, 2000; Carron, Colman, Wheeler, & Stevens, 2002; Langfred, 1998). Such a variety of results could be explained by considering the conceptual characteristics of group cohesion and the existence of latent behavioral mediators between cohesion and group performance. As described previously, cohesion is, in itself, a perceptual construct which does not reflect behavioral aspects. Thus, it could be considered that there may be latent variables to drive individual group members to behave based on their perception to the group. In this study,

work engagement is specified as such a latent mediator which connects group cohesion to performance-related behaviors more significantly.

Consequences of Work Engagement

Cooperation Intention

Even though cooperation not only has been defined by a number of researchers but also is a widely recognized concept, there is little effort to conceptually integrate the various definitions of cooperation. Smith, Carroll, and Ashford (1995) noted that one of the reasons for the difficulty in interpreting the theories and studies about cooperation is that researchers give their own definition of cooperation without referring to already supposed definitions and approaches of cooperation with one another. With regard to the definitions of cooperation, Wagner (1995) defined cooperation as contributing to the achievement of interdependent tasks by investing individual efforts. Considering cooperation as a social mechanism, Ring and Van de Ven (1994) noted that the definition of cooperation includes an individual intention to continue a reciprocal cooperative relationship. From the above review, two constructive factors from the concept of cooperation could be extracted. First, cooperation conceptually contains individual intention to contribute to other people or interdependent work. Second, people who intend to cooperate have their own motives. Some may be motivated by relationships; others may be motivated by predictable results or performance resulting from cooperation.

In this study, cooperation intention is specified as an indicator representing engaged employees' interpersonal behavior in the work-group setting.

Organizational Commitment

Organizational commitment has been generally described as the degree to which individuals identify themselves with and are involved in their organization (Contractor & Lorange, 2002; Porter et al., 1974; Yousef, 2000). In a relatively early time of the research history of organizational commitment, Porter et al. (1974) characterized organizational commitment with three factors: “strong belief in and acceptance of the organization’s goal and values; a willingness to exert considerable effort on behalf of the organization; and a strong desire to maintain membership in the organization” (p. 604).

One of the approaches to conceptualizing organizational commitment is Meyer and Allen’s (1991) three-component model. This model has been dominantly used as a framework for research on organizational commitment because it drew upon a more comprehensive understanding of organizational commitment (Cheng & Stockdale, 2003). According to Meyer and Allen’s (1991) description of the three conceptual components of organizational commitment, the affective conceptual component is defined as “the 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); and normative commitment represents “a feeling of obligation to continue employment” (p. 67). The commonality among these three components is “the view that commitment is a psychological state that (a) characterizes the employee’s relationship with the organization, and (b) has implications for the decision to continue or discontinue membership in the organization” (p. 67).

As to the relationship with engagement, organizational commitment has been found to be positively related to engagement (Demerouti, Bakker, de Jonge, Janssen, &

Schaufeli, 2001; Saks, 2006). Especially, assuming the existence of causality between them, Saks (2006) empirically examined the relationship of engagement, which was divided into job and organization, with organizational commitment. He found that job and organization engagement explained significant amounts of the variance in organizational commitment ($\beta = .17, p < .10$; $\beta = .59, p < .001$, respectively). Therefore, it could be posited that the more engaged employees are in their work roles, the more committed they are to their organization by perceiving it as a job resource provider. In this study, organizational commitment is specified as an outcome variable of engagement and is measured based on Meyer and Allen's three-factor model.

Proactive Behavior

Proactive behavior is crucial in modern organizations characterized with fast changes and reduced supervision (Salanova & Schaufeli, 2008). Although there is no agreement on the operationalization of the term proactive behavior (Salanova & Schaufeli, 2008), proactive behavior refers to "taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions" (Crant, 2000, p. 436). Proactive behavior implies an active approach toward work (Frese, Kring, Soose, & Zempel, 1996; Parker, 2000) and aims at improving given work methods and procedures as well as developing personal prerequisites for meeting future work demands. It comprises behaviors such as personal initiative (Frese et al., 1996) and taking charge (Morrison & Phelps, 1999) and is closely related to flexible role orientations (Parker, Wall, & Jackson, 1997). Therefore, proactive employees deal with their work roles in the initiative, creative, risk-taking,

goal-oriented ways (Sonnentag, 2003). In their empirical study, Salanova and Schaufeli (2008) examined the role of engagement in the relationship between job resources and proactivity. Results showed that engagement mediated the impact of job resources on proactivity. They also revealed that engagement was directly related to proactive behavior. Therefore, proactive behavior is designated in this study's research framework as an indicator of engaged employees' performance of their work roles.

Turnover Intention

Turnover intention is defined as employees' conscious and deliberate decision to leave their organization (Tett & Meyer, 1993). Actual turnover and turnover intention could be withdrawal from the organization rather than from the job (Hom & Hulin, 1981; Hom, Katerberg, & Hulin, 1979). This implies that turnover is influenced by organizational commitment more than by job satisfaction. To some degree, there may be a difference between the expression of intentions and the actual behavior on those intentions. It is seemingly easier to express intentions to leave an organization than to actually leave. Even though the intention to behave is actually not the same as the actual behavior on the intention, intention and behavior tend to be significantly related to each other in the positive direction (Ajzen & Fishbein, 1980; Igbaria & Greenhaus, 1992). Some studies assert that intention to leave has been proven to be the best predictor of turnover (Griffeth et al., 2000; van Breukelen, van der Vlist, & Steensma, 2004). Mobley, Homer, and Hollingsworth (1978) also suggested turnover intention as a significant predictor of actual turnover. On the other hand, the significant association between job satisfaction and turnover intention has been reported (Allen, 2003; Koch & Steers, 1978;

Price, 1977). Especially, Allen (2003) found the mediating role of job satisfaction in the relationship between POS and turnover. Slattery and Selvarajan (2005) reported the findings of research consistent with previous results in the turnover literature—specifically that turnover intention is significantly influenced by job satisfaction and organizational commitment. Based on these findings, turnover intention could be significantly predicted through the association between perceived benefits given by the organization and psychological attachment to the organization. Therefore, it could be proposed that the degree to which individuals are engaged in their job and organization influences the relationship between POS and turnover intention.

In the burnout literature, there is a plethora of evidence regarding the relationship between burnout and turnover intention (Huang, Chuang, & Lin, 2003). Individuals who have higher levels of burnout are likely to intend to leave their job (Jackson & Maslach, 1982). Maslach et al. (2001) noted that engagement generally refers to the opposite, or positive, antipode of burnout in the literature. Considering the relationships between engagement and burnout, it could be easily supposed that the level of individuals' engagement is negatively related to the degree to which they intend to leave their organization. There is some empirical evidence to show such a relationship (e.g., Hackman & Oldham, 1980; Harter et al., 2002; Saks, 2006; Schaufeli & Bakker, 2004).

Chapter Summary

In this chapter, the review of literature relevant to this research has been presented as a comprehensive foundation for understanding the current research framework. As

Chapter 1 indicates, this study will address the relationships of engagement with its antecedent and outcome factors within an integrative frame.

For the purpose of the study, literature on engagement has been reviewed primarily in terms of definition and significance. With regard to the definition of engagement, the following four streams have been reviewed: (a) personal engagement; (b) engagement as an antipode of burnout; (c) employee engagement; and (d) work engagement. The variables below are specified as antecedents of engagement, and they have been clustered into: (a) job conditions; (b) psychological conditions; and (c) environment conditions. They are reviewed in terms of their relationship with engagement: (a) job conditions--job characteristics and task interdependence; (b) psychological conditions--self-efficacy and trust in management/peer; and (c) environmental conditions--perceived organizational support (POS) and group cohesion. As for the discussion of the consequences of engagement in the work setting, relevant literature has been reviewed in light of individual-, group-, and organization-levels. In the following chapter, specific methods and procedures employed in this study are described.

CHAPTER THREE

METHODOLOGY

The overall purpose of this research was to address the causal relationships of engagement with its antecedent and consequence factors in the Korean for-profit organization context. This was in response to the dearth of empirical evidence of the roles of engagement in the academic literature and the necessity for an investigation that addresses what factors drive the levels of work engagement and what factors are influenced by work engagement.

Prior to analyzing and interpreting the research data, the methodologies employed in this research should be clearly addressed. Thus, this chapter describes the following issues: (a) population and sample; (b) instrumentations; (c) data collection procedures; and (d) data analysis strategies.

Population and Sampling

This research aimed to apply the hypothesized research framework, developed based on the relevant studies previously conducted in different settings, to the Korean business organization context. Thus, the research population should be the group of individuals who serve as employees of a private Korean business organization. This is because there are likely to be differences in cultural aspects between private and non-private Korean organizations, even though they might all be embedded in the same cultural context at the macro-level. This research framework was specified with a number of organizational factors. The research sample was recruited from seven private business

organizations that belong to service, finance, construction, metal, food, and IT industries. These organizations were selected because they are systemically structured with diverse work groups, job areas, and job positions. This research was conducted with self-reported data based on an individual's perception. The perception might be influenced by the job and work role of the individual. Therefore, it was required to involve the business organizations with diversity in types of work group, job, and job position in order to collect non-skewed responses from various perspectives. The research framework consists of individual, group, and organization level factors. A larger business organization is not only likely to have more advanced systems that support the improvement of performance, but also to have a variety of sub-group cultures and dynamics. Organizational support and work group climate are important factors to be investigated in the current research framework. The seven business organizations were selected as sample organizations because they are large and have diverse work groups, job areas, and work roles. A total of 1,750 employees who work in the seven Korean for-profit business organizations were identified as a whole sample group. The whole sample group was divided into seven sample sub-groups corresponding to the selected seven sample organizations. The seven organizations were different in the number of employees from each other. Therefore, for the relative representativeness of each organization to the whole sample group, the numbers of potential participants were assigned to the seven sub-groups based on the relative size of the sample organizations. The assigned numbers of potential participants were randomly selected through the Intra-Net server systems of the sample organizations. The detailed information about the sample is described in the data collection. Initial contact regarding sampling was made with representatives of the

seven Korean for-profit organizations. After the research was explained and permission to continue was granted from the sample organizations, an informational recruitment letter was sent by the representatives to the previously selected potential participants using organization-wide emailing systems. Among the recipients of the information recruitment letter, those who expressed their intention to participate in the study were identified as the research participants.

Instrumentation

Measures

Work engagement. Engagement at work has been measured in a variety of ways. In the current research, the Utrecht Work Engagement Scale (UWES) developed by Schaufeli, Salanova, et al. (2002) was adopted to measure the levels of employees' engagement in their work roles. As shown in Table 2, the items of the UWES are clustered into three subscales corresponding to the conceptual components of work engagement: vigor, dedication, and absorption.

Table 2

Work Engagement Measures (UWES-17)

Vigor

1. When I get up in the morning, I feel like going to work.
2. At my work, I feel bursting with energy.
3. At my work I always persevere, even when things do not go well.
4. I can continue working for very long periods at a time
5. At my job, I am very resilient, mentally.
6. At my job, I feel strong and vigorous

Dedication

1. To me, my job is challenging.
2. My job inspires me.

3. I am enthusiastic about my job.
4. I am proud on the work that I do.
5. I find the work that I do full of meaning and purpose.

Absorption

1. When I am working, I forget everything else around me.
 2. Time flies when I am working.
 3. I get carried away when I am working.
 4. It is difficult to detach myself from my job.
 5. I am immersed in my work.
 6. I feel happy when I am working intensely.
-

With respect to the internal consistency, values of Cronbach α for the items of UWES-17 usually range from .70 to .90 (Salanova, Bresó, & Schaufeli, 2005; Schaufeli & Bakker, 2004; Schaufeli, Salanova, et al., 2002; Storm & Rothmann, 2003). All the items were presented with a Likert-type scale ranging from (1) *never* to (5) *always*.

Job characteristics. Hackman and Oldham's (1980) Job Characteristic Model is one of the most fundamental models of job characteristics. The model includes five job characteristics (i.e., skill variety, task significance, task identity, autonomy, and task feedback). In this research, job characteristics, as a research variable, was measured based on five sub-factors of Hackman and Oldham's (1980) model (see Table 3). The sub-factors are skill variety, task significance, task identity, job autonomy, and task feedback. In subsequent studies, values of Cronbach α ranged from .70 to .90 (Judge, Bono, & Locke, 2000; Rentsch & Steel, 1998; Saks, 2006). A five-point Likert-type scale is used with anchors (a) *to a very small extent* and (5) *to a very large extent*.

Table 3

Job Characteristic Measures

<ol style="list-style-type: none"> 1. My job gives me complete responsibility for deciding how and when the work is done. 2. My job denies me any chance to use my personal initiative or judgment in carrying out the work. 3. My job gives me considerable opportunity for independence and freedom in how I do the work. 4. My job is set up so that I get constant “feedback” about how well I am doing. 5. Just doing the work required by the job provides many chances for me to figure out how well I am doing. 6. My job itself provides very few clues about whether or not I am performing well. 7. My job requires me to do many different things, using a number of different skills and talents. 8. My job requires me to use a number of complex or high-level skills. 9. My job is quite simple and repetitive. 10. The outcomes of my work can affect other people in very important ways. 11. My job is one where a lot of other people can be affected by how well the work gets done. 12. My job itself is not very significant or important in the broader scheme of things. 13. My job involves doing the whole piece of work, from start to finish. 14. My job is arranged so that I do not have the chance to do an entire piece of work from beginning to end. 15. My job provides me with a chance to completely finish the pieces of work I begin.
--

Task interdependence. In order to measure the levels of task interdependence, a six-item scale developed by Pearce, Sommer, Morris, and Frideger (1992) was employed and is presented in Table 4. This scale showed high inter-item consistency within the .88 to .97 range of Cronbach α values (Sharma & Yetton, 2003). A five-point Likert-type scale was used with anchors from (1) *strongly disagree* to (5) *strongly agree*.

Table 4

Task Interdependence Measures

-
1. My work can be performed fairly independently of others.^a
 2. My work can be planned with little need to coordinate with others.^a
 3. It is rarely required to obtain information from others to complete my work.^a
 4. My work is relatively unaffected by the performance of other individuals or departments.^a
 5. My work requires frequent coordination with the effort of others.
 6. Performance on my work is dependent on receiving accurate information from others.
-

Note. ^a Item is reverse coded.

Self-efficacy. In lieu of focusing on the situation-specific concept of self-efficacy, the current study examined a general perception that individuals have of their ability to deal with demands in the workplace. Therefore, the study used the generalized self-efficacy (GSE) scale (Schwarzer & Jerusalem, 1995; see Table 5) to measure the levels of self-efficacy. In a 25 country, cross-cultural validation study, Scholz, Gutiérrez-Doña, Sud, and Schwarzer (2002) found that values of Cronbach α ranged from .75 to .91. In a recent study on the relation to engagement, the scale yielded a good inter-item consistency (Cronbach $\alpha = .86$) (Xanthopoulou et al., 2009). The scale was administered on a five-point Likert-type scale anchored from (1) *absolutely wrong* to (5) *absolutely right*.

Table 5

General Self-Efficacy (GSE) Measures

-
1. I can always manage to solve difficult problems if I try hard enough
 2. If someone opposes me, I can find the means and ways to get what I want.
 3. I am certain that I can accomplish my goals.
 4. I am confident that I could deal efficiently with unexpected events.
 5. Thanks to my resourcefulness, I can handle unforeseen situations.

6. I can solve most problems if I invest the necessary effort.
 7. I can remain calm when facing difficulties because I can rely on my coping abilities.
 8. When I am confronted with a problem, I can find several solutions.
 9. If I am in trouble, I can think of a good solution.
 10. I can handle whatever comes my way.
-

Trust in management/peers. For the measurement of trust in management and peers, this study employed a six-item scale developed by Cook and Wall (1980) as presented in Table 6. The two sets of three items are designed to capture faith in intentions of management and peers respectively. With respect to the internal consistency, this scale yielded good values of Cronbach α , ranging from .77 to .78 (Matzler & Renzl, 2006). Each response correspond to a five-point Likert-type scale ranging from (1) *absolutely disagree* to (5) *absolutely agree*.

Table 6

Trust Measures

Trust in management

1. Management at my firm is sincere in its attempts to meet the employees' point of view.
2. I feel quite confident that the firm will always try to treat me fairly.
3. Our management would be quite prepared to gain advantage by deceiving the employees.^a

Trust in peers

1. If I got in difficulties at work I know my colleagues would try and help me out.
 2. I can trust the people I work with to lend me a hand if I needed it.
 3. Most of my colleagues can be relied upon to do as they say they will do.
-

Note. ^a Item is reverse coded.

Perceived organizational support. To measure the extent to which employees perceived that the organization valued their contributions and cared about their well-being, an eight-item shortened version of the 36-item POS scale developed by

Eisenberger et al. (1986) was used. The items are shown in Table 7. This scale has been extensively applied and previous studies have provided evidence for the reliability of the scale showing the values of Cronbach α from .74 to .95 (Eisenberger et al., 1986; Eisenberger, Fasolo, Davis-LaMastro, 1990; Wayne, Shore, & Liden, 1997). Each item of the scale corresponds to a five-point Likert-type scale anchored from (1) *strongly disagree* to (5) *strongly agree*.

Table 7

Perceived Organizational Support Measures

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

Note. ^aItem is reverse coded.

Group cohesion. Group cohesion was measured as individual perceptions of cohesion of their work groups using the six-item scale presented in the study by Podsakoff, Neihoff, MacKenzie, and Williams (1993), as shown in Table 8. Previous studies conducted with this scale produced values of Cronbach α from .86 to .93 (Podsakoff & MacKenzie, 1994; Podsakoff, MacKenzie, & Fetter, 1993; Podsakoff et al., 1993). The scale ranges from (1) *strongly disagree* to (5) *strongly agree*.

Table 8

Group Cohesion Measures

-
1. There is a great deal of trust among members of my work group.
 2. Members of my group work together as a team.
 3. The members of my work group are cooperative with each other.
-

4. My work group members know that they can depend on each other.
 5. The members of my work group stand up for each other.
 6. The members of my work group regard each other as friends.
-

Cooperation intention. To measure the level of intention to cooperate with peers, a three-item scale developed by Kim and Song (2009) was adopted and modified for the purpose of the study. The modified three items are presented in Table 9. The value of Cronbach α in the previous study was .82 (Kim & Song, 2009). All responses correspond to a five-point Likert-type scale ranging from (1) *strongly disagree* to (5) *strongly agree*.

Table 9

Cooperation Intention Measures

1. If they want to cooperate with me, I would be willing to accept it.
 2. I would like to share ideas and resources necessary for works with them.
 3. I want to work alone rather than work with them.^a
-

Note. ^aItem is reverse coded.

Organizational commitment. To measure perceived levels of organizational commitment, a scale produced by Meyer and Allen (1991, 1996, & 1997) was adopted (see Table 10). The scale has 18 items constituting three subscales, each of which measures three dimensions of organizational commitment: (a) affective commitment; (b) continuance commitment; and (c) normative commitment. The scale has been widely applied and validated. With respect to the reliability of the scale, the values of Cronbach α yielded by previous studies range from .71 to .89 (Allen & Meyer, 1996; Somer, 1995; Song, Kim, & Kolb, 2009). All the items were rated using on a five-point Likert-type scale ranging from (1) *strongly disagree* to (5) *strongly agree*.

Table 10

Organizational Commitment Measures

<i>Affective commitment</i>
1. I would be very happy to spend the rest of my career with this organization.
2. I do not feel like part of the family at my organization. ^a
3. This organization has a great deal of personal meaning for me.
4. I really feel as if this organization's problems are my own.
5. I do not feel emotionally attached to this organization. ^a
6. I do not feel a strong sense of belonging to my organization. ^a
<i>Continuance commitment</i>
1. It would be very hard for me to leave my organization right now, even if I wanted to.
2. Too much of my life would be disrupted if I decided I wanted to leave my organization now.
3. If I had not already put so much of myself into this organization, I might consider working elsewhere.
4. Right now, staying with my organization is a matter of necessity as much as desire.
5. I feel that I have too few options to consider leaving this organization.
6. One of the few negative consequences of leaving this organization would be the scarcity of available.
<i>Normative commitment</i>
1. I do not feel any obligation to remain with my current employer. ^a
2. I would feel guilty if I left this organization now.
3. I would not leave my organization right now because I have a sense of obligation to the people in it.
4. If I got another offer for a better job elsewhere, I would not feel it was right to leave my organization.
5. This organization deserves my loyalty.
6. I owe a great deal to my organization

Proactive behavior. As for the measurement of proactive behavior, a seven-item scale developed by Frese et al. (1997), which was originally developed to assess personal initiative, was employed (see Table 11). Proactive behavior was measured on a five-point Likert-type scale which ranges from (1) *never* to (5) *always*. The inter-item

consistency of this measure was found to be good (Cronbach α from .80 to .84) (Frese, Fay, Hilburger, Leng, & Tag, 1997; Salanova & Schaufeli, 2008).

Table 11

Proactive Behavior Measures

-
1. I actively attack problems.
 2. Whenever something goes wrong, I search for a solution immediately.
 3. Whenever there is a change to get actively involved, I take it.
 4. I take initiative immediately even when other do not.
 5. I use opportunities quickly in order to attain my goals.
 6. Usually I do more than I am asked to do.
 7. I am particularly good at realizing ideas.
-

Turnover intention. Turnover intention is one's propensity to leave (Slattery & Selvarajan, 2005). A three-item scale (Colarelli, 1984; see Table 12) was used to assess the extent to which employees intend to leave their organization. A recent use of this scale produced a good value of Cronbach α (.82) (Saks, 2006). Participants were asked to rate their chances to leave their organization on a five-point Likert-type scale from (1) *strongly disagree* to (5) *strongly agree*.

Table 12

Turnover Intention Measures

-
1. I frequently think of quitting my job.
 2. I am planning to search for a new job during the next 12 months.
 3. If I have my own way, I will be working for this organization one year from now.^a
-

Note. ^a Item is reverse coded.

Translations of Measures

Most of the measures adopted in this study were initially developed in English. In order to apply to Korean contexts, all the measures were translated through rigorous procedures based on the following criteria: (a) clarity, (b) common language, (c) cultural

adequacy, and (d) contextual understanding (Brislin, 1970, 1976; Harkness, van de Vijver, & Mohler, 2003; McGorry, 2000). Based on the above criteria, forward- and backward-translations were conducted with the assistance of two groups of bilingual HRD professionals who served as subject matter experts. Each group had three members. Finally, the researcher modified and confirmed the final version of the measures based on the separate comments of the HRD professionals.

Forward translation. The credibility of the initially translated measures was assessed by a panel of three HRD professionals who received doctorate degree in the United States. The professionals were asked to review all the items of the measures by comparing Korean versions with English versions, and to report their comments and suggestions. The Korean versions of the measures were revised based on the comments and suggestions and used in the backward translation process.

Backward translation. A different group of three HRD professionals were asked to translate the Korean versions back into English. The professionals also achieved a Ph. D. degree in the United States. The backward translated versions of the measures were compared with the original English versions for the conceptual equivalence by the researcher. Finally, a revised translated Korean version of the measures was confirmed to be used in this study.

Data Collection

The administrative procedure for the data collection was organized with sequentially sub-steps: (a) constructing a survey questionnaire; (b) receiving approval for the protection of human subjects; and (c) administrating the survey.

Questionnaire Construction

The first step was to develop a survey questionnaire based on the research framework. In addition to questions regarding participants' demographic information, all the measures for the research variable were included in the questionnaire. The demographic information included their organization's industry, gender, job cluster, position, and work year. A total of 105 questions were included in the questionnaire.

Survey

Prior to administering the data collection, the research was reviewed and approved by The Pennsylvania State University Institutional Review Board (IRB) to ensure that the human subjects of this research were not exposed to any undue risk. The researcher adapted a procedure from Dillman (2000) to administer the survey. A brief initial e-mail introducing the research was sent to the potential participants. The potential participants who intended to participate in the survey were identified and the survey was distributed using the Qualtric web-surveying system. The participants were informed of all the key information about the study, and asked to consent to the survey. The participants responded to all the questions, except the ones regarding demographic variables, using a Likert-type scale. One week later, a reminder e-mail regarding survey completion was sent to the participants. Subsequent follow-up e-mails were sent to participants identified as non-responders. After two weeks, additional e-mails were sent to participants once again requesting their assistance in completing the survey. Following this process, the administration time period covered a total of seven weeks. A total of 634 responses were collected through the surveying system. However, 22 of the responses were incomplete due to unknown technical errors originating from the

surveying system. The rest of the responses were used in the data analysis. Information about the sample and response rate is presented in Table 13.

Table 13

Sample and Response Rate

Organization	Industry	Sample size	Response	
			Number	Rate (%)
1	Service	350 (20.0%)	123	35.1
2	Finance	300 (17.1%)	112	37.3
3	Construction	250 (14.3%)	98	39.2
4	Metal	250 (14.3%)	87	34.8
5	Food	250 (14.3%)	73	29.2
6	Food	200 (11.4%)	62	31.0
7	IT	150 (8.6%)	57	38.0
Total		1,750 (100%)	612	34.9

As shown in Table 13, a total of 1,750 employees, who work in seven business organizations and six industries, were initially sampled, and 612 responses were accepted as being valid. The number of responses represents a response rate of 34.9%, which is acceptable (Dillman, 2000). The two organizations in the food industry showed relatively lower response rates (29.2% and 31.0%, respectively) than the other organizations, but there was no significant difference in response rate among all the organizations.

Demographic information about the sample is presented in Table 14. The percentages of male and female were 70.1% and 29.9% respectively, and more than half of the total sample (60.8%) was in their thirties. 94% of the total respondents had graduated from a 4-year college or higher. With regard to the work position, approximately 74% of the respondents held managerial positions (general manager, 15.4%; manager, 30.6%; assistant manager, 27.8%).

Table 14

Demographic Information

Variable	Value	Response (n=612)		
		Frequency	%	Cumulative %
Gender	Male	429	70.1	70.1
	Female	183	29.9	100.0
Age	20 ~ 29 years	106	17.3	17.3
	30 ~ 39 years	372	60.8	78.1
	40 ~ 49 years	118	19.3	97.4
	50 ~ 59 years	15	2.5	99.8
	60 years ~	1	0.2	100.0
Educational Level	High school	8	1.3	1.3
	2-year college	29	4.7	6.0
	4-year colleg	429	70.1	76.1
	Graduate school	146	23.9	100.0
Work Position	Executives	15	2.5	2.5
	General manager	94	15.4	17.8
	Manager	187	30.6	48.4
	Assistant manager	170	27.8	76.1
	Staff	146	23.9	100.0
Work Year	~5 years	283	46.2	46.2
	6 ~ 10 years	218	35.6	81.8
	11 ~ 15 years	74	12.1	93.9
	16 ~ 20 years	33	5.4	99.3
	20 years ~	4	0.7	100.0
Job Area	Marketing & Sales	161	26.3	26.3
	Manufacturing	52	8.5	34.8
	R & D	53	8.7	43.5
	IT & Internet	70	11.4	54.9
	Management Support	225	36.8	91.7
	Others	51	8.3	100.0

The majority of the respondents had been working in their organizations for 10 years or less (81.8%). Finally, the major job area in which the respondents were working was marketing & sales and management support (26.3% and 36.8%, respectively). Manufacturing and R&D showed relatively low proportions (8.5% and 8.7%, respectively).

Data Analysis Strategies

In order to investigate the relationships among the research variables, the researcher developed the six research questions previously discussed. These research questions are concerned with the following: (a) validation of the measurements for work engagement, as a key variable of this research; (b) investigation of simple causal relationships between the independent variables and work engagement and between work engagement and the dependent variables; and (c) structural relationships among the research variables. Therefore, given the collected data, a series of data analysis method had to be applied for each concern. This section discusses the ways in which the research data were analyzed. The data analysis techniques were conducted with SPSS 18.0 version and LISREL 8.90 version (Jöreskog & Sörbom, 2001)

Examination of Reliability and Validity

Along with basic descriptive analyses, reliability of the collected data was tested in terms of item internal consistency and inter-item correlation. Item internal consistency was examined using Cronbach's alpha coefficient (α value) estimates, which is commonly used as a measure to indicate the reliability of a psychometric score. However, Cronbach's alpha tends to be sensitive to the number of items and the size of sample. Inter-item correlations were also examined. For these two coefficients, there are no clear standards regarding what level of the coefficients are acceptable. A general criterion for Cronbach's alpha is that the lower bound of acceptability is from .6 to .7. Regarding inter-item correlation, Briggs and Cheek (1986) suggested that if the mean inter-item correlation ranges from .2 to .4, this is indicative of the optimal level of internal

consistency. Clark and Watson (1995) suggested a slightly broader range (from .15 to .50) for the mean inter-item correlation. On the other hand, the construct validity of the measures was examined with the collected data through confirmatory factor analysis (CFA). The construct validity is defined as “the extent to which a set of measured items actually reflects the theoretical latent construct that those items are designed to measure” (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 776). CFA is a useful technique in testing “a conceptually grounded theory explaining how different measured items represent important psychological, sociological, or business measures” (Hair et al., 2006, p. 770). All the measures used in this research were previously developed based on relevant theories or concepts, and some of them have been empirically validated. For this reason, exploratory factor analysis (EFA) was not applied in this research. The research variables were individually considered as a construct, some of which represent a higher-order construct with sub-constructs.

Each variable is assumed to represent a corresponding construct and, was observed with a set of measures developed based on related measurement theories. A series of CFA models for the observed variables were then specified and examined. The examinations of the CFA (or measurement) models were conducted with a set of estimates produced by CFA. In this research, several measurement model fit indices were commonly referenced to test the construct validity of all the measures: Chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), Non-Normed Fit Index (NNFI; Bentler & Bonett, 1980; Tucker & Lewis, 1973), Comparative Fit Index (CFI; Bentler, 1990), Goodness-of-Fit Index (GFI; Marsh, Balla, & McDonald, 1988), Adjusted GFI (AGFI; Marsh et al., 1988), and Standardized Root Mean Square

Residual (SRMR; Marsh et al., 1988). Additionally, some other parameter estimates, such as factor loadings, factor covariances, and error variances, were examined.

Examination of Simple Causal Relationships among the Variables

The second and third research questions are concerned with the simple causal relationships among the research variables. For each research question, the relationships to be tested were separated into two types of relationships: (a) between the independent variables and the mediation variable; and (b) between the mediation variable and the dependent variables. In order to examine such simple causal relationships, multiple regression analysis was employed. Multiple regression analysis is a statistical technique not only used to analyze the causal relationships between multiple independent variables and a single dependent variable, but also to examine the independent influences of the independent variables on the dependent variable. Chapter 4 will present detailed information regarding multiple regression model specification.

Examination of Structural Relationships among the Variables

The last research question seeks to answer about how work engagement functions in relating its antecedent variables with its consequent variables. Specifically, the research focuses on the mediating roles of work engagement. Structural equation modeling (SEM) was applied as an appropriate analytical method. SEM is “a statistical methodology that takes a confirmatory approach to the multivariate analysis of a structural theory bearing on some phenomenon” (Byrne, 1998, p. 3). Unlike regression methods, SEM allows researchers to assess a series of dependent relationships

simultaneously; thus, a hypothesized dependent variable becomes an independent variable in a subsequent dependence relationship (Hair et al., 2006). As in the CFA approach, a data analysis through SEM approach is subject to a systematical procedure: (a) model specification, (b) model identification, (c) model estimation, and (d) model evaluation. Brief descriptions of each stage are presented in Table 15.

Table 15

Systematical Procedure of SEM

Stages	Discriptions
Model Specification	This stage is to specify the number and nature of parameters to be estimated and describe the nature of the parameters. This stage concerns with some issues: (a) specification of structural relationship among latent variables, (b) specification of measurement model, (c) specification of correlations among latent variables, and (d) specification of error terms
Model Identification	This stage is to examine whether a specified model has enough information in its covarinace matrix, necessary for parameters to have their unique value or solution. A measurement and structural model may be just-identified, over-identified, or under-identified. An under-identified model leads to meaningless or improper results.
Model Estimation	This stage is to produce the estimates of parameters specified in a model. The most common method is maximum likelihood (ML) estimation that is an iterative approach to determine the parameter estimates maximizing the probability (likelihood) of the sample
Model Evaluation	This state is to examine the extent to which the model fit the sample data prior to result interpretation. In determining the model-to-data fit, a number of fit indices can be used in examining various aspects of the variance-covariance matrix.

With regard to the examination of the structural relationships among the variables, this research specified six SEM models corresponding to the number of independent variables of work engagement. Following the systematic procedure for SEM analysis, each model was examined.

Chapter Summary

The overall purpose of this study is to address the structural relationships of work engagement with its proposed antecedent and consequential factors in the Korean for-profit organizational context. The methodological strategies were set up for this purpose. With regard to sampling, the applied stratified sampling method was used to ensure the appropriate representation of the sample for the population. All the measures for the research variables were translated into Korean through rigorous procedures. With respect to data analysis, appropriate analytical methods were applied to answer the research questions. Internal consistency analysis and confirmatory factor analysis were applied to examine the reliability and construct validity of the measures. Multiple regression modeling was prepared to investigate the simple causal relationship among the variables. Finally, the structural model testing approach was applied to reveal the structural relationships among the variables.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

Chapter 4 presents the results of the statistical data analyses proposed in the previous chapters. The overall purpose of this study was to identify the structure in which work engagement mediates the relationships between its antecedent and consequence variables in the contexts of Korean business organizations. The research questions for the study purpose are revisited below:

1. *To what extent do the hypothesized measurements for work engagement valid and reliable in Korean business organization contexts?*

- 2-1. *To what extent does each of the following impact the level of work engagement – (1) job characteristics and (2) task interdependence?*
- 2-2. *To what extent does each of the following impact the level of work engagement – (1) trust in management / peers and (2) self-efficacy?*
- 2-3. *To what extent does each of the following impact the level of work engagement – (1) perceived organizational support and (2) team cohesiveness?*

3. *To what extent does work engagement influence each of the following – (1) cooperation intention, (2) organizational commitment, (3) proactive work behavior, (4) turnover intention?*

4. *To what extent does work engagement mediate the effects of the antecedent variables on the consequent variables?*

In order to answer the research questions, the research data were primarily analyzed in the ways of Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM), and Multiple Regression Analysis. SPSS 18.0 and LISREL 8.90 were employed as reliable statistical analysis applications.

Internal Consistency and Inter-correlation

In order to assess the internal consistency for each item of the measurements, an item scale analysis was conducted. Cronbach's alpha coefficients, which were produced in the item scale analysis, were used to estimate the item reliability. Table 16 shows that the measures for the variables of this study are internally consistent (Cronbach's alpha ranges from .69 to .92). Cronbach's alpha tends to be too sensitive to the number of items. Thus, the inter-item correlation for each measure was also examined. The mean inter-item correlation coefficient of the measures for work engagement was .72 which is higher than the practical criteria suggested by some scholars (Briggs & Cheek, 1986; Clark & Watson, 1995). This implies that the items may be redundant (Briggs & Cheek, 1986). It could be stated that the measures for work engagement are reliable, but somewhat specific to measure the target construct. The mean inter-item correlation coefficients of the other measures ranged from .46 to .70. This indicates that the measures are reliable.

Table 17 shows that work engagement showed significant correlation coefficients in relation to five job characteristics sub-factors (r from .31 to .56, $p < .01$), self efficacy ($r = .65, p < .01$), trust ($r = .58, p < .01$), perceived organizational support ($r = .54, p < .01$), and group cohesion ($r = .48, p < .01$).

Table 16
Reliability Estimates for the Measures

Measures	α	MIC*	Measures	α	MIC
Work Engagement	.91	.72	Trust	.78	.46
Skill variety	.84	.65	Organizational support	.90	.49
Task significance	.78	.55	Group cohesion	.93	.70
Task identity	.75	.51	Cooperation intention	.84	.65
Autonomy	.87	.69	Organizational Commitment	.89	.53
Feedback	.88	.70	Proactive behavior	.87	.55
Task interdependence	.83	.45	Turnover intention	.75	.64
Self efficacy	.91	.53			

Note. *MIC=mean inter-item correlation

However, task interdependence was revealed not to be statistically significant in correlation with the most research variables. The correlation coefficients of work engagement with its proposed consequent variables were statistically significant. Work engagement was positively correlated with cooperation intention ($r = .46, p < .01$), organizational commitment ($r = .86, p < .01$), and proactive behavior ($r = .63, p < .01$). In correlation with turnover intention, work engagement showed a negatively significant coefficient ($r = -.54, p < .0$). It is important to note that work engagement is strongly correlated with organizational commitment.

Table 17

Means, Standard Deviations, and Zero-order Inter-correlations

Measures	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Engagement	4.96	1.00	1														
2. Skill variety	3.53	0.71	.46**	1													
3. Task significance	3.80	0.69	.55**	.55**	1												
4. Task identity	3.78	0.67	.54**	.43**	.56**	1											
5. Autonomy	3.33	0.83	.42**	.31**	.35**	.40**	1										
6. Feedback	3.26	0.78	.55**	.33**	.36**	.32**	.47**	1									
7. Task interdependence	3.14	0.68	.06	.09*	.07	-.05	-.04	-.02	1								
8. Self efficacy	3.84	0.51	.65**	.37**	.50**	.46**	.45**	.47**	-.02	1							
9. Trust	3.50	0.57	.58**	.32**	.42**	.43**	.42**	.37**	.07	.45**	1						
10. Perceived organizational support	3.32	0.62	.54**	.28**	.43**	.42**	.35**	.35**	.08*	.45**	.67**	1					
11. Group cohesion	3.59	0.69	.48**	.27**	.34**	.34**	.29**	.27**	.06	.38**	.59**	.42**	1				
12. Cooperation intention	3.81	0.65	.46**	.27**	.39**	.42**	.28**	.22**	.07	.39**	.53**	.40**	.66**	1			
13. Organizational commitment	3.26	0.67	.86**	.42**	.54**	.47**	.45**	.48**	.05	.60**	.62**	.62**	.53**	.48**	1		
14. Proactive behavior	3.73	0.59	.63**	.36**	.44**	.43**	.35**	.35**	.01	.56**	.47**	.50**	.48**	.48**	.61**	1	
15. Turnover intention	2.66	0.87	-.54**	-.33**	-.45**	-.42**	-.34**	-.28**	-.10*	-.34**	-.57**	-.59**	-.51**	-.51**	-.64**	-.48**	1

Note. $n=612$. The measure of engagement was set up on the 7-anchored Likert scale, and the rest were on the 5-anchored Likert scale; *. Statistically significant at the level of $p = .05$ (2-tailed); **. Statistically significant at the level of $p = .01$ (2-tailed)

Assessment of Measurement Model

This section will assess the goodness-of-fit of proposed measurement models for each research variable. As detailed in the previous chapters, this research was designed in a framework in which work engagement was specified as an independent and mediating variable, six factors as independent variables (job characteristics, task interdependence, self-efficacy, trust, perceived organizational support, and group cohesion), and four factors as dependent variables (cooperation intention, organizational commitment, proactive behavior, and turnover intention).

With regard to the measurement model assessment, this research primarily focused on the measurements for work engagement (UWES-17; Schaufeli, Salanova, et al., 2002) because one of the research purposes is to test that the scale for work engagement are reliable and valid in the Korean business organization context.

Work Engagement

One of the main purposes of this study is to assess the validity of work engagement scale used in the study in the context of Korean business organizations. The research question for this purpose is revisited here:

RQ 1: To what extent are the hypothesized measurements for work engagement reliable and valid in Korean business organization contexts?

To answer the research question, construct validity of the measurements was identified through Confirmatory Factor Analysis (CFA). Construct validity is “the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure” (Hair et al., 2006, p. 776). The scale of work engagement,

called the Utrecht Work Engagement Scale (UWES), was developed by Schaufeli and Bakker (2004) and has been applied in many contexts (Schaufeli & Bakker, 2004; Schaufeli, Martinez, Marques-Pinto, Salanova, & Bakker, 2002; Schaufeli, Salanova, et al., 2002; Shimazu et al., 2008; Storm & Rothmann, 2003). The scale consists of three sub-scales with 17 items – *vigor* (6 items), *dedication* (5 items), and *absorption* (6 items). According to Schaufeli et al. (2002), vigor is described as high levels of energy and mental resilient at work; dedication refers to a strong involvement in one's work; and absorption is characterized by identifying oneself with their work.

Model specifications. In the previous section, the work engagement measurements were concluded to be reliable based on the reliability coefficients. On the other hand, in order to assess the validity of the work engagement measurements, two separate CFA models were specified. The first CFA model was used to test the three sub-factors of work engagement with 17 items, and the second CFA model, a higher-order model, was used to verify that the three sub-factors represent one higher-level factor—*work engagement*. The two CFA models were specified as shown in Figure 3, respectively. Work engagement was constructed with three sub-constructs—Vigor, Dedication, and Absorption, and the sub-constructs were measured by six, five, and six items respectively. In order to interpret results of the structural equation modeling analyses, two aspects should be addressed: (a) model identification and (b) model fit (Graham & Collins, 1991).

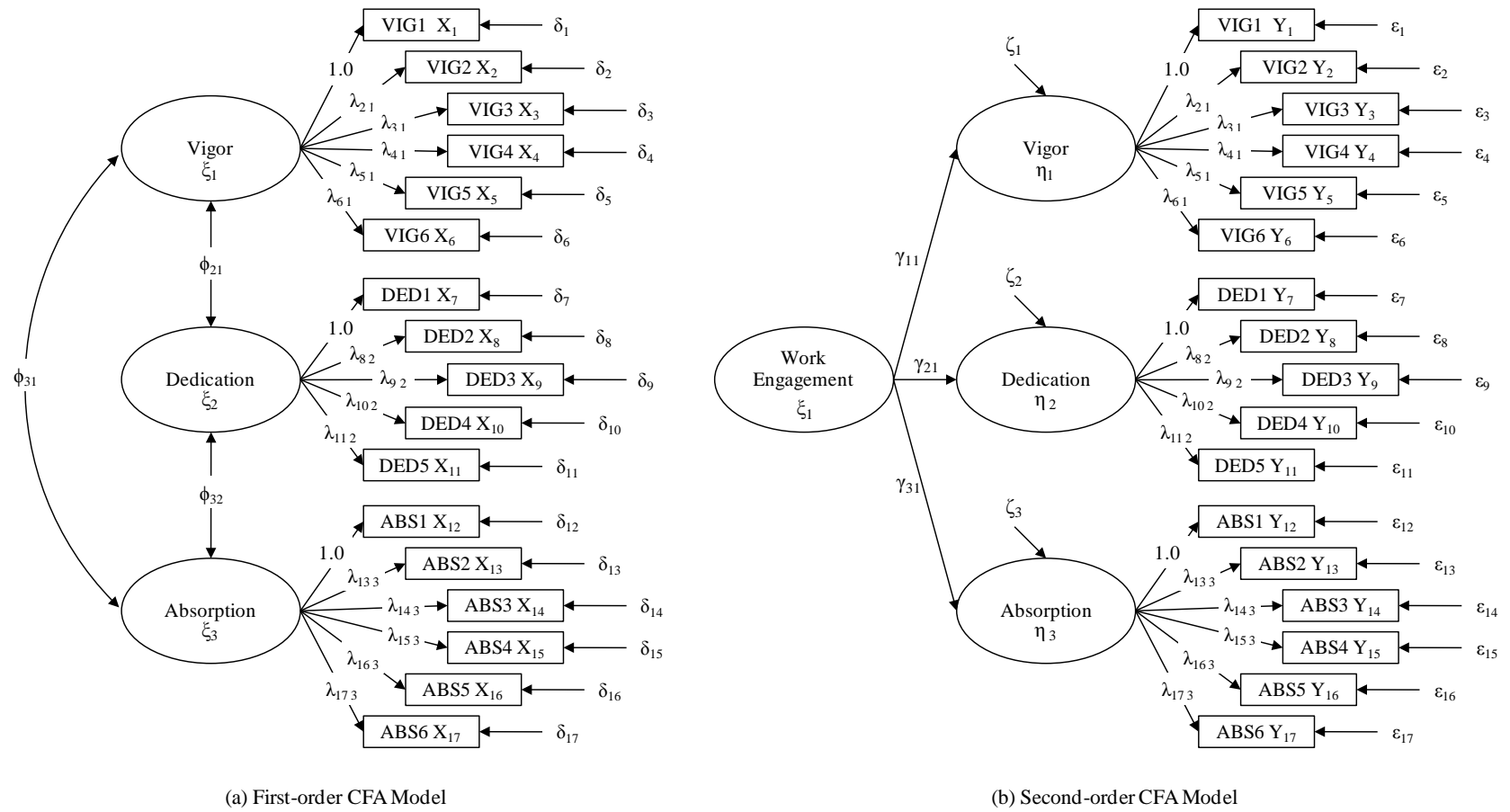


Figure 3. Hypothesized CFA models of work engagement with LISREL notations

Model identifications. The first CFA model specified as shown in Figure 3 was well identified or more specifically, overidentified. An over-identified model is one in which “the number of estimable parameters is less than the number of data points (i.e., variances, covariances of the observed variables)” (Byrne, 1998, p. 29). According to the equation below, there are 153 non-redundant elements in the variance-covariance matrix:

$$\text{Non-redundant elements} = k(k+1)/2$$

Where k is the number of measured variables in the model

Given the specification for the first-order CFA model, the number of estimable parameters is 37 including 14 factor loadings ($\lambda_{21} - \lambda_{173}$), three variances ($\xi_1 - \xi_3$), three covariances ($\phi_{21} - \phi_{32}$), and 17 measurement error variances ($\delta_1 - \delta_{17}$), and the number of non-redundant elements in the variance-covariance matrix is 153. Thus, the model could be considered as an over-identified model with 116 degrees of freedom. Regarding the identification issue of the second-order CFA model, the model has a total of 37 estimable parameters consisting of 14 first-order regression coefficients ($\lambda_{21} - \lambda_{173}$), three second-order regression coefficients ($\gamma_{11} - \gamma_{31}$), 17 measurement error variances ($\delta_1 - \delta_{17}$), and three residual error terms ($\zeta_1 - \zeta_3$). Given that there are 153 non-redundant elements in the variance-covariance matrix, it could be concluded that the second-order CFA model is over-identified with 116 degrees of freedom.

Model fit assessments. Secondly, two CFAs were conducted, based on the above model specifications, to assess the extent to which the hypothesized models fit the given data. Summarized results of the two CFAs are presented in Table 17-1. For the first-order CFA model the chi-square [$\chi^2(612) = 592.6; \chi^2/df = 5.11; p < .001$] was statistically significant which indicates the lack of a close model fit with the data. However, the chi-

square is known to be sensitive to sample size. For example, a hypothesized model with a large number of cases is likely to be statistically significant even though the model has trivial deviations from a perfect model. As a result other available practical fit indices need to be referenced. Given the overall pattern of the fit indices for the first-order model shown in Table 17-1 (RMSEA = .08, NNFI = .99, CFI = .99, GFI = .90, AGFI = .87, and SRMR = .03), the fit of the model was judged to be acceptable. While GFI and AGFI are affected by sample size (e.g., see Marsh et al., 1988), NNFI (Bentler & Bonett, 1980), which was originally known as RHO (Tucker & Lewis, 1973), CFI (Bentler, 1990), and RMSEA (Browne & Cudeck, 1993) are relatively unaffected by sample size. For this reason, NNFI, CFI and RMSEA have been most often used as indices of practical fit in SEM. All three indices indicate acceptable fit of the model with the given data. The second-order CFA model of work engagement was designed to verify that the three sub-factors of work engagement represent one factor. As shown in Table 18-1, the chi-square for the second-order CFA model [$\chi^2(612) = 583.7; \chi^2/df = 5.16; p < .001$] was statistically significant indicating that the model is lack of acceptable fit with the data. However, as previously noted, it is necessary to consider practical fit indices. All the practical indices for the second-order CFA model were in the acceptable range. RMSEA (.08), NNFI (.99), and CFI (.99), which are not relatively sensitive to sample size, indicate appropriate fit with the data.

In other words, all the indices resulting from the CFA for work engagement confirmed that the hypothesized three-factor measurement model of work engagement fit appropriately with the data collected from the study sample in Korean business contexts.

Table 18-1

Fit Indices for the Hypothesized Models of Work Engagement

Models	χ^2	df	RMSEA	NNFI	CFI	GFI	AGFI	SRMR
First-order	592.6**	116	.08	.99	.99	.90	.87	.03
Second-order	583.7**	116	.08	.99	.99	.90	.86	.03

Table 18-2

Estimates of Parameters for Measurement Model of Work Engagement

<i>Observed Measure</i>	Vigor	Dedication	Absorption	$1-\Theta_\epsilon$
	Λ			
VIG1	.917			.842
VIG2	.884			.815
VIG3	.872			.735
VIG4	.858			.781
VIG5	.840			.824
VIG6	.841			.691
DED1		.903		.804
DED2		.908		.760
DED3		.897		.783
DED4		.897		.805
DED5		.910		.815
ABS1			.857	.737
ABS2			.831	.828
ABS3			.885	.818
ABS4			.903	.705
ABS5			.905	.702
ABS6			.838	.708
<i>Latent Variable</i>	Φ			
Vigor	1.000			
Dedication	.985	1.000		
Absorption	.877	.902	1.000	

Note. VIG = vigor, DED = dedication, and ABS = absorption.

The factor loadings of the first-order CFA of work engagement are displayed in Table 18-2. All of the factor loadings were higher than .80, and all the items are well

loaded on the three sub-factors. Therefore, it can be concluded that the three-factor model proposed by Schaufeli and Bakker (2004) is valid in the Korean business organization context. In summary, based on the above results of the reliability test and CFAs, it could be concluded that the measurements of work engagement (UWES-17; Schaufeli & Bakker, 2004) are reliable and valid in the Korean business organization context.

Independent Variables

Model specifications. In this research, three types of independent variables of work engagement were proposed: job condition, psychological condition, and organizational condition. Job characteristics and task interdependence are job condition-related variables; self-efficacy and trust are psychological condition-related variables; and perceived organizational support and group cohesion are organizational condition-related variables. Measurement models for each independent variable were specified as illustrated in Figure 4-1. Job characteristics has five sub-constructs with 15 items: task interdependence as a unidimensional construct is measured with six items; self-efficacy is measured with 10 items representing a single construct; trust consists of two sub-constructs with six items; perceived organizational support is measured as a single construct with eight items; and group cohesion is represented as a single construct with six items. All the specifications were performed based on the related theories and previous studies for each independent variable, and all the factor variances were fixed at 1.0 to estimate all the factor loadings.

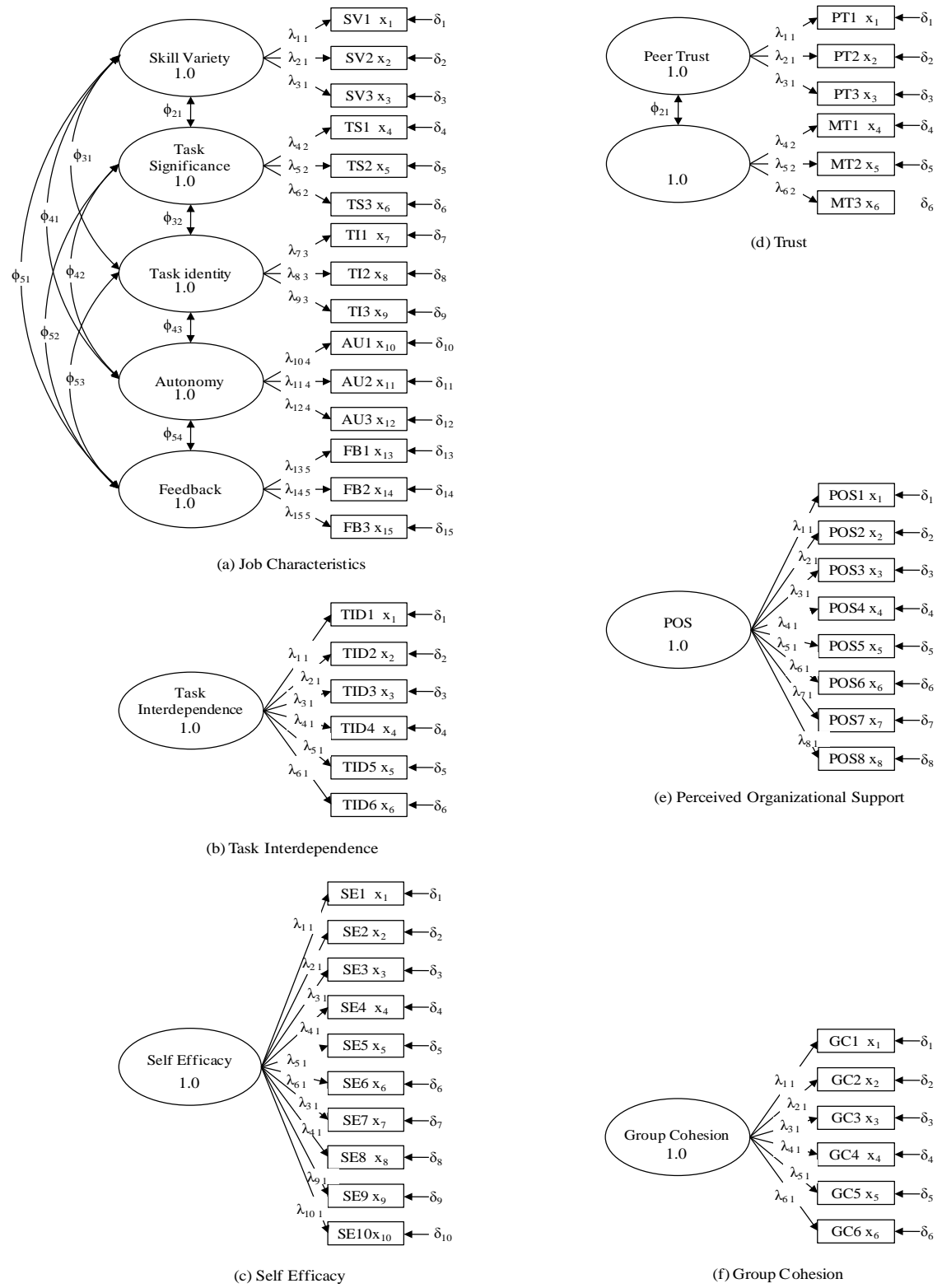


Figure 4-1. Specifications of measurement models for independent variables with LISREL notations.

Model identifications. In order to deal with measurement model identification issues the algebraic identification technique was employed. With the measurement model specifications presented in Figure 4-1, all the models were well identified. Specifically, the measurement model for job characteristics has a total of 120 non-redundant elements. The number of estimable parameters in the variance-covariance matrix is 40 including 15 factor loadings ($\lambda_{11} - \lambda_{155}$), 10 covariances ($\phi_{21} - \phi_{54}$), and 15 measurement error variances ($\delta_1 - \delta_{15}$). Thus, in terms of the algebraic identification, the measurement model for job characteristics could be concluded as being well identified with 80 degrees of freedom. For the measurement model for task interdependence the number of estimable parameters is 12, including six factor loadings ($\lambda_{11} - \lambda_{61}$) and six measurement error variances ($\delta_1 - \delta_6$). Given the number of non-redundant elements in the variance-covariance matrix the measurement model for task interdependence could be considered as an algebraically well-identified model with nine degrees of freedom. The model for self-efficacy has 55 non-redundant elements in the variance-covariance matrix. Given the model specification, a total of 20 parameters can be estimated: 10 factor loadings ($\lambda_{11} - \lambda_{101}$) and 10 measurement error variances ($\delta_1 - \delta_{10}$). Thus, the measurement model for self-efficacy could be viewed as an over-identified model with 35 degrees of freedom. Regarding the identification of the measurement model for trust and given the model specification, a total of 13 parameters can be estimated: six factor loadings ($\lambda_{11} - \lambda_{62}$), one covariance (ϕ_{21}), and six measurement error variances ($\delta_1 - \delta_6$). The number of non-redundant elements in the variance-covariance matrix is 21. Therefore, it could be stated that the measurement model for trust with eight degrees of freedom is algebraically over-identified. The measurement model for perceived organizational support could be

considered as an over-identified model with 20 degrees of freedom because there are 36 non-redundant elements in the variance-covariance matrix, 16 estimable parameters including eight factor loadings ($\lambda_{11} - \lambda_{81}$) and eight measurement error variance ($\delta_1 - \delta_8$). Finally, the measurement model for group cohesion has 21 non-redundant elements in the variance-covariance matrix, and a total of 12 parameter, six factor loadings ($\lambda_{11} - \lambda_{61}$) and six measurement error variances ($\delta_1 - \delta_6$), can be estimated in the model. Thus, it could be concluded that the measurement model for group cohesion with nine degrees of freedom is algebraically over-identified. Summarized results of the algebraic identifications for each model are presented in Table 19-1.

Table 19-1

Algebraic Identifications of Measurement Models for Independent Variables

Model	Non-redundant Elements (a)	Estimable Parameter (b)			df (a-b)
		Factor Loadings (λ)	Factor Covariance (ϕ)	Error Variance (δ)	
Job Characteristics	120	15	10	15	80
Task Interdependence	21	6	-	6	9
Self Efficacy	55	10	-	10	35
Trust	21	6	1	6	8
POS*	36	8	-	8	20
Group Cohesion	21	6	-	6	9

Note. *POS = perceived organizational support

Model fit assessments. In order to assess the goodness-of-fit of the measurement models for the independent variables to the given data, a series of CFAs were conducted based on the model specifications illustrated in Figure 4-1. Each of the CFAs produced statistical and practical goodness-of-fit indices and some of the indices are presented for each measurement model in Table 19-2. As a number of goodness-of-fit indices are concerned with different aspects of fit, it is recommended to examine multiple fit indices (Thompson, 2000). In this section, a series of statistical and practical goodness-of-fit

indices were considered to examine the degree to which the measurement models for the independent variables fit the given data.

Table 19-2

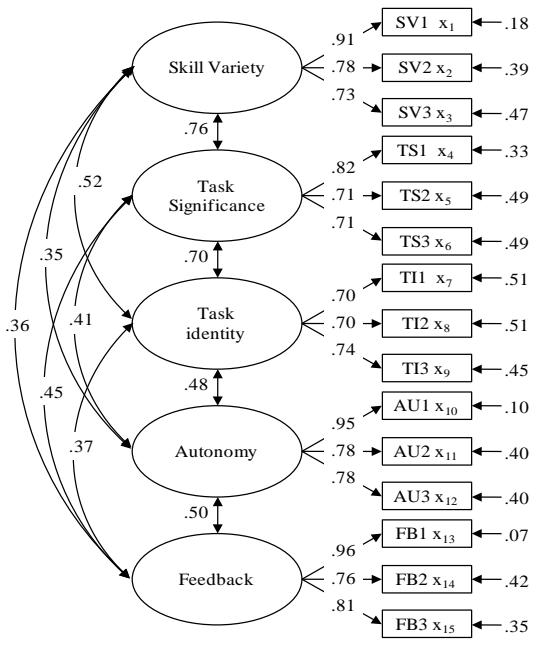
Mode Fit Indices of Measurement Models for Independent Variables

Models	χ^2	<i>df</i>	RMSEA	NNFI	CFI	GFI	SRMR
Job Characteristics	238.710**	80	.06	.98	.98	.95	.04
Task Interdependence	42.251**	9	.08	.94	.96	.96	.05
Self Efficacy	154.846**	35	.07	.97	.98	.93	.04
Trust	24.285**	8	.06	.93	.94	.95	.04
POS*	47.302**	20	.05	.91	.94	.93	.04
Group Cohesion	31.986**	9	.06	.99	.99	.98	.01

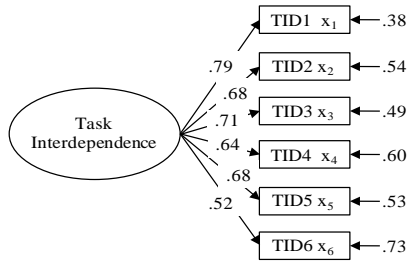
Note. *POS = perceived organizational support; ** Statistically significant at the level of $p = .05$ (2-tailed)

The chi-square for job characteristics measurement model specified with five sub-factors and 15 items was statistically significant [$\chi^2 (612) = 238.710, df = 80, p < .01$]. Statistically it could be concluded that the measurement model does not fit the given data. However, since the chi-square is known to be sensitive to sample size and the sample size is relatively large ($N = 612$), other practical indices were examined. Given the overall pattern of practical fit indices (RMSEA = .06, NNFI = .98, CFI = .98, GFI = .95, & SRMR = .04), the fit of the model with the data could be judged to be acceptable. With regard to the model for task interdependence, a statistically significant chi-square was estimated [$\chi^2 (612) = 42.251, df = 9, p < .01$]. However, the other practical fit indices showed that the model fit was acceptable (RMSEA = .08, NNFI = .94, CFI = .96, GFI = .96, & SRMR = .05). Based on the overall pattern of the model fit estimates, it could be stated that the model for task interdependence fits the data. The model for self-efficacy also showed acceptable fit with the data. Although the chi-square [$\chi^2 (612) = 154.846, df$

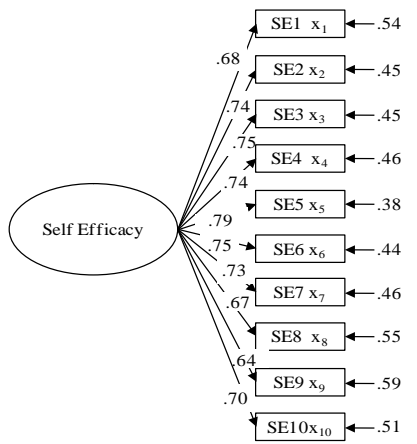
= 35, $p < .01$] indicated a lack of model fit with the data, the other practical indices showed that the model has a nearly acceptable fit with the data (RMSEA = .07, NNFI = .97, CFI = .98, GFI = .93, & SRMR = .04). Regarding the model for trust, the practical fit indices showed an overall pattern indicating that the model fit is acceptable (RMSEA = .06, NNFI = .93, CFI = .94, GFI = .95, & SRMR = .04), while the chi-square did not indicate acceptable fit [χ^2 (612) = 24.285, $df = 8$, $p < .01$]. The chi-square estimation of the model for perceived organizational support resulted in statistical evidence that the model fit is not acceptable [χ^2 (612) = 47.302, $df = 20$, $p < .01$]. However, the other practical fit indices showed that the model acceptably fit the data (RMSEA = .05, NNFI = .91, CFI = .94, GFI = .93, & SRMR = .04). Like the index patterns in the previous model, the model for group cohesion resulted in a statistically significant chi-square [χ^2 (612) = 31.986, $df = 9$, $p < .01$] and practical indices showing acceptable model fit with the data (RMSEA = .06, NNFI = .99, CFI = .99, GFI = .98, & SRMR = .01). In summary, it could be stated that all the models for the independent variables have acceptable fit with the data. The factor loadings, factor covariances, and measurement error variances for each model are illustrated in Figure 4-2.



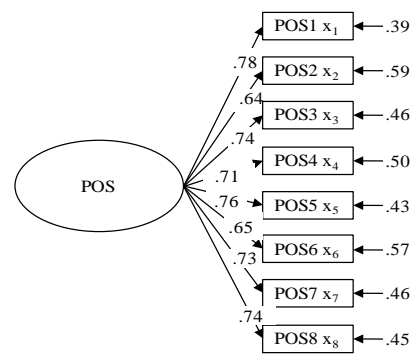
(a) Job Characteristics



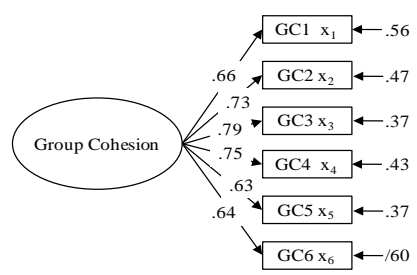
(b) Task Interdependence



(c) Self Efficacy



(e) Perceived Organizational Support



(f) Group Cohesion

Figure 4-2. Factor loadings, factor covariances, and error variances for measurement models.

Dependent Variables

Model specifications. The framework for this research includes four proposed dependent variables: *cooperation intention*, *organizational commitment*, *proactive behavior*, and *turnover intention*. Measurement models for each independent variable were specified as illustrated in Figure 5-1. Specifically, the model for cooperation intention was specified as a single factor with three items; the model for organizational commitment was designed with three sub-factors and 18 items; the model for proactive behavior was specified as a single factor with seven items; and the model for turnover intention represented turnover intention as a single factor with three items. All the specifications were based on the related theories and previous studies for each independent variable, and all the factor variances were fixed at 1.0 to estimate all the factor loadings.

Model identifications. The algebraic identification technique was employed in order to examine the model identification for each dependent variable measurement model. Given the measurement model specifications illustrated in Figure 5-1, all the models were judged to be identified. The measurement model for cooperation intention has a total of six non-redundant elements. The number of estimable parameters in the variance-covariance matrix is six including three factor loadings ($\lambda_{11} - \lambda_{31}$) and three measurement error variances ($\delta_1 - \delta_3$). Thus, the model is just-identified. The just-identified model is a model in which “the number of data variances and covariances equals the number of parameters to be estimated” (Byrne, 1998, p. 29). The model for organizational commitment specified with three sub-factors and 18 items has a total of 171 non-redundant elements in the variance-covariance matrix. On the other

hand, the given model specification requested 30 parameters to be estimated, including 18 factor loadings ($\lambda_{11} - \lambda_{183}$), three factor covariances ($\phi_{21} - \phi_{32}$), and 18 measurement error variances ($\delta_1 - \delta_{18}$). Therefore, in terms of the algebraic identification, the measurement model for organizational commitment is over-identified with 132 degrees of freedom. The model specification for proactive behavior was supposed to estimate 14 parameters including seven factor loading ($\lambda_{11} - \lambda_{71}$) and seven measurement error variances ($\delta_1 - \delta_7$). Given that there are a total of 28 non-redundant elements in the variance-covariance, the measurement model for proactive behavior is over-identified with 14 degrees of freedom.

Like the model for cooperation intention, the model for turnover intention is also algebraically just-identified because the number of parameters estimable with the given model specification, which includes three factor loadings ($\lambda_{11} - \lambda_{31}$) and three measurement error variances ($\delta_1 - \delta_3$), equals the number of non-redundant elements in the variance-covariance matrix. In summary, all the measurement models specified were identified. Summarized results of the algebraic identifications for each model are presented in Table 19-1.

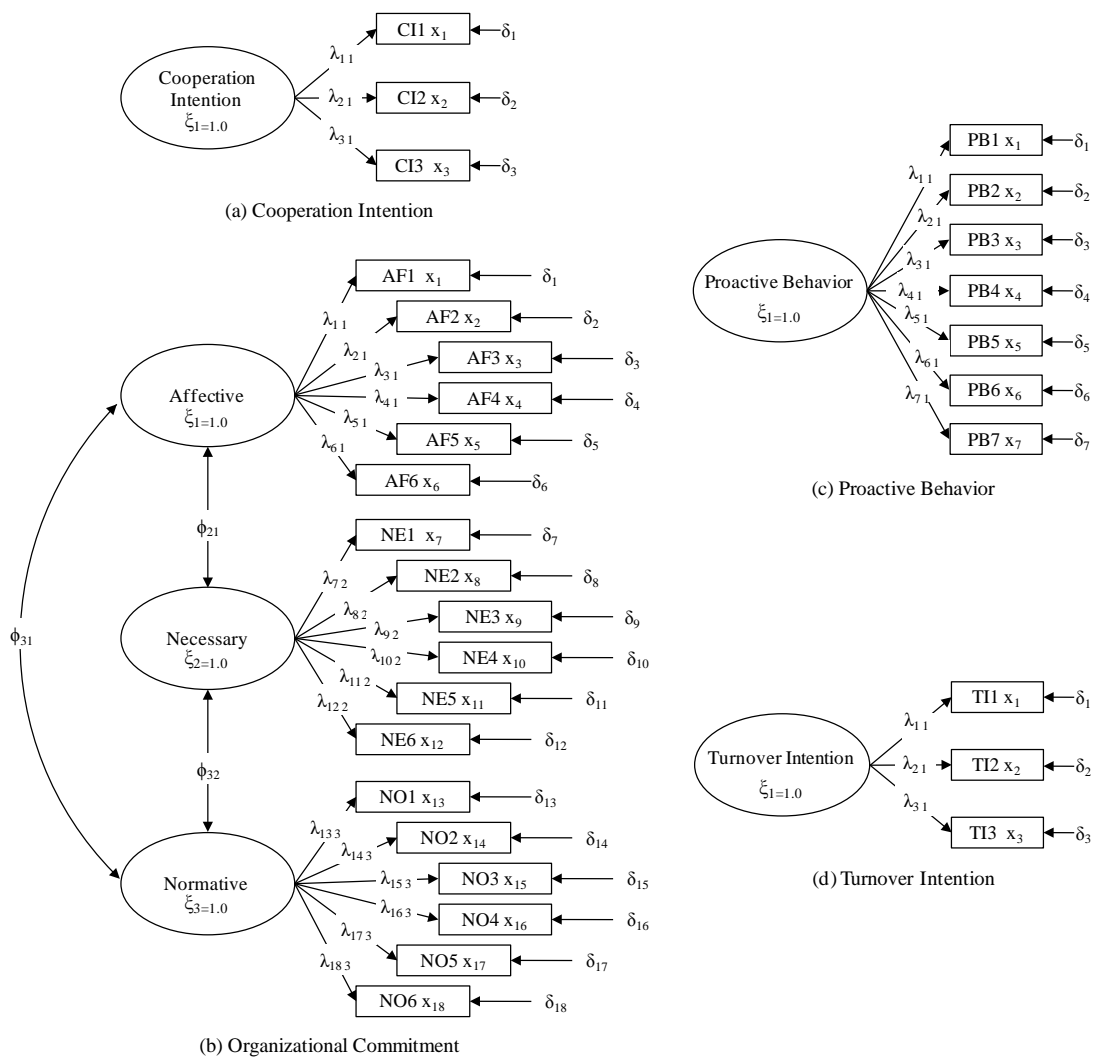


Figure 5-1. Specifications of measurement models for dependent variables with LISREL notations.

Table 20-1

Algebraic Identifications of Measurement Models for Dependent Variables

Model	Non-redundant Elements (a)	Estimable Parameter (b)			df (a-b)
		Factor Loadings (λ)	Factor Covariance (ϕ)	Error Variance (δ)	
Cooperation Intention	6	3	-	3	0
OC*	171	18	3	18	132
Proactive Behavior	28	7	-	7	14
Turnover Intention	6	3	-	3	0

Note. OC = organizational commitment

Model fit assessments. In order to examine the goodness-of-fit of the measurement models for the dependent variables to the given data, separate CFAs were conducted based on the model specifications illustrated in Figure 5-1. Several practical fit indices produced by each CFA were referenced in addition to the chi-square as a statistical fit index and are all listed in Table 20-2. Table 20-2 shows the two models for cooperation intention and turnover intention as a perfect model because both models in which the number of estimable parameters equals the number of data contained in the variance-covariance matrix are just-identified. The model for organization commitment specified with three sub-factors and 18 items produced a statistically significant chi-square [$\chi^2(612) = 574.928, df = 120, p < .01$] that is indicative of the lack of acceptable model fit with the data. Considering the sensitivity that the chi-square has to sample size, it is required to examine the other practical fit indices. The pattern of the practical indices indicates that the model for organizational commitment fits the data (RMSEA = .08, NNFI = .95, CFI = .96, GFI = .91, & SRMR = .06). With regard to the model for proactive behavior, the chi-square was statistically significant indicating a lack of model fit with the data. However, the other practical fit indices were within acceptable ranges so that the model fits the data.

Table 20-2

Model Fit Indices of Measurement Models for Dependent Variables

Models	χ^2	<i>df</i>	RMSEA	NNFI	CFI	GFI	SRMR
Cooperation Intention	-	-	-	-	-	-	-
OC*	693.054**	132	.08	.98	.98	.90	.05
Proactive Behavior	72.430**	14	.08	.98	.99	.97	.03
Turnover Intention	-	-	-	-	-	-	-

Note. * OC = organizational commitment; ** Statistically significant at the level of $p = .05$ (2-tailed)

In summary, based on the results of the practical measurement model evaluations, it could be stated that all the models for the dependent variables have acceptable fit with the research data. The factor loadings, factor covariances, and measurement error variances for each model are illustrated in Figure 5-2.

		CI1 x ₁	.07				
	.96						
Cooperation	.76	CI2 x ₂	.42				
Intention	.71						
		CI3 x ₃	.50			PB1 x ₁	.51
					.70	PB2 x ₂	.59
					.64	PB3 x ₃	.38
(a) Cooperation Intention					.79		
		AF1 x ₁	.36			Proactive Behavior	
	.78	AF2 x ₂	.32		.79	PB4 x ₄	.37
	.83				.77		
	.91	AF3 x ₃	.17		.78	PB5 x ₅	.41
Affective	.90	AF4 x ₄	.20		.73	PB6 x ₆	.40
	.86					PB7 x ₇	.47
	.83	AF5 x ₅	.26				
		AF6 x ₆	.31			(c) Proactive Behavior	
	.65						
		NE1 x ₇	.36				
	.80	NE2 x ₈	.28				
	.85						
.73	.85	NE3 x ₉	.29				
Necessary	.68	NE4 x ₁₀	.53				
	.70						
	.65	NE5 x ₁₁	.50			TI1 x ₁	.35
		NE6 x ₁₂	.57		.81		
	.75					Turnover Intention	
		NO1 x ₁₃	.41		.91	TI2 x ₂	.18
	.77				.54		
	.84	NO2 x ₁₄	.30			TI3 x ₃	.71
	.84	NO3 x ₁₅	.29			(d) Turnover Intention	
Normative	.87	NO4 x ₁₆	.25				
	.78						
	.82	NO5 x ₁₇	.39				
		NO6 x ₁₈	.33				
(b) Organizational Commitment							

Figure 5-2. Factor loadings, factor covariances, and error variances for measurement models.

Causal Relationships of Work Engagement with its Antecedent and Consequent Variables

This research was also intended to address the structural relationship of work engagement with its proposed antecedent and consequent factors. The next several sections discuss results of the analyses of the relationships between (1) work engagement and its antecedent variables, (2) work engagement and its consequence variables, and (3) the antecedent variables and consequent variables in order. Finally, the structural relationships of work engagement with its antecedent and consequent variables are analyzed. Each assessment of the above relationships was administered based on the four-step strategy for SEM: *Model specification, Model identification, Model estimation, and Model evaluation.*

Relationships between Antecedent Variables and Work Engagement

Three types of factors were proposed as antecedent factors of work engagement: (a) job-specific, (b) psychological, and (c) environmental. As shown in Figure 6, the antecedent factors of work engagement are categorized into three conditions related to employees. The conceptual relationships between the antecedent factors and work engagement are revisited in Figure 6.

The antecedent factors belong to job-related, psychological, and environmental conditions. In this study all the factors in the three conditions were specified as independent variables of work engagement. In other words, these factors were proposed to have a significant influence on the development of work engagement. Based on this

hypothesized framework, the relationships of the antecedent factors with work engagement were assessed using multiple regression analysis.

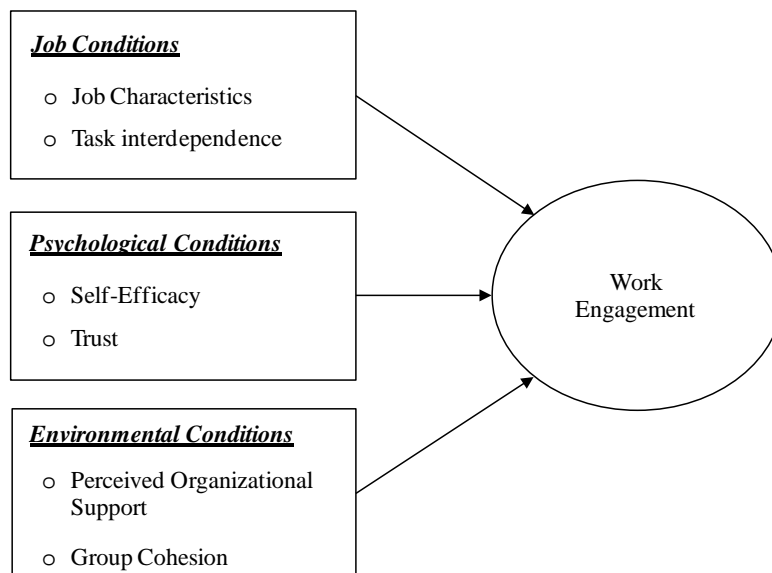


Figure 6. Hypothesized relationships between the antecedent variables and work engagement.

Relationships of job-related variables with work engagement. The relationship between job variables and Work Engagement relates to RQ 2-1:

RQ 2-1: To what extent does each of the following influence the level of work engagement-(1) job characteristics and (2) task interdependence?

In this study, job characteristics (Hackman & Oldham, 1980) and task interdependence (Pearce et al., 1992) were assumed to be job-related factors. In order to examine the extent to which job characteristics and task interdependence independently explains the variance of work engagement, multiple regression analysis was conducted. Results of the multiple regression analysis between the two antecedent variables and work engagement are summarized in Table 21. The variable job characteristics consist of five sub-factors: skill variety, task significance, task identity, autonomy, and feedback

(Hackman et al., 1975) and the variable task interdependence is represented as a one-factor construct. The summarized results presented in Table 21 indicate that the regression model was statistically significant ($F = 102.982, p < .01$) and about 50% of the variance of work engagement was explained by the combination of job characteristics and task interdependence.

Table 21

Multiple Regression Analysis of Job Characteristics and Task Interdependence with Work Engagement

Variables	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Job Characteristics									
Skill Variety	.162	.050	.115	3.248**	.505	.500	102.982**	1.137	1.531
Task Significance	.290	.056	.199	5.165**					1.811
Task Identity	.372	.054	.250	6.891**					1.612
Autonomy	.071	.041	.059	1.725					1.425
Feedback	.426	.043	.330	9.800**					1.388
Task Interdependence	.090	.043	.061	2.117*					1.028

Note. * Statistically significant at the level of $p = .05$ (2-tailed); ** Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this analysis is work engagement

With regard to the effect of each independent variable on the dependent variable, each β value of the independent variables, except autonomy, was statistically significant. This means that the proposed independent variables except *autonomy* have significant impacts on work engagement. *Feedback* showed a relatively higher β value ($\beta = .330, t = 9.800, p < .01$) than the other variables. However, although the β value of task interdependence was statistically significant ($\beta = .061, t = 2.117, p < .05$), the independent effect of task interdependence on work engagement was almost the same as

that of *autonomy* for which β value was not statistically significant ($\beta = .059, t = 1.725, ns$).

In order to identify multicollinearity and auto-correlation issues in the model, two indicators were referenced: variance inflation factor (VIF) value and Durbin-Watson value. VIF is “an indicator of the effect that the other independent variables have on the standard error of a regression coefficient” (Hair et al., 2006, p. 176). Large VIF values means a high degree of multicollinearity exists among the independent variables. According to Hair et al. (2006), when a VIF value is lower than 10, it is acceptable to conclude that there is no multicollinearity among independent variables. Thus, it could be concluded that the model had no multicollinearity issues (VIF values ranges from 1.028 to 1.811). The Durbin-Watson value is indicative of auto-correlation of the residuals. According to Neter, Wasserman, and Kutner (1996), the model had no autocorrelation issues among the residuals (Durbin-Watson value = 1.119).

Relationships of psychological variables with Work Engagement. The relationship between psychological variables and Work Engagement relates to RQ 2-2:

RQ 2-2: To what extent does each of the following influence the level of work engagement-(1)self-efficacy and (2) trust in management / peers?

As previously discussed, self-efficacy and trust in management and peers were assumed to be psychological factors that could influence the degree to which an employee engaged in his/her work. To answer research question three, multiple regression analysis was conducted. Results of the analysis are summarized in Table 22.

The regression model, where *self-efficacy* and *trust* (separated into organizational and interpersonal types) were specified as independent variables and work engagement as a dependent variable, was statistically significant ($F = 210.199, p < .01$).

Table 22

Multiple Regression Analysis of Self-Efficacy and Trust with Work Engagement

Variables	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Self Efficacy	1.015	.061	.518	16.666*	.509	.507	210.199*	1.172	1.198
Trust									
Management	.347	.050	.218	6.964*					1.210
Peers	.300	.055	.175	5.415*					1.301

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this analysis is Work engagement

With regard to the size of effect, about 51% of work engagement was explained by the independent variables. Each β value of the independent variables was statistically significant at the significance level of .01. Thus, it could be concluded that all the proposed independent variables had impacts on work engagement. Notably, *self-efficacy* showed a large impact on work engagement ($\beta = .518, t = 16.666, p < .01$). In regards to multicollinearity and autocorrelation issues, VIF and Durbin-Watson values were also tested. VIF values of the independent variables ranged from 1.198 to 1.301, which means that there are no multicollinearity issues in the model. The Durbin-Watson value was 1.172, which indicates that there is no autocorrelation among the residuals of the variables.

Relationship of environmental variables with Work Engagement. The relationship between environmental factors and Work Engagement relates to RQ 2-3:

RQ 2-3: To what extent does each of the following influence the level of work engagement-(1) perceived organizational support and (2) group cohesion?

In this study perceived organizational support and group cohesiveness were considered to be environmental factors that could influence the level of work engagement. In order to address the relationships between the independent variables and work engagement, multiple regression analysis was conducted. The summarized results of the analysis are presented in Table 23.

Table 23 shows that the regression model was statistically significant ($F = 176.210, p < .01$). In terms of effect size, about 37% of the variance of work engagement was predicted by the two independent variables. VIF values and Durbin-Watson value indicates that there are no issues among the independent variables in terms of multicollinearity (VIFs = 1.215 and 1.215, respectively) and autocorrelation (Durbin-Watson value = 1.999). Each β value of the two independent variables was .413 ($t = 11.623, p < .01$) and .392 ($t = 8.481, p < .01$). This means that both of the variables had a statistically significant effect on work engagement.

Table 23

Multiple Regression Analysis of Perceived Organizational Support and Group Cohesion with Work Engagement

Variables	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted</i> R^2	F	Durbin- Watson	VIF
POS	.668	.057	.413	11.623*	.367	.364	176.210*	1.999	1.215
Group Cohesion	.435	.051	.302	8.481*					1.215

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this analysis is Work engagement.

Relationships between Work Engagement and Consequence Variables

As illustrated in Chapter 1, four factors were assumed to be consequence variables of work engagement based on the previous research: *cooperation intention*, *organizational commitment*, *proactive behavior*, and *turnover intention*. The conceptual framework for the relationships between work engagement and the four consequence variables is revisited in Figure 7.

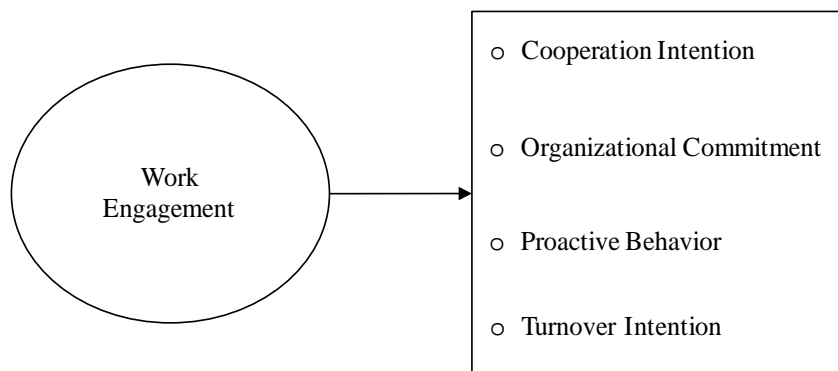


Figure 7. Hypothesized relationships between work engagement and the consequence variables.

In order to assess the relationships in more detail, work engagement was divided into three sub-factors: *vigor*, *dedication*, and *absorption* (Schaufeli & Bakker, 2004), and organizational commitment was divided into three sub-factors: *affective*, *necessary*, and *normative commitments* (Meyer & Allen, 1991). The research question about the relationships between work engagement and its consequence variables is as below:

RQ 3: To what extent does work engagement influence each of the following: (1) cooperation intention, (2) proactive behavior, (3) organizational commitment, and (4) turnover intention?

Relationship of Work Engagement with cooperation intention. To assess the relationships of work engagement with cooperation intention, multiple regression analysis was conducted with a model where the three sub-factors of work engagement were specified as independent variables and cooperation intention as a dependent variable. Summarized results of the analysis are presented in Table 24.

Table 24

Multiple Regression Analysis of Work Engagement with Cooperation Intention

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Vigor	.094	.046	.151	2.035*	.214	.210	55.155**	1.768	1.762
Dedication	.034	.046	.058	0.735					1.576
Absorption	.173	.047	.276	3.704**					1.834

Note. * Statistically significant at the level of $p = .05$ (2-tailed); ** Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable for this analysis is Cooperation intention.

As shown in Table 24, the multiple regression model was found to be statistically significant ($F = 55.155, p < .01$). Thus, the relevant statistics results from the analysis could be viewed as valid. The multiple regression model had no multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation issues (Durbin-Watson value = 1.768). In regards to the independent effect, vigor ($\beta = .151, t = 2.035, p < .05$) and absorption ($\beta = .276, t = 3.704, p < .01$) showed statistically significant β values, and dedication was found to be statistically non-significant ($\beta = .058, t = .735, ns$).

Relationships of Work Engagement with organizational commitment. In order to address the impact of work engagement on organizational commitment, four multiple regression models were designed. The equations of the models are written as below:

Model 1: Organizational commitment = $a + b_1(\text{vigor}) + b_2(\text{dedication}) + b_3(\text{absorption}) + e$
 Model 2: Affective commitment = $a + b_1(\text{vigor}) + b_2(\text{dedication}) + b_3(\text{absorption}) + e$
 Model 3: Necessary commitment = $a + b_1(\text{vigor}) + b_2(\text{dedication}) + b_3(\text{absorption}) + e$
 Model 4: Normative commitment = $a + b_1(\text{vigor}) + b_2(\text{dedication}) + b_3(\text{absorption}) + e$

Where:

a = constant

b = the coefficient of independent variables

e = the error term

Model 1 shows where the dependent variable is specified with organizational commitment. Results of a multiple regression analysis for Model 1 are summarized in Table 25-1.

Table 25-1

Multiple Regression Analysis of Work Engagement with Organizational Commitment

Variable	b	$SE\ b$	β	t	R^2	Adjusted R^2	F	Durbin-Watson	VIF
Vigor	.215	.027	.333	7.907*	.747	.746	599.352*	1.580	1.762
Dedication	.207	.027	.345	7.680*					1.576
Absorption	.153	.028	.234	5.547*					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Organizational commitment.

The multiple regression model was statistically significant ($F = 599.352, p < .01$), and had no issues related to multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation (Durbin-Watson value = 1.580). About 75% of the variance of organizational commitment was explained by the three sub-factors of work engagement. In terms of the independent effect, all the sub-factors of work engagement showed statistically significant β values on the basis of t -test. Absorption ($\beta = .234, t = 5.547, p < .01$) was relatively lower than vigor ($\beta = .333, t = 7.907, p < .01$) and dedication ($\beta = .345, t = 7.680, p < .01$) in terms of the independent effect.

The next three models were examined for each sub-factor of organizational commitment proposed by Meyer and Allen (1991). Model 2 is where affective commitment, one of the sub-factors of organizational commitment, is specified as a dependent variable. Summarized results of a multiple regression analysis for Model 2 are presented in Table 25-2.

Table 25-2

Multiple Regression Analysis of Work Engagement with Affective Commitment

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Vigor	.128	.043	.168	2.968*	.541	.539	239.046*	1.801	1.762
Dedication	.285	.043	.406	6.712*					1.576
Absorption	.151	.043	.198	3.479*					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Affective commitment.

The multiple regression analysis revealed that Model 2 was statistically significant ($F = 239.046$, $p < .01$) and had no multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation (Durbin-Watson value = 1.801) issues. All the sub-factors of work engagement accounted for about 54% of the variance of affective commitment. In terms of the independent impact, all of the independent variables showed statistically significant impacts on affective commitment, and dedication ($\beta = .406$, $t = 6.712$, $p < .01$) showed a greater impact on affective commitment than vigor ($\beta = .168$, $t = 2.968$, $p < .01$) and absorption ($\beta = .198$, $t = 3.479$, $p < .01$).

Results of Model 3 are summarized in Table 25-3. In Model 3, necessary commitment was specified as a dependent variable. According to the results in Table 25-3, Model 3 was statistically significant ($F = 210.818$, $p < .01$) and showed no evidence of multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation (Durbin-

Watson value = 1.669). As to the impacts of work engagement on necessary commitment, 51% of the variance of necessary commitment was explained by the three sub-factors of work engagement. Each β value of the independent variables was statistically significant, and vigor ($\beta = .332$, $t = 5.657$, $p < .01$) had a greater impact on necessary commitment than dedication ($\beta = .195$, $t = 3.120$, $p < .01$) and absorption ($\beta = .227$, $t = 3.852$, $p < .01$).

Table 25-3

Multiple Regression Analysis of Work Engagement with Necessary Commitment

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Vigor	.219	.039	.332	5.657*	.510	.507	210.818*	1.669	1.762
Dedication	.119	.038	.195	3.120*					1.576
Absorption	.151	.039	.227	3.852*					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Necessary commitment.

Finally, multiple regression analysis for Model 4 was conducted, and the results of the analysis were presented in Table 25-4. As shown in Table 25-4, Model 4 was statistically significant ($F = 422.688$, $p < .01$) and had no multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation (Durbin-Watson value = 1.564) issues. With regard to the impacts of work engagement on normative commitment, about 68% of the variance of normative commitment was explained by the three sub-factors of work engagement. The independent impact of each of the independent variables was statistically significant on the basis of the *t*-test, and vigor ($\beta = .378$, $t = 7.918$, $p < .01$) showed a relatively greater impact on necessary commitment than dedication ($\beta = .293$, $t = 5.771$, $p < .01$) and absorption ($\beta = .196$, $t = 4.088$, $p < .01$).

Table 25-4

Multiple Regression Analysis of Work Engagement with Normative Commitment

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Vigor	.300	.038	.378	7.918*	.676	.674	422.688*	1.564	1.762
Dedication	.216	.037	.293	5.771*					1.576
Absorption	.156	.038	.196	4.088*					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Normative commitment.

In summary, all the sub-factors of work engagement had statistically significant impacts on organizational commitment over the four regression models. The four separate multiple regression analyses revealed that (a) vigor and dedication had greater impacts on organizational commitment as a whole construct than absorption; (b) dedication had a greater impact on affective commitment than vigor and absorption; (c) vigor had a greater impact on necessary commitment than dedication and absorption; and (d) vigor had a greater impact on normative commitment than dedication and absorption. Absorption showed smaller impacts on organizational commitment in all four models.

Relationships of Work Engagement with proactive behavior. In order to address the relationships between work engagement and proactive work behavior, a multiple regression model was used. The three sub-factors of work engagement were designated as independent variables and proactive work behavior was designated as a dependent variable. Results of the regression analysis for the model are summarized in Table 26. The regression analysis showed that the model was statistically significant ($F = 136.242, p < .01$) and that the three independent variables accounted for about 43% of the variance of proactive work behavior. In order to identify if there were any multicollinearity and autocorrelation issues in the model, VIF and Durbin-Watson values

were also tested. According to these values, the model was not found to have any multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation issues (Durbin-Watson value = 1.370). With regard to the independent effect of the independent variables, all the β values were statistically significant. *Vigor* showed a relatively higher effect ($\beta = .304$, $t = 4.691$, $p < .01$) than *dedication* ($\beta = .199$, $t = 2.877$, $p < .01$) and *absorption* ($\beta = .166$, $t = 2.552$, $p < .01$).

Table 26

Multiple Regression Analysis of Work Engagement with Proactive Behavior

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	Adjusted R^2	F	Durbin-Watson	VIF
Vigor	.173	.037	.304	4.691*	.402	.399	136.242*	1.370	1.762
Dedication	.105	.036	.199	2.877*					1.576
Absorption	.095	.037	.166	2.552*					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Proactive behavior.

Relationships of Work Engagement with turnover intention. In order to address the impacts of work engagement on turnover intention, multiple regression analysis was conducted with a model in which the sub-factors of work engagement were designated as independent variables and turnover intention as a dependent variable. Results of the analysis are summarized in Table 27. According to the results of the multiple regression model, the model was statistically significant ($F = 86.206$, $p < .01$) and had no multicollinearity (VIF values ranging from 1.576 to 1.834) and autocorrelation (Durbin-Watson value = 1.675) issues. Regarding the independent effect, only dedication was statistically significant and had a negative impact on turnover intention ($\beta = -.394$, $t = -5.271$, $p < .01$) and the other two factors had no statistically significant impact on Turnover intention.

Table 27

Multiple Regression Analysis of Work Engagement with Turnover Intention

Variable	<i>b</i>	<i>SE b</i>	β	<i>t</i>	R^2	<i>Adjusted R²</i>	F	Durbin-Watson	VIF
Vigor	-.094	.059	-.112	-1.601	.298	.295	86.206*	1.675	1.762
Dedication	-.305	.058	-.394	-5.271*					1.576
Absorption	-.050	.059	-.060	-.850					1.834

Note. * Statistically significant at the level of $p = .01$ (2-tailed); The dependent variable in this model is Turnover Intention.

Structural Relationships of Work Engagement

with the Proposed Antecedent and Consequence Factors

The final research question is about the structural relationships of work engagement with its antecedent and consequence factors. Specifically, the mediating roles of work engagement were examined.

RQ 4. To what extent does work engagement mediate the effects of the antecedent variables on the consequent variable?

In order to answer the research question SEM analyses were examined based on the four-step strategy previously discussed: *specification, identification, estimation, and evaluation*. Before assessing the relationships of work engagement with its antecedent and consequence factors, the items used to measure the proposed latent variables were parceled. Although item parceling is still controversial, there are some compelling reasons for its use in this research. The research framework includes a number of latent variables and some were measured with a number of items. According to Williams and Holahan (1994), an increase in the ratio of indicator to factor leads to the decrease in the value of model fit indices. This may be because the larger number of indicators is

indicative of the greater potential for shared secondary influences and dual loadings among the indicators not specified in the model (Hall, Snell, & Foust, 1999). MacCallum et al. (1999) also noted that item parceling leads to reductions in chances for correlated residuals and sampling error. For these reasons, the items of work engagement and organizational commitment, which are multidimensional in nature, were parceled so that each parcel represents sub-constructs (Rogers & Schmitt, 2004); and each item of the other variables were randomly assigned to one of three parcels (Little, Cunningham, Shahar, & Widaman, 2002). A total of 32 parcels were prepared for SEM analysis. The research framework also consists of a number of latent variables. Thus, separate SEM models were designed for each antecedent variable of work engagement.

Model Specifications

A total of six structural models were designed for each independent variable. As shown in Figure 8, each of the antecedent variables of work engagement is specified as an exogenous latent variable, and all the other variables, including work engagement, are specified as endogenous variables. Job characteristics is represented by five indicators, and all the other variables are represented by three indicators. The factor loading of one of the indicators for each latent variable was fixed at 1.0.

Model Identifications

The algebraic identification technique was employed for the identification issue of the structural models. For Model 1, there are 465 non-redundant elements in the variance-covariance matrix. The specification for Model 1 requires an estimate of a total of 89

parameters [20 factor loadings ($\lambda_{21} - \lambda_{310}$), 10 factor covariances ($\phi_{21} - \phi_{54}$), 29 path coefficients ($\gamma_{21} - \gamma_{101}$, $\beta_{65} - \beta_{105}$), 10 latent variable variances ($\xi_1 - \xi_5$, $\eta_1 - \eta_5$), and 30 measurement error variances ($\delta_1 - \delta_{30}$)]. Thus, the algebraic identification suggests that Model 1, as a structural model, is over-identified with 366 degrees of freedom.

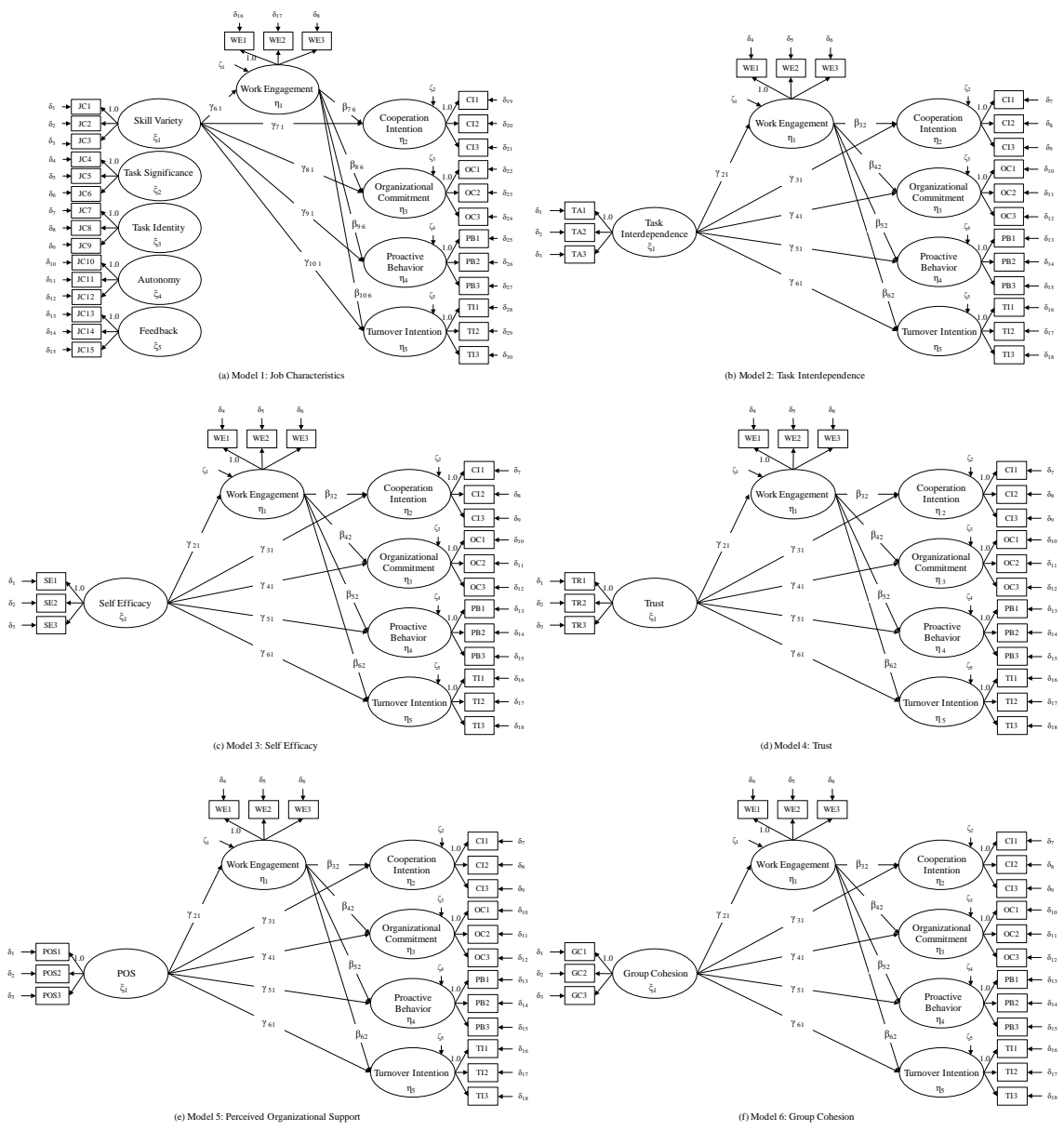


Figure 8. Model specifications with LISREL notations.

As shown in Figure 8, the other models (Model 2 ~ Model 6) have the same pattern in their specifications. The independent variable for each model is represented with the same number of indicators, and the specified structural relationships among the latent variables are the same across the models. In Model 1, the paths of all the sub-factors of job characteristics to the other variables and the paths among the sub-factors are actually specified, but some of them are omitted due to the visual complexity of model illustration. Each of the five models specified has a total of 45 estimable parameters including 12 factor loadings ($\lambda_{21} - \lambda_{36}$), nine path coefficients ($\gamma_{21} - \gamma_{61}, \beta_{32} - \beta_{62}$), six latent variable variances ($\xi_1, \eta_1 - \eta_5$), and 18 measurement error variances ($\delta_1 - \delta_{18}$). Given that there are 171 non-redundant elements in the variance-covariance matrix, the five models are algebraically over-identified with 136 degrees of freedom. A summary of the algebraic identifications for the structural models are presented in Table 28.

Table 28

Algebraic Identification of Specified Structural Models

Model	Non-redundant Element (a)	Estimable Parameter (b)					df (a-b)
		Factor Loading (λ)	Factor Covariance (ϕ)	Path Coefficient (γ & β)	Latent Variance (ξ & η)	Error Variance (δ)	
Model 1	465	20	10	29	10	30	366
Model 2 ~ 6	171	12	-	9	6	18	126

Model Estimations

All the indicators for each latent variable in the models were measured in the form of continuous scale. Parameters for the structural model specifications illustrated in

Figure 8 were subject to estimations based on iterative, maximum likelihood (ML) estimation method. ML estimation, as an estimation technique commonly employed in SEM, is a procedure in which parameters are iteratively estimated to minimize a specified fit function (Hair et al., 2006).

Model Evaluations

In regards to model fit with the data the six models, as illustrated in Figure 8, were found to have a similar pattern over referenced statistical and practical model fit indices. The model fit indices for the six models are shown in Table 29. For all the models in question, the values of chi-square are statistically significant which is indicative of a lack of acceptable model fit with the data. The statistical significance of this index could be a result of the large sample size. For this reason, it is recommended to consult other practical, not statistical, indices. These indices could provide more reliable information about the model fit. Selected practical indices for Model 1 showed that the model acceptably fit the data as presented in Table 29.

Table 29

Fit Indices for Structural Latent Models

Model	χ^2	<i>df</i>	RMSEA	NNFI	CFI	GFI	SRMR
Model 1 (ILV: Job Characteristics)	1196.560**	366	.06	.98	.98	.89	.05
Model 2 (ILV: Task Interdependence)	628.307**	126	.08	.97	.97	.90	.06
Model 3 (ILV: Self Efficacy)	639.495**	126	.08	.98	.98	.90	.07
Model 4 (ILV: Trust)	671.350**	126	.08	.97	.98	.89	.06
Model 5 (ILV: POS*)	551.420**	126	.07	.98	.98	.91	.06
Model 6 (ILV: Group Cohesion)	591.046**	126	.08	.98	.98	.90	.05

Note. * POS = Perceived organizational support; ** Statistically significant at the level of $p = .01$ (2-tailed)

Interpretations

SEM analyses for the six models produced a series of path coefficients among the latent variables indicating the effects among the latent variables specified in the models. In this research, the analysis of total, indirect, and residual direct effects was performed to address two points of interest: (a) the structural relationship of work engagement with its antecedent and consequent factors, and (b) the mediative role of work engagement in the effect of the antecedent factors on the consequent factors. As illustrated in Figure 9, the total effect is a sum of the indirect effect and the residual direct effect. The indirect effect, also called the mediation effect, means an effect mediated by work engagement, and the residual direct effect is an effect excluding the mediation effect of work engagement.

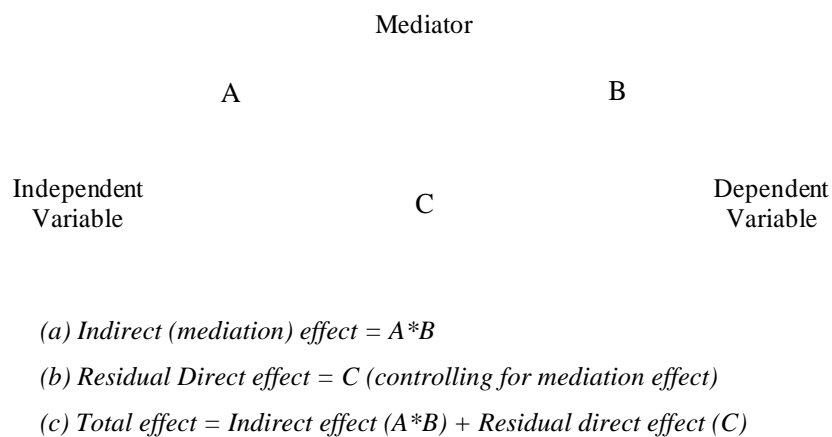


Figure 9. Illustration for the relationship among total, indirect, and direct effects.

A study by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) showed that the best way to identify the significance of mediation effect is to examine two path coefficients (A and B shown in Figure 9).

Model 1. In Model 1 the five sub-factors of job characteristics are independent variables, with work engagement as a mediator, and the four consequent variables - *cooperation intention, organizational commitment, proactive behavior, and turnover intention* - as dependent variables. Path coefficients indicating total, indirect, and residual direct effects for Model 1 are presented in Table 30-1. All the significance tests of effect were subject to the confidence level of .05. In regards to skill variety, in spite of indications that the associations with the dependent variables are partly mediated by work engagement, the results did not show any significant total impacts on the dependent variables. The total impacts on organizational commitment ($\gamma_{8\ 2} = 0.310$, $t = 3.885$), proactive behavior ($\gamma_{9\ 2} = 0.120$, $t = 2.006$), and turnover intention ($\gamma_{10\ 2} = -0.431$, $t = -3.469$) were statistically significant. However, only the impact on organizational commitment ($\gamma_{6\ 2} * \beta_{8\ 6} = 0.133$, $t = 2.402$) was partly mediated by work engagement. All the total impacts of task identity on the dependent variables were statistically significant, and partly mediated by work engagement. Interestingly, even though the unique impacts on proactive behavior (path coefficient = 0.043, $t = 0.770$) and turnover intention (path coefficient = -0.115, $t = -0.952$) were non-significant, the mediation effects of work engagement resulted in significant relationships between task identity and the two dependent variables. This means that the relationships of task identity with proactive behavior and turnover intention become non-significant when work engagement is excluded. On the other hand, the results suggested that work engagement has no mediative effects on the influential paths of autonomy to the dependent variables. Finally and most interestingly, work engagement was revealed to play a key role as a mediator in relating feedback with the dependent variables.

Table 30-1

Total, Indirect, and Residual Direct Effects for Model 1

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SV	0.133* (0.059)	-0.002 (0.048)	0.017 (0.043)	0.029 (0.032)	0.019 (0.067)
TS	0.207 (0.109)	0.142 (0.088)	0.310* (0.080)	0.120* (0.060)	-0.431* (0.124)
TID	0.565* (0.110)	0.401* (0.089)	0.178* (0.076)	0.191* (0.059)	-0.329* (0.120)
AU	0.047 (0.045)	0.061 (0.037)	0.144* (0.033)	0.067* (0.025)	-0.127* (0.051)
FB	0.390* (0.046)	-0.007 (0.036)	0.185* (0.033)	0.072* (0.025)	-0.062* (0.051)
WE	--	0.183* (0.041)	0.641* (0.032)	0.263* (0.027)	-0.380* (0.056)
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SV	--	0.024* (0.012)	0.085* (0.038)	0.035* (0.016)	-0.051* (0.024)
TS	--	0.038 (0.022)	0.133* (0.069)	0.054 (0.029)	-0.079 (0.042)
TID	--	0.103* (0.029)	0.362* (0.075)	0.148* (0.033)	-0.214* (0.052)
AU	--	0.009 (0.009)	0.030 (0.029)	0.012 (0.012)	-0.018 (0.017)
FB	--	0.071* (0.018)	0.250* (0.032)	0.102* (0.016)	-0.148* (0.028)
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SV	--	-0.027 (0.047)	-0.069 (0.028)	-0.006 (0.029)	0.070 (0.064)
TS	--	0.104 (0.086)	0.177* (0.053)	0.066 (0.054)	-0.352* (0.117)
TID	--	0.298* (0.090)	-0.184* (0.056)	0.043 (0.056)	-0.115 (0.121)
AU	--	0.053 (0.035)	0.114* (0.022)	0.055* (0.022)	-0.109* (0.048)
FB	--	-0.078 (0.039)	-0.065 (0.024)	-0.030 (0.025)	0.086 (0.053)

Note. * Statistically significant at the level of $p = .05$ (2-tailed); In this display, t-values are not presented; ST = skill variety, TS = task significance, TID = task indentity, AU = autonomy, FB = feedback, WE = work engagment, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

Controlling for work engagement, feedback had no significant unique impacts on all the dependent variables. However, work engagement significantly mediated the relationships of feedback with cooperation intention ($\gamma_{6.5} * \beta_{7.6} = 0.071$, $t = 3.968$), organizational commitment ($\gamma_{6.5} * \beta_{8.6} = 0.250$, $t = 7.759$), proactive behavior ($\gamma_{6.5} * \beta_{9.6} = 0.102$, $t = 6.337$), and turnover intention ($\gamma_{6.5} * \beta_{10.6} = -0.148$, $t = -5.250$). The total impacts of feedback, in turn, became statistically significant, contrasting the non-significant unique impacts. In the model, a total of 29 standardized path coefficients were produced through a SEM analysis. The standardized path coefficients between the variables in Model 1 are illustrated in Figure 10-1.

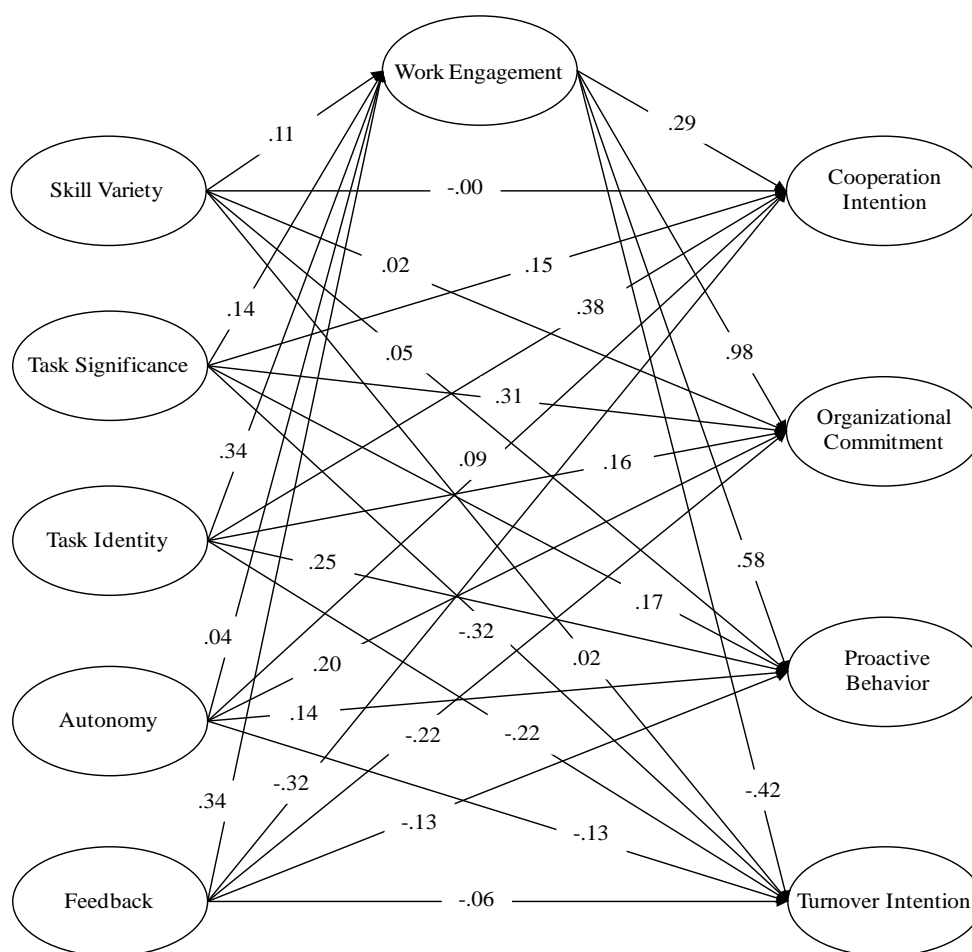


Figure 10-1. Standardized path coefficients for Model 1.

Model 2. In Model 2 task interdependence is an independent latent variable, and it was found that work engagement connects task interdependence with the dependent latent variables. However, as Table 30-2 indicates, task interdependence showed trivial total effects on the dependent variables, and the direct effect of task interdependence on cooperation intention was not statistically significant (path coefficient = 0.024, $t = 0.634$).

Table 30-2

Total, Indirect, and Residual Direct Effects for Model 2

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TA	0.215	0.096	0.096	0.007	-0.223
	(0.063)	(0.042)	(0.043)	(0.029)	(0.060)
	3.399	2.282	2.238	0.249	-3.702
WE	--	0.335	0.639	0.328	-0.587
		(0.026)	(0.025)	(0.020)	(0.036)
		12.826	25.090	16.472	16.099
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TA	--	0.072	0.137	0.071	-0.126
		(0.022)	(0.041)	(0.021)	(0.038)
		3.297	3.373	3.326	-3.344
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TA	--	0.024	-0.041	-0.063	-0.097
		(0.037)	(0.021)	(0.023)	(0.049)
		0.634	-1.988	-2.787	-1.961

Note. TA = task interdependence, WE = work engagement, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

In terms of mediation effect, the effects of task interdependence on organizational commitment, proactive behavior, and turnover intention were significantly, but trivially, mediated by work engagement ($\gamma_{21} * \beta_{42} = 0.137$, $t = 3.373$; $\gamma_{21} * \beta_{52} = 0.071$, $t = 3.326$; $\gamma_{21} * \beta_{62} = -0.126$, $t = -3.344$).

$\gamma_{1*}\beta_{62} = -0.126$, $t = -3.344$, respectively). Work engagement showed compressor effects on mediating the effect of task interdependence on organizational commitment and proactive behavior. This may be because the direct effects of task interdependence on these two dependent variables are significantly, but trivially, negative (path coefficient = -0.041 , $t = -1.988$; -0.063 , $t = 2.787$, respectively) and work engagement has relatively strong relationships with the two dependent variables ($\beta_{42} = 0.639$, $t = 25.090$; $\beta_{52} = 0.328$, $t = 16.472$, respectively). In summary, the effects of task interdependence on organizational commitment, proactive behavior, and turnover intention were significantly, but trivially, mediated by work engagement. The standardized path coefficients between the variables in Model 2 are presented with the path diagram in Figure 10-2.

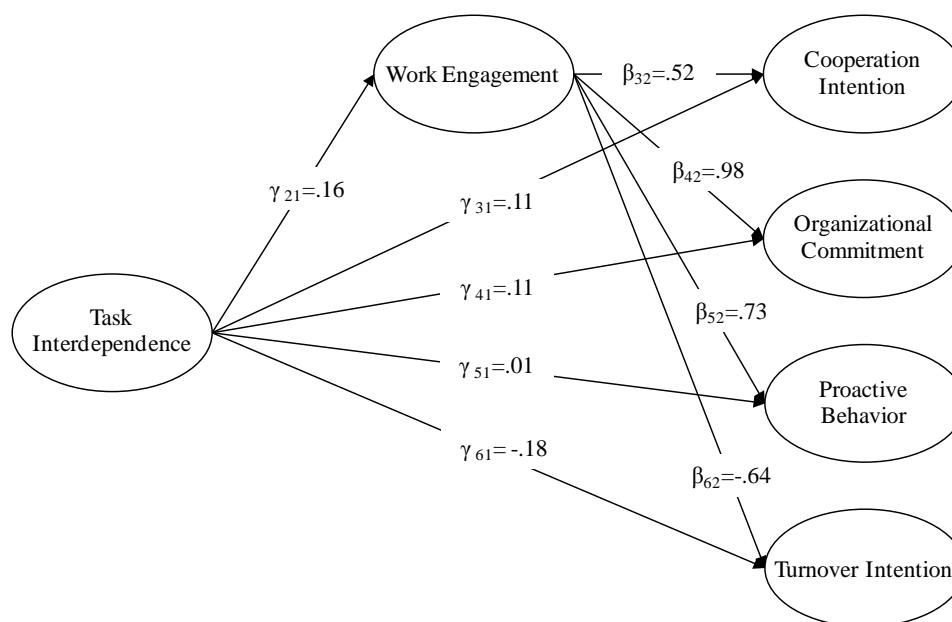


Figure 10-2. Standardized path coefficients for Model 2.

Model 3. Self-efficacy was an independent latent variable in Model 3. Path coefficients representing effects of all the variables in the model are presented in Table 30-3. Only the direct effect of self-efficacy on organizational commitment was statistically non-significant. This means that self-efficacy is structurally related to cooperation intention, proactive behavior, and turnover intention through work engagement.

Table 30-3

Total, Indirect, and Residual Direct Effects for Model 3

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SE	1.319 (0.073)	0.519 (0.052)	0.824 (0.055)	0.524 (0.039)	-0.673 (0.076)
	17.961	9.914	15.112	13.413	-8.797
WE	--	0.278 (0.038)	0.646 (0.030)	0.247 (0.024)	-0.681 (0.054)
		7.274	21.259	10.132	-12.715
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SE	--	0.367 (0.054)	0.852 (0.060)	0.326 (0.036)	-0.898 (0.085)
		6.847	14.253	9.108	-10.524
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
SE	--	0.151 (0.073)	-0.028 (0.041)	0.198 (0.044)	0.225 (0.098)
		2.079	-0.685	4.513	2.311

Note. SE = self-efficacy, WE = work engagement, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

Given the indirect effects, work engagement mediated the effects of self-efficacy on cooperation intention ($\gamma_{21} * \beta_{32} = 0.367$, $t = 6.847$) and proactive behavior ($\gamma_{21} * \beta_{52} =$

0.326, $t = 9.108$) in the positive direction and turnover intention ($\gamma_{21} * \beta_{62} = -0.898$, $t = -10.524$) in the negative direction. Although self-efficacy directly influenced turnover intention in the positive direction (path coefficient = 0.225, $t = 2.311$), its indirect, mediated effect was negative ($\beta_{62} = -0.681$, $t = -12.715$).

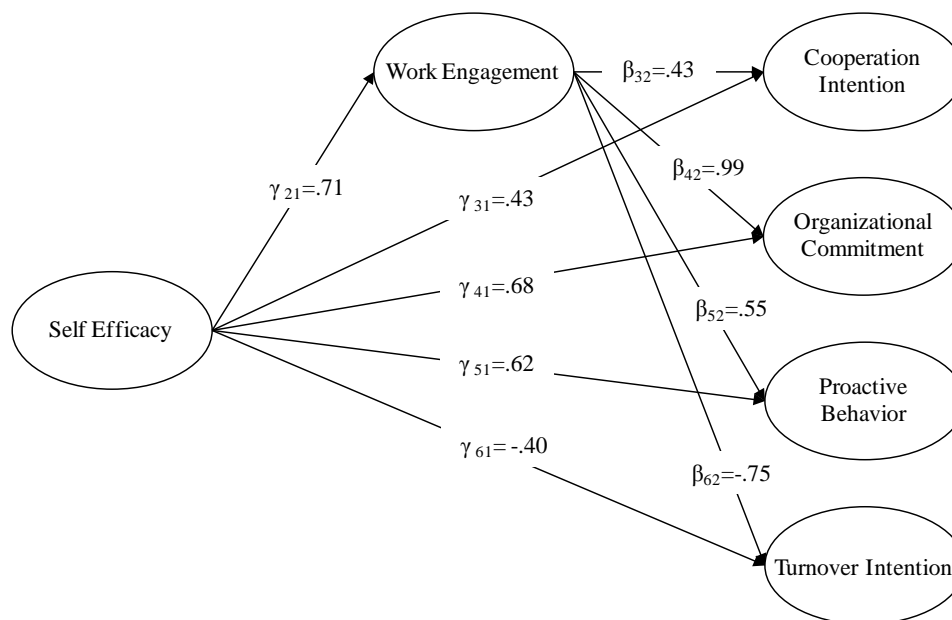


Figure 10-3. Standardized path coefficients for Model 3.

MacKinnon et al. (1991) suggested the following formula to identify how much of the total effect is mediated:

$$\text{Percent of effect mediated} = \frac{\text{Indirect effect}}{\text{Indirect effect} + \text{Residual direct effect}}$$

This formula can be useful when the indirect effect and residual direct effect have the same sign. Applying this formula, 71 % and 62 % of the total effects on cooperation intention and proactive behavior, respectively, were mediated by work engagement. It is interesting to note that the total impact of self-efficacy on organizational commitment was substantial and significant, while the unique impact was non-significant. Furthermore,

the difference between the total and mediated effects was near zero. This indicates that the impact of efficacy on organizational commitment is fully mediated by work engagement. The standardized path coefficients between the variables in Model 3 are presented with the path diagram in Figure 10-3.

Model 4. Model 4 was designed to examine the structural relationship of trust with the dependent latent variable through work engagement. Total, indirect, and residual direct effects produced by a SEM analysis for Model 4 are presented in Table 30-4.

Table 30-4

Total, Indirect, and Residual Direct Effects for Model 4

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TR	1.340	0.812	0.978	0.493	-1.161
	(0.099)	(0.065)	(0.072)	(0.048)	(0.094)
	13.487	12.563	13.603	10.298	-12.315
WE	--	0.155	0.572	0.287	-0.398
		(0.031)	(0.026)	(0.023)	(0.043)
		4.981	22.042	12.631	-9.270
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TR	--	0.208	0.766	0.384	-0.533
		(0.044)	(0.064)	(0.041)	(0.068)
		4.740	11.927	9.433	-7.822
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
TR	--	0.604	0.212	0.109	-0.629
		(0.073)	(0.041)	(0.044)	(0.096)
		8.245	5.196	2.485	-6.522

Note. TR = trust, WE = work engagement, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

Table 30-4 shows that all the effects produced were statistically significant. This means that the specified structural relationship among the variables is valid. In other words, under the mediation of work engagement, trust significantly influences cooperation intention ($\gamma_{21} * \beta_{32} = 0.208$, $t = 4.740$), organizational commitment ($\gamma_{21} * \beta_{42} = 0.766$, $t = 11.927$), proactive behavior ($\gamma_{21} * \beta_{52} = 0.384$, $t = 9.433$) and turnover intention ($\gamma_{21} * \beta_{62} = -0.533$, $t = -7.822$).

In terms of the magnitude of mediation effect, work engagement substantially mediated the effects of trust on organizational commitment (78%) and proactive behavior (78%) and moderately mediated the effects on cooperation intention (26%) and turnover intention (46%). The standardized path coefficients between the variables in Model 4 are presented with the path diagram in Figure 10-4.

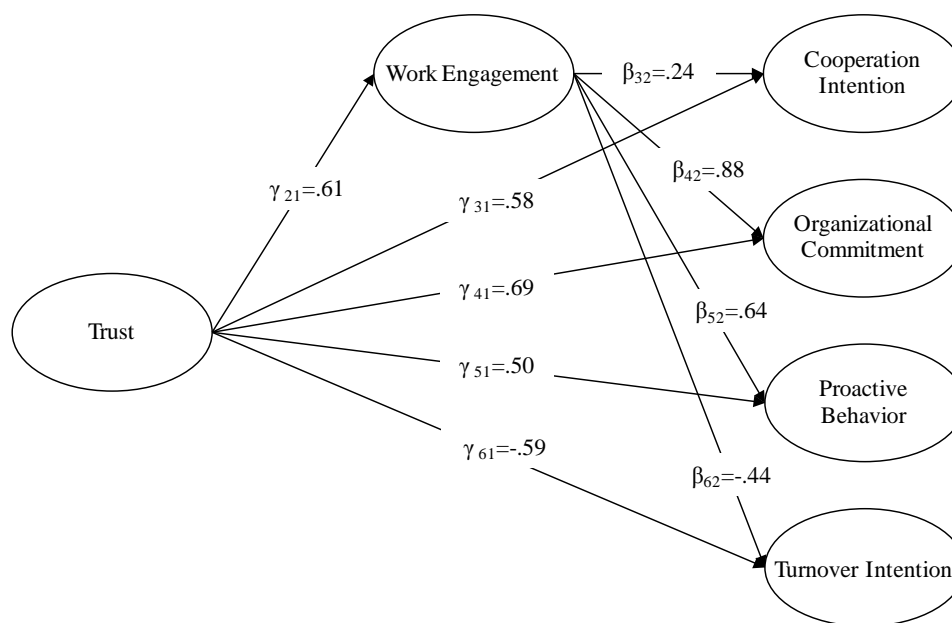


Figure 10-4. Standardized path coefficients for Model 4.

Model 5. In Model 5 perceived organizational support (POS) was an independent latent variable and the other variables are the same as in the previous models. A SEM

analysis for Model 5 produced path coefficients indicative of the effects of the independent and mediation variables. All of the coefficients in Table 30-5 were statistically significant, and the initially hypothesized relationship among the variables was valid.

Table 30-5

Total, Indirect, and Residual Direct Effects for Model 5

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
POS	0.998 (0.067)	0.498 (0.047)	0.796 (0.048)	0.438 (0.035)	-1.056 (0.064)
	14.781	10.696	16.469	12.585	-16.464
WE	--	0.232 (0.032)	0.542 (0.024)	0.247 (0.021)	-0.310 (0.040)
		7.249	22.190	11.614	-7.748
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
POS	--	0.232 (0.035)	0.542 (0.042)	0.247 (0.026)	-0.309 (0.043)
		6.641	12.892	9.427	-7.131
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
POS	--	0.267 (0.055)	0.254 (0.031)	0.190 (0.034)	-0.747 (0.072)
		4.804	8.218	5.606	-10.435

Note. POS = perceived organizational support, WE = work engagement, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

According to the coefficients in Table 30-5, under the mediation of work engagement, POS has a statistically significant impact on cooperation intention ($\gamma_{21}*\beta_{32} = 0.232$, $t = 6.641$), organizational commitment ($\gamma_{21}*\beta_{42} = 0.542$, $t = 12.892$), proactive behavior ($\gamma_{21}*\beta_{52} = 0.247$, $t = 9.427$), and turnover intention ($\gamma_{21}*\beta_{62} = -0.309$, $t = -$

7.131). Work engagement significantly mediated the effects of POS on cooperation intention (47%), organizational commitment (68%), proactive behavior (56%), and turnover intention (29%). The effect of POS on turnover intention was relatively less mediated than on the other dependent variables. This may be due to the strong relationship between POS and turnover intention in the absence of work engagement (path coefficient = -0.747, $t = -10.435$). The standardized path coefficients between the variables in Model 5 are presented with the path diagram in Figure 10-5.

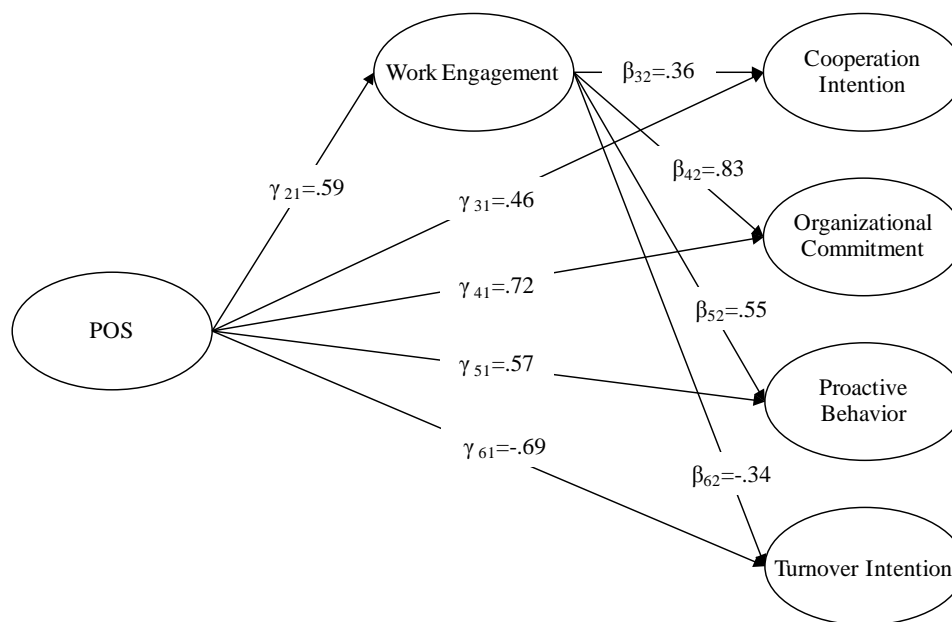


Figure 10-5. Standardized path coefficients for Model 5.

Model 6. Model 6 was designed to examine the structural relationships of group cohesion with the dependent variable through work engagement. Path coefficients produced by a SEM analysis for Model 6 are shown in Table 30-6. The initially hypothesized relationship among the variables was valid because all the path coefficients, shown in Table 30-6, were statistically significant. In order to examine the mediation

effects of work engagement the path coefficients representing the indirect effect were explored.

Table 30-6

Total, Indirect, and Residual Direct Effects for Model 6

<i>Total Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
GC	0.774	0.714	0.604	0.367	-0.782
	(0.061)	(0.036)	(0.043)	(0.031)	(0.058)
	12.609	19.611	14.066	11.955	-13.442
WE	--	0.102	0.571	0.260	-0.420
		(0.024)	(0.025)	(0.020)	(0.039)
		4.309	22.972	12.922	-10.868
<i>Indirect Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
GC	--	0.079	0.442	0.201	-0.325
		(0.019)	(0.039)	(0.022)	(0.038)
		4.173	11.451	9.288	-8.480
<i>Residual Direct Effects of Eta on Eta</i>					
	WE	CI	OC	PB	TI
GC	--	0.635	0.162	0.165	-0.457
		(0.040)	(0.025)	(0.028)	(0.059)
		15.869	6.435	5.989	-7.788

Note. GC = group cohesion, WE = work engagement, CI = cooperation intention, OC = organizational commitment, PB = proactive behavior, and TI = turnover intention.

According to the path coefficients, work engagement mediated the effects of group cohesion on cooperation intention ($\gamma_{2.1} * \beta_{3.2} = 0.079$, $t = 4.173$), organizational commitment ($\gamma_{2.1} * \beta_{4.2} = 0.442$, $t = 11.451$), proactive behavior ($\gamma_{2.1} * \beta_{5.2} = 0.201$, $t = 9.288$), and turnover intention ($\gamma_{2.1} * \beta_{6.2} = -0.325$, $t = -8.480$). Cooperation intention was significantly, but trivially, influenced by group cohesion through work engagement (11% of the total effect of group cohesion on cooperation intention). This may come from the

strong direct effect of group cohesion on cooperation intention (path coefficient = .635, $t = 15.869$). The standardized path coefficients between the variables in Model 5 are presented with the path diagram in Figure 10-6.

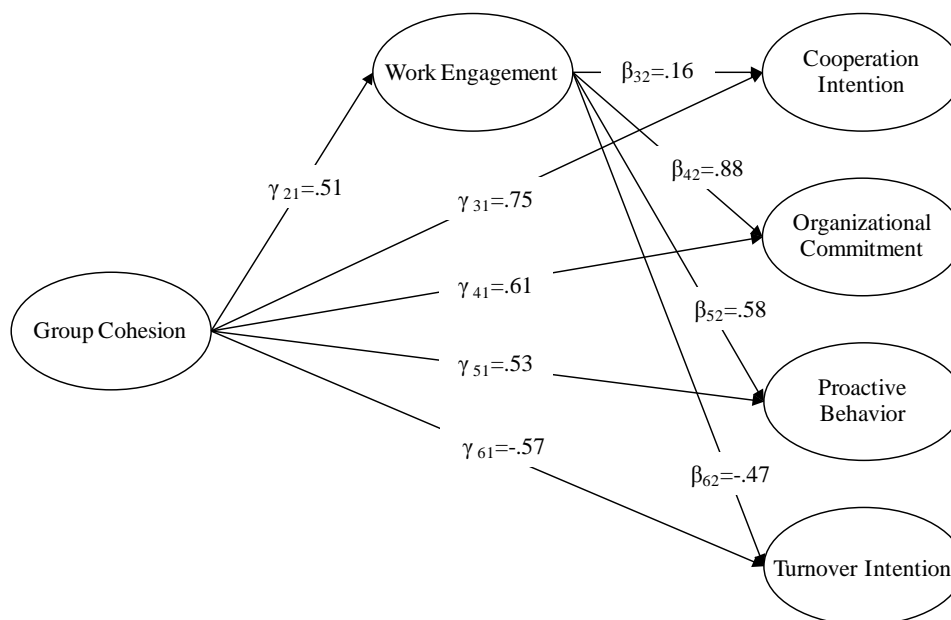


Figure 10-6. Standardized path coefficients for Model 6.

Chapter Summary

The UWES-17 for measuring the construct work engagement was validated in the Korean business organization contexts. It was found that four sub-factors of job characteristics, except autonomy, have positively significant impacts, and task interdependence also has positively significant, trivial, impact. Self-efficacy and trust have positively significant impacts. Perceived organizational support and group cohesion had positively significant impact. A series of analyses of the relationships of work engagement with the dependent variables produced results indicating that work engagement significantly influences the levels of cooperation intention, organizational commitment, and proactive behavior in the positive direction. Organizational

commitment was substantially influenced by work engagement. Unlike these three dependent variables, turnover intention was significantly influenced by work engagement in the negative direction. Finally, with regard to the structural relationships among the variables, most of the independent variables had a causal relationship with the dependent variable through work engagement. Interestingly, the impacts of feedback, one of the job characteristics sub-factors, on all the dependent variables were fully mediated by work engagement. The impact of self-efficacy on organizational commitment was also fully mediated.

CHAPTER FIVE
SUMMARY, IMPLICATIONS, AND
RECOMMENDATION FOR FUTURE RESEARCH

This chapter will summarize the research process and findings and discuss the implications for the theorists and practitioners in the field of positive organization development. In addition, recommendations for future research will be presented based on the findings and implied limitations of the current research.

Summary of Research

Research Purpose and Questions

This research was initiated by the increasing importance of positive organization development. Although there have been efforts to research positive organizational and work behaviors in an organizational setting, there is growing interest to focus on the strengths and potentials of a given organization and its members in order to develop or improve the organization's performance. This research is in line with this approach to organization development. The research was designed to address the following questions: (a) whether the construct work engagement (Schaufeli & Bakker, 2004) is valid in the Korean business organization setting; (b) how employees' work engagement in their work is influenced by the proposed factors; and in turn, (c) how employees' work engagement influences the proposed factors. The research questions developed for the purposes of the research are as follows:

RQ 1. To what extent do the hypothesized measurements for work engagement valid and reliable in Korean business organization contexts?

RQ 2-1. To what extent does each of the following impact the level of work engagement – (1) job characteristics and (2) task interdependence?

RQ 2-2. To what extent does each of the following impact the level of work engagement – (1) trust in management / peers and (2) self-efficacy?

RQ 2-3. To what extent does each of the following impact the level of work engagement – (1) perceived organizational support and (2) team cohesiveness?

RQ 3. To what extent does work engagement influence each of the following – (1) cooperation intention, (2) organizational commitment, (3) proactive work behavior, (4) turnover intention?

RQ 4. To what extent does work engagement mediate the effects of the antecedent variables on the consequent variable?

Research Procedures

Given the research purposes and questions, instruments for measuring the research variables were organized. With the assistance of two groups of bilingual HRD professionals, the instruments were translated into Korean and reviewed for clarity, common language, cultural adequacy, and contextual understanding. The survey was administered to seven Korean business organizations throughout six industries through a web-based survey system. A total of 612 complete responses were collected at a response rate of 34.9%. The collected data was analyzed using descriptive and inferential statistics.

Research Findings and Relevant Discussions

Examinations of measurement. First, work engagement, as a construct, which consists of vigor, dedication, and absorption, were validated with measures called *the Utrecht Work Engagement Scale (UWES)*, developed by by Schaufeli, Salanova, et al. (2002). This scale is composed of 17 items representing the aforementioned three sub-constructs. In order to test the construct validity of the scale, two CFAs were conducted separately for the first-order and second-order measurement models. The CFAs revealed that the two models acceptably fit the data. This means that, as proposed by Schaufeli and Bakker (2004), work engagement consists of the three sub-constructs, and these sub-constructs in turn represent and constitute work engagement as an overarching construct. In addition, a test of item reliability showed that all the measurement items for work engagement are reliable (Cronbach $\alpha = .91$). Taken together, it could be stated that the measures for work engagement (UWES) were reliable and valid in the context of Korean business organizations. The measures for all the other research variables were also examined in terms of reliability and construct validity. The measures were found to be reliable (Cronbach α ranging from .69 to .93) and valid (see Table 16-2 & 17-2 for measurement model fit indices).

Relationships between work engagement and its antecedent factors. In order to identify the independent impacts of the proposed antecedent variables on work engagement, three regression models were designed and examined. As proposed in the research framework, the antecedent variables were grouped into three categories, *job-related, psychological, and environmental*, and the variables in each of the groups were specified to be regressed on work engagement. In the model for job-related variables on

work engagement, the results revealed that job characteristics and task interdependence have statistically significant impacts on work engagement ($R^2 = .505$, $F = 102.982$, $p < .01$). In other words, a combination of job characteristics and task interdependence accounts for about 50% of the variance of work engagement. In terms of the independent impacts, task identity ($\beta = .250$) and feedback ($\beta = .330$), which are sub-factors of job characteristics, showed relatively higher impacts than the other sub-factors. The more the employees feel a sense of task identity and receive feedback in carrying out their work activities, the more they engage in their work. This finding is consistent with previous studies (Hackman & Oldham, 1975; Renn & Vandenberg, 1995), which suggested that task identity is associated with perceived meaningfulness of work. However, autonomy ($\beta = .059$, $t = 1.725$) did not show a significance in its impact on work engagement. Furthermore, the impact of task interdependence ($\beta = .061$, $t = 2.117$) on work engagement was statistically significant, but certainly trivial.

Relationships between psychological variables and work engagement, self-efficacy and trust accounted for about 51% of the variances of work engagement. Self-efficacy showed a relatively strong association with work engagement ($\beta = .518$, $t = 16.666$). Thus, it can be assumed that employees who believe themselves to be completing their work effectively are likely to be engaged in their work. The results also revealed that trust in management ($\beta = .218$, $t = 6.964$) and peers ($\beta = .175$, $t = 5.425$) are important in engaging employees in their work. Considering that an employee's work tends to be designated by an organization or work team and carried out in interactions with peers, it is plausible that trust in management and peer workers could encourage the

employee to think of their work as meaningful. This could be more plausible in Korea's collectivism-oriented culture.

When it comes to the relationships of environmental variables with work engagement about 37 % of the variance of work engagement was explained by perceived organizational support (POS) and group cohesion. Although POS ($\beta = .413$, $t = 11.623$) showed a stronger positive association with work engagement than group cohesion ($\beta = .302$, $t = 8.481$), the impacts of the two variables were statistically significant, and the difference in the standardized regression coefficient (β) was not substantial. This indicates that the two variables positively influence the levels of work. In other words, the greater the support employees receive from their organization, the more they engage in their work. POS has been mainly explained within the perspective of social exchange theory (SET). According to SET, organizational support given to or perceived by employees creates a sense of obligation to respond to their organization (Cropanzano & Mitchell, 2005). Employees may respond to their organization by involving themselves in their work. Given the SET perspective, the result of the relationship between POS and work engagement seems to be plausible. With regard to group cohesion, the results revealed that the levels of work engagement are influenced by the degree to which one's work team members identify themselves with the work group. Although group cohesion has been considered a key factor in effective work teams (Cohen & Bailey, 1997; Hackman, 1987; Langfred, 1998; Sundstrom, De Meuse, & Futrell, 1990), there is little empirical evidence showing the causal relationship of group cohesion with group performance. Since group cohesion is certainly a sort of perception about a group, there may be something that drives group members to create group performance based on their

perception of the group. This research proposed that work engagement acts as a bridge connecting perceived group cohesion to group performance or performance-related behaviors. The results could support this role of work engagement. When employees think of their group as cohesive and attractive, they are likely to work to create or improve their group's performance. In sum, perceived support given by an organization or work group could be important for the engagement of its members in themselves and in their work.

Relationships between work engagement and its consequent factors. In order to examine the relationships of work engagement with its consequent variables, work engagement was divided into three sub-factors, and these factors were treated as separate independent variables. First, for cooperation intention, the results indicated that work engagement account for about 21% of the variance of cooperation intention. In terms of independent impact, vigor ($\beta = .151$, $t = 2.035$) and absorption ($\beta = .276$, $t = 3.704$) significantly impacted the levels of cooperation intention. However, unlike vigor and dedication, dedication did not show a significant impact on cooperation intention ($\beta = .058$, $t = 0.735$). Secondly, the results clearly showed empirical evidence for a strong association between work engagement and organizational commitment. According to the results of a multiple regression analysis, work engagement was found to account for about 75% of the variance of organizational commitment. In other words, the more employees engage in their work, the more they are committed to their organization. This finding is consistent with the previous research (Demerouti et al., 2001; Saks, 2006) and suggests that organizational commitment is positively related to work engagement. It should be pointed out that the employees who are indeed engaged in their work

designated by their organization are likely to identify themselves with their organization. Social Exchange Theory (SET) also could provide a plausible rationale for this. A highly work-engaged employee feels that their work is meaningful, and the feeling creates some sort of obligation or attachment to their organization because the work itself and available resources, which are necessary for completing the work, are designated by their organization. If the employee views their organization as a valuable provider of job resources, s/he might develop a strong belief in their organization's goals and values. The organizational commitment model (Meyer & Allen, 1991) employed in this research conceptualized organizational commitment with three sub-constructs: *affective*, *necessary*, and *normative*. Separate analyses of the multiple regression models for each sub-construct reported that work engagement has significant positive impacts on all the sub-constructs of organizational commitment. Although the coefficients of determination for each sub-construct (R^2 ranges from .510 to .676) were lower than that of organizational commitment ($R^2 = .747$), there was no substantial difference in respect to the associations with work engagement. The point here is that work engagement has a strong impact on the levels of organizational commitment. Thirdly, proactive workers carry out their work roles in the initiative, creative, risk-taking, goal-oriented ways (Sonnentag, 2003). Thus, proactive behavior could be a crucial indicator of the individual performance at work. With respect to the relationship with work engagement, the results indicated that proactive behavior is significantly explained by work engagement ($R^2 = .402$, $F = 136.242$, $p < .01$). Employees engaged in their work are likely to proactively perform their work. Vigor ($\beta = .304$, $t = 4.691$) showed a relatively higher independent impact than dedication ($\beta = .199$, $t = 2.877$) and absorption ($\beta = .166$, $t = 2.552$). According to Schaufeli,

Salanova, et al. (2002), vigor is represented by the high levels of energy and willingness to actively do one's work. It seems to be reasonable that employees with high levels of energy towards their work proactively carry out their work to create an expected performance. The results are also, in part, supported by a previous empirical study (Salanova & Schaufeli, 2008) that investigated a mediating role of work engagement between job resources and proactivity. Finally, a multiple regression analysis for the relationship between work engagement and turnover intention showed the same results as a few of previous empirical studies (e.g., Hackman & Oldham, 1980; Harter et al., 2002; Saks, 2006; Schaufeli & Bakker, 2004). Work engagement showed negatively directed associations with turnover intention. Even though the portion of the variance of turnover intention explained by work engagement was not substantial ($R^2 = .298$, $F = 86.206$, $p < .01$), it can be clearly argued that work engagement influences the levels of turnover intention. However, the results indicate that only dedication ($\beta = -.394$, $t = -5.271$) is statistically significant in terms of the independent impact on turnover intention. It is true that the intention to behave is actually not the same as the actual behavior on the intention. However, this does not necessarily mean that they are totally different from each other. As reported by Ajzen and Fishbein (1980) and Igbaria and Greenhaus (1992), intention tends to be significantly related to behavior in the positive direction. Therefore, it seems acceptable that high levels of work engagement may reduce the chances to leave an organization.

Mediative impacts of work engagement. The last question of this research explored the mediating roles of work engagement in connecting the antecedent factors

with the consequent factors. A series of SEM models in which work engagement, its proposed antecedent variables, and consequent variables were hypothetically specified.

A SEM analysis for the structural relationships of job characteristics with the dependent variables through work engagement produced results indicating that job characteristics are partly and trivially associated with the dependent variables. However, an interesting finding here is that the mediative role of work engagement for feedback is one of the sub-factors of job characteristics. That is, feedback itself does not have significant influences on the dependent variables, but when it is combined with work engagement the dependent variables are significantly influenced by the levels of feedback. Encouraging workers to engage in their work by providing appropriate feedback on work performance could be an important intervention tool.

A SEM analysis for Model 2, illustrated in Figure 8, revealed that task interdependence has significant, but weak, associations with work engagement and the consequent variables. Controlling for work engagement, task interdependence was statistically non-significant in association with cooperation intention. The interesting point here is that even though it is not substantial, the impact of task interdependence becomes significant through work engagement. On the other hand, in the relationships of task interdependence with organizational commitment and proactive behavior, work engagement was found to function as a compressing mediator that reversed the direction of association. However, like the impact on cooperation intention, the overall associations of task interdependence with these consequent variables were trivial.

On the other hand, a SEM analysis for the model, in which self-efficacy was an exogenous independent variable, produced interesting findings of note. In terms of total

effect, the overall association among the variables was statistically significant. Self-efficacy had relatively small direct impact on cooperation intention (path coefficient = 0.151, $t = 2.079$) and proactive behavior (path coefficient = 0.198, $t = 4.513$) when work engagement was excluded from the model. However, including work engagement, the total effect of self-efficacy on the two consequent variables ($\gamma_{31} = 0.519$, $t = 9.904$; $\gamma_{51} = 0.524$, $t = 13.413$, respectively) increased substantially due to the mediative impacts of work engagement. Work engagement was found to mediate about 71% and 62% of the total impacts on cooperation intention and proactive behavior. This indicates that the unique impacts of self-efficacy on the two consequent variables are amplified by work engagement so that the levels of work engagement are important in encouraging employees to be cooperative and proactive at work. Another interesting result here is that although the unique impact of self-efficacy on organizational commitment was statistically non-significant (path coefficient = -0.028, $t = -0.685$), the total impact was substantial and significant ($\gamma_{41} = 0.824$, $t = 15.112$). This is due to the strong association between work engagement and organizational commitment ($\beta_{42} = 0.646$, $t = 21.259$) and the substantial mediation by work engagement. The coefficient for mediation is a product of two path coefficients (self-efficacy – work engagement; work engagement – organizational commitment). Considering that the difference between the total effect ($\gamma_{41} = 0.824$) and the mediated effect ($\gamma_{21} * \beta_{42} = 0.852$, $t = 14.253$) was near zero and non-significant, it can be concluded that the impact of self-efficacy on organizational commitment is fully mediated by work engagement. Employees who think of themselves as highly efficacious may not be committed to their organization. However, if they are engaged in their work, they are likely to be attracted to the organization that provides

available job resources necessary for carrying out the work successfully. The relationship of self-efficacy with turnover intention was also noteworthy because the total impact on turnover intention was negatively significant ($\gamma_{61} = -0.673$, $t = -8.797$), while the unique impact on turnover intention was positively significant (path coefficient = 0.225, $t = 2.311$). It can be easily supposed that employees with a high level of self-efficacy tend to leave their organization to find a better job or work environment. However, the results indicate that if an organization supports its employees who intend to leave the organization to engage in their work, the employees may withdraw their intent to leave. It can be concluded that work engagement is an important mediator in connecting self-efficacy with the consequent variables designated as indicators for performance.

Trust has been posited as a psychological variable positively associated with work engagement despite the lack of empirical evidence on that association (Chughtai & Buckley, 2008; Kahn, 1990; Schaufeli & Bakker, 2004). Research results indicated that trust is positively related with work engagement and other indicators of performance. Furthermore, the impacts of trust on the four proposed dependent variables were significantly mediated by work engagement ($\gamma_{21} * \beta_{32} = 0.208$, $t = 4.740$; $\gamma_{21} * \beta_{42} = 0.766$, $t = 11.927$; $\gamma_{21} * \beta_{52} = 0.384$, $t = 9.433$; $\gamma_{21} * \beta_{62} = -0.533$, $t = -7.822$, respectively). Work engagement was shown to substantially mediate the impacts of trust on organizational commitment and proactive behavior. It seems that high levels of trust in management and peers leads to increased levels of cooperation intention, organizational commitment, and proactive behavior, decreasing the chances of leaving the organization. The impacts of trust were mediated by work engagement in part, and then were eventually amplified.

Results for perceived organizational support (POS) showed the same patterns as those for trust. POS was revealed to positively impact work engagement and three of the consequent variables, and negatively impact turnover intention. All the unique effects of POS on the consequent variables were significant, and part of the total effects of POS was significantly mediated by work engagement ($\gamma_{21} * \beta_{32} = 0.232$, $t = 6.641$; $\gamma_{21} * \beta_{42} = 0.542$, $t = 12.892$; $\gamma_{21} * \beta_{52} = 0.247$, $t = 9.427$; $\gamma_{21} * \beta_{62} = -0.309$, $t = -7.131$, respectively). When employees perceive themselves as being supported by their organization, they make efforts to improve their job performance in response to the perceived support, and in turn, the combination of the perceived support and the work engagement promotes positive organizational behaviors.

Finally, group cohesion showed very similar patterns to trust and POS. Basically, group cohesion was found to directly influence work engagement and the four consequent variables. Work engagement mediated substantial portions of the total effects of group cohesion on organizational commitment ($\gamma_{21} * \beta_{42} = 0.442$, $t = 11.451$), proactive behavior ($\gamma_{21} * \beta_{52} = 0.201$, $t = 9.288$), and turnover intention ($\gamma_{21} * \beta_{62} = -0.325$, $t = -8.480$). On the other hand, the mediative effect for cooperation intention was significant, but trivial in size. This may be due to the strong unique effect of group cohesion on cooperation intention. It can be easily understood that the cohesive climate of a work group drives its members to cooperate with one another in order to accomplish the group's goals shared by the members.

In summary, the SEM analyses revealed that although there were differences in the magnitude of effect, work engagement mediates and promotes the effects of the most exogenous independent variables on the endogenous dependent variables.

Implications

Although there have been research efforts on positive organizational behaviors over a long time, it is increasingly regarded as an alternative way for organization development (OD) to improve an organization's performance based on the positive aspects of an organization and its members. This research focused primarily on the relationships among positive organizational behaviors. The results of this research could provide some implications for people who work in the academic and practical fields of OD.

Implications for Positive OD Researchers

This research can be considered an initiative study on work engagement in the contexts of Korean business organization. Work engagement is a relatively new factor representing the degree to which workers are engaged in their work. This construct is still tested for validity in many different contexts and applied in associations with relevant organizational factors. In this research the selected measurements of work engagement (UWES, 17 item version; Schaufeli & Bakker, 2004) were tested in terms of construct measurement in the Korean business organization context. A previous study with a 17-item UWES version reported that the scale shows factorial invariance across some countries (Schaufeli, Martínez, et al., 2002). This is opposed by Schaufeli and Bakker (2004), whose study indicated that measurements with high levels of internal consistency were found to represent three sub-constructs (vigor, dedication, and absorption). The sub-constructs constitute the construct work engagement. This result is consistent with the result reported by Schaufeli, Martínez, et al. (2002), and provides evidence of

construct validity for the scale. Furthermore, the relatively high internal consistency of the measures, evidenced by Cronbach's alpha coefficient, indicates the need to identify more adequate UWES versions filtered and attenuated by Korean cultural contexts. This research suggests that it is necessary for researchers to develop the Korean version of UWES, which sufficiently reflects cultural characteristics that are commonly shared by Korean business organizations.

This research highlights the significance of work engagement in a business organization setting. In order to investigate the roles of work engagement, several factors were selected and hypothetically assigned to work engagement as a way of exploring causal relationships. The specifications were based on the previous research. The results uncovered that one's engagement in their work is significantly influenced by supposed job-related, psychological, and environmental factors. Based on this finding, the research can provide empirical significance of the supposed antecedent factors by which the levels of work engagement are determined. On the other hand, it was revealed that work engagement itself acts as a predictor of the supposed consequent factors in a business organization setting. Thus, future researchers can design research frameworks which are extended based on the results of the current research, and also investigate the significance of work engagement on the extended research frameworks.

Implications for Top Management and OD Practitioners

Today's organizations are in need of highly engaged workers (Bakker & Schaufeli, 2008). This is because, as has been suggested by a number of studies, work engagement is a significant predictor of organization-level performance (Baumruk, 2004;

Buckingham & Coffman, 1999; Coffman & Gonzalez-Molina, 2002; Harter et al., 2002; Macey & Schneider, 2008; Luthans & Peterson, 2001; Richman, 2006). This research was initiated by the significance of work engagement's effect on organizational performance. Although this research did not suppose and measure specific organizational performance indices, it could provide top management and OD practitioners some idea of the implications. One is about how to encourage workers to engage in their work. This research reported that most of the proposed antecedent factors significantly influence the levels of work engagement. It might be an important directive in how top management and OD practitioners establish a climate for work engagement.

The overall relationships among the research variables highlight that associations of work engagement with the antecedent factors are more significant in encouraging performance-related behaviors than each of these factors. This implies that the OD practitioners should intervene to make sure that the antecedent factors cause work engagement. This research suggests that work engagement could be a critical factor for the retention of high performers. The results of the research questions indicated that employees who have a strong sense of self-efficacy tend not to show their predictable commitment to the organization, and are less likely to stay in the organization. However, when such employees are indeed engaged in their work, the level of commitment that they have to their organization becomes higher, while the level of intent to leave becomes lower than when they are not.

This research focused on the positive aspects of individual, group, and organization levels. In the case where an OD practitioner plans to apply a positivity-based intervention for organizational performance improvement, the OD practitioner may

design an OD intervention by consulting the research variables and the structural relationships among them.

Recommendations for Future Research

Prior to suggesting recommendations for future research on work engagement, it is important to make note of several implied limitations of this research.

First, the research data were collected via self-reporting. Self-reported data is not necessarily biased, but does contain potential sources of bias (for example, selective memory, exaggeration, and cultural tendency). Especially, the research might be exposed to the risk of exaggeration in reporting the respondents' feeling, thought, and belief because the research framework included variables which are sensitive to social desirability bias (for example, work engagement, self-efficacy, trust, and so on). Social desirability bias is the tendency of respondents to answer questions in order to avoid embarrassment and project a favorable image to others (Fisher, 1993). Secondly, the research sample came from a limited number of private business organizations in Korea. Thus, the generalization of the results produced by this research should be limited to the entity of Korean business organizations that meet the specific criteria applied for sample selection. Third, although the random sampling method was applied in this research, the research sample showed disproportions in terms of gender and work position. The percentages of male and female were 70.1% and 29.9% respectively, and approximately 74% of the participants held managerial positions. Such demographic disproportions may not only be indicative of demographic bias and but also lead to the reporting of misleading research results. Fourth, the possibility of redundancy in the measures for

work engagement (UWES-17; Schaufeli & Bakker, 2004) was not specifically identified. The internal consistency of the UWES-17 version was tested with Cronbach's alpha and inter-item correlation coefficients. The reliability coefficient of the measures for work engagement was .91, and the mean inter-item correlation coefficient was .72, which is higher than practical criteria suggested by some scholars (Briggs & Cheek, 1986; Clark & Watson, 1995). This implies that there may be redundancy in the measures of the UWES-17 version.

It is certain that future studies on work engagement could be initiated based on this research. In light of the research findings and limitations noted previously, there are some considerations for future research.

First, the results of the validation of the measurement for work engagement clearly need to be replicated and verified in other settings. The population of this research was limited to an entity of Korean for-profit business organizations and the research sample was gathered from only private business organizations. Therefore, future research needs to include other types of organizations such as non-profit and public organizations in order to examine the invariance of the model for work engagement across the different types of organizations. Demonstrations of the invariance will be evidence of the construct validity of the measurement for work engagement.

Second, in regards to the reliability and validity issues of measures of work engagement noted previously, and supposing that there is statistically diagnosed redundancy in the measures, it is strongly recommended that future research minimizes the items' redundancy by examining multiple sets of data collected with the items on different occasions. Apart from this strategy, future research may be conducted with a

short version of the UWES previously validated by some studies (Schaufeli et al., 2006; Shimazu et al., 2008). Schaufeli et al. (2006) conducted a cross-national study to construct a short version of the UWES with 10 national sample groups. In doing this, they employed an iterative process including face validity analysis and regression coefficient analysis. As a result, three items for each sub-construct (vigor, dedication, and absorption) were included in the short version of the UWES. This short version with nine items was also examined in terms of factorial validity. A three-factor model of work engagement measured with the nine-item version of the UWES was fitted to all the national samples. In a similar vein, Shimazu et al. (2008) found that a one-factor model of work engagement with the nine-item version of the UWES was better fitted to data than with the 17-item version. The results of the above studies imply that some redundancy exists in the 17-item version of the UWES. Therefore, future research may focus on identifying the best set of measures for work engagement by using different versions of the UWES.

Third, future research must investigate potential combination effects of the proposed independent variables on work engagement. This research focused on investigating how work engagement is independently influenced by each of the proposed antecedent variables. However, it can be easily supposed that significant associations between two variables may result in different patterns of the relationships with other variables. Although the research findings provided meaningful empirical evidence that is necessary for understanding the causal relationships of the antecedent variables with work engagement, it is not enough to fully understand the ways in which employees engage in their work in business organization settings.

Finally, as consequent factors of work engagement, only the individual-level factors, which are reportedly associated with organizational performance, were included in this research. It would be important to extend the current research framework by adding indices that are considered direct indicators of organizational performance.

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APPENDIX A

Questionnaires for Survey with Implied Informed Consent Form

(English and Korean Versions)



Implied Informed Consent Form for Social Science Research
The Pennsylvania State University

Title of Project: The structural relationships of work engagement with its antecedents and consequences in the Korean organization contexts

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1. **Purpose of the Study:** The purpose of this research study is to identify how work engagement is related with its antecedent and consequence factors in the Korean organization contexts.
2. **Procedures to be followed:** You will be asked to answer 105 questions on this survey.
3. **Duration:** It will take about 20 minutes to complete the survey.
4. **Statement of Confidentiality:** Your participation in this research is confidential. The data will be stored and secured in a password protected file. However, your confidentiality will be kept to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet by any third parties. In the event of a publication or presentation resulting from the research, no personal information will be shared.
5. **Right to Ask Questions:** Please contact Hong Min Kim at 1-814-321-7059 or hxk254@psu.edu with questions or concerns about this study.
6. **Voluntary Participation:** Your decision to be in this research is voluntary. Your employer will not know whether or not you have chosen to participate in the study. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will lead to no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to take part in this research study.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research. Please print off this form to keep for your records.

Section 1. Demographic information

The following items are to ask for your demographic information

1. Gender

- Male
- Female

2. Age

- ~29 years
- 30~39 years
- 40~49 years
- 50 years ~

3. Highest education

- High school
- 2-year college
- 4-year college
- Graduate school

4. Grade in your organization

- Executive
- General manager/Assistant general manager
- Manager
- Assistant manager
- Staff

5. Period which you have been working for your organization

() year(s)

6. Kind of your job

- Marketing/Sales
- Manufacturing
- Research/Development
- Informational technology/Internet
- Management Support
(Planning/General affair/Finance/Personnel/Training/Law/Audit)
- Etc.

Section 2. Work engagement

This section is about how you feel at work. Please read the following statements carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the “0” (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

0	Almost never	Rarely	Sometimes	Often	Very often	Always
1	2	3	4	5	6	
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy
2. _____ I find the work that I do full of meaning and purpose
3. _____ Time flies when I'm working
4. _____ At my job, I feel strong and vigorous
5. _____ I am enthusiastic about my job
6. _____ When I am working, I forget everything else around me
7. _____ My job inspires me
8. _____ When I get up in the morning, I feel like going to work
9. _____ I feel happy when I am working intensely
10. _____ I am proud of the work that I do
11. _____ I am immersed in my work
12. _____ I can continue working for very long periods at a time
13. _____ To me, my job is challenging
14. _____ I get carried away when I'm working
15. _____ At my job, I am very resilient, mentally
16. _____ It is difficult to detach myself from my job
17. _____ At my work I always persevere, even when things do not go well

Section 3. Antecedents of work engagement

3-1. The following statements are about your current job. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Strongly disagree Disagree Neutral Agree Strongly agree

My job gives me complete responsibility for deciding how and when the work is done.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job denies me any chance to use my personal initiative or judgment in carrying out the work.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job gives me considerable opportunity for independence and freedom in how I do the work.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job is set up so that I get constant “feedback” about how well I am doing.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just doing the work required by the job provides many chances for me to figure out how well I am doing.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job itself provides very few clues about whether or not I am performing well.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job requires me to do many different things, using a number of different skills and talents.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job requires me to use a number of complex or high-level skills.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job is quite simple and repetitive.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The outcomes of my work can affect other people in very important ways.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job is one where a lot of other people can be affected by how well the work gets done.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job itself is not very significant or important in the broader scheme of things.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job involves doing the whole piece of work, from start to finish.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job is arranged so that I do not have the chance to do an entire piece of work from beginning to end.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job provides me with a chance to completely finish the pieces of work I begin.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work can be performed fairly independently of others.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work can be planned with little need to coordinate with others.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is rarely required to obtain information from others to complete my work.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My work is relatively unaffected by the performance of other individuals or departments.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work requires frequent coordination with the effort of others		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance on my work is dependent on receiving accurate information from others		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3-2. The following statements are about yourself. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Absolutely wrong Wrong Neutral Right Absolutely right

I can always manage to solve difficult problems if I try hard enough		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If someone opposes me, I can find the means and ways to get what I want.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am certain that I can accomplish my goals.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that I could deal efficiently with unexpected events.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thanks to my resourcefulness, I can handle unforeseen situations.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can solve most problems if I invest the necessary effort.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can remain calm when facing difficulties because I can rely on my coping abilities.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am confronted with a problem, I can find several solutions.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I am in trouble, I can think of a good solution.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can handle whatever comes my way.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3-3. The following statements are about your relationships with your organization and peers. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Strongly disagree Disagree Neutral Agree Strongly agree

Management at my firm is sincere in its attempts to meet the employees' point of view.		1	2	3	4	5
		0	0	0	0	0
I feel quite confident that the firm will always try to treat me fairly.		1	2	3	4	5
		0	0	0	0	0
Our management would be quite prepared to gain advantage by deceiving the employees.		1	2	3	4	5
		0	0	0	0	0
If I got in difficulties at work I know my colleagues would try and help me out		1	2	3	4	5
		0	0	0	0	0
I can trust the people I work with to lend me a hand if I needed it.		1	2	3	4	5
		0	0	0	0	0
Most of my colleagues can be relied upon to do as they say they will do.		1	2	3	4	5
		0	0	0	0	0
The organization values my contribution to its well-being.		1	2	3	4	5
		0	0	0	0	0
If the organization could hire someone to replace me at a lower salary it would do so.		1	2	3	4	5
		0	0	0	0	0
The organization fails to appreciate any extra effort from me.		1	2	3	4	5
		0	0	0	0	0
The organization strongly considers my goals and values.		1	2	3	4	5
		0	0	0	0	0
The organization would ignore any complaint from me.		1	2	3	4	5
		0	0	0	0	0
The organization disregards my best interests when it makes decisions that affect me.		1	2	3	4	5
		0	0	0	0	0
Help is available from the organization when I have a problem.		1	2	3	4	5
		0	0	0	0	0
The organization really cares about my well-being.		1	2	3	4	5
		0	0	0	0	0
Even if I did the best job possible, the organization would fail to notice.		1	2	3	4	5
		0	0	0	0	0
The organization fails to appreciate any extra effort from me.		1	2	3	4	5
		0	0	0	0	0
The organization is willing to help me when I need a special favor.		1	2	3	4	5
		0	0	0	0	0
The organization cares about my general satisfaction at work.		1	2	3	4	5
		0	0	0	0	0
If given the opportunity, the organization would take advantage of me.		1	2	3	4	5
		0	0	0	0	0
The organization shows very little concern for me.		1	2	3	4	5
		0	0	0	0	0
The organization cares about my opinions.		1	2	3	4	5
		0	0	0	0	0
The organization takes pride in my accomplishments at work.		1	2	3	4	5
		0	0	0	0	0
The organization tries to make my job as interesting as possible.		1	2	3	4	5
		0	0	0	0	0

3-4. The following statements are about your team and co-workers. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Strongly disagree Disagree Neutral Agree Strongly agree

There is a great deal of trust among members of my work group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
Members of my group work together as a team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
The members of my work group are cooperative with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
My work group members know that they can depend on each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
The members of my work group stand up for each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
The members of my work group regard each other as friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
If they want to cooperate with me, I would be willing to accept it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
I would like to share ideas and resources necessary for works with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
I want to work alone rather than work with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5

Section 4. Consequences of work engagement

4-1. The following statements are about your general thoughts about your organization. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Strongly disagree Disagree Neutral Agree Strongly agree

I would be very happy to spend the rest of my career with this organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really feel as if this organization's problems are my own.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel a strong sense of belonging to my organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel emotionally attached to this organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel like part of the family at my organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This organization has a great deal of personal meaning for me.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right now, staying with my organization is a matter of necessity as much as desire.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It would be very hard for me to leave my organization right now, even if I wanted to.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too much of my life would be disrupted if I decided I wanted to leave my organization now.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have too few options to consider leaving this organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I had not already put so much of myself into this organization, I might consider working elsewhere.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of the few negative consequences of leaving this organization would be the scarcity of available		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel any obligation to remain with my current employer.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even if it were to my advantage, I do not feel it would be right to leave my organization now.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel guilty if I left this organization now.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This organization deserves my loyalty.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would not leave my organization right now because I have a sense of obligation to the people in it.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I owe a great deal to my organization.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4-2. The following statements are about your behavior tendency at work. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Absolutely wrong Wrong Neutral Right Absolutely right

I actively attack problems.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whenever something goes wrong, I search for a solution immediately.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whenever there is a change to get actively involved, I take it.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take initiative immediately even when other do not.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use opportunities quickly in order to attain my goals.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usually I do more than I am asked to do.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am particularly good at realizing ideas.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4-3. The following statements are about your turnover intention. Please indicate your rate of each statement.

1-----2-----3-----4-----5
 Strongly disagree Disagree Neutral Agree Strongly agree

I frequently think of quitting my job.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am planning to search for a new job during the next 12 months.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I have my own way, I will be working for this organization one year from now.		1	2	3	4	5
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thanks for your response!



사회과학분야 연구를 위한 참여동의서
펜실베니아 주립 대학교

연구제목: 한국의 기업 맥락에서의 Work engagement 와 그의 선행 및 후행요인간의 구조적 인과관계 탐구

연구자: 김홍민
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1. **연구의 목적:** 이 연구는 한국의 기업 맥락에서 조직구성원들의 Work engagement 가 선행요인과 후행요인과 어떠한 구조적 관계에 놓여있는가를 규명하기 위한 것입니다.
2. **절차:** 귀하는 본 설문조사에서 총 105 문항에 응답하도록 요청받을 것입니다.
3. **소요시간:** 모든 문항에 응답하시는데 약 20 분 정도 소요됩니다.
4. **비밀보장:** 귀하의 연구 참여에 관한 모든 사항은 비밀로 유지되며 귀하의 응답내용에 대해서는 응답자를 추적할 수 없도록 암호화됩니다. 다만, 보안수준이 이 연구에 사용되는 기술이 허용하는 범위에 한합니다. 임의로 제 3 자에게 보내진 자료에 대해서는 책임을 지지 않습니다. 추가로, 연구결과 발표시에 개인정보가 누설되지 않을 것입니다.
5. **문의:** 본 연구와 관련하여 문의사항이나 의견이 있으시다면, 김홍민(전화:1-814-321-7059/이메일: hxk254@psu.edu)에게 연락하실 수 있습니다.
6. **자발적 참여:** 귀하의 연구참여는 자의에 의한 것입니다. 따라서 귀하는 언제든지 자의에 의해 연구 참여를 중단할 수 있습니다. 또한, 귀하의 연구 참여 결정은 귀사에 결코 통보되지 않습니다. 귀하께서 답변하길 원하지 않는 질문에 대해서는 응답을 하지 않으셔도 됩니다. 또한, 중단으로 인한 어떠한 불이익도 발생하지 않음을 알려드립니다.

귀하는 18 세 이상이어야만 본 연구에 참여하실 수 있습니다.

모든 설문문항에 응답하시고, 종료 버튼을 클릭하시는 것은 귀하께서 위의 안내사항을 모두 읽었으며, 참여에 동의한 것을 의미합니다.

향후 참조를 위해 이 양식을 프린트하여 보관하시기 바랍니다.

1 부. 인적 정보

다음은 귀하의 인적사항에 관한 질문입니다.

1. 귀하의 성별은 무엇입니까?

- 남성
- 여성

2. 귀하의 연령은 다음 중 어디에 해당합니까?

- 29 세 이하
- 30-39 세
- 40-49 세
- 50 세 이상

3. 귀하의 최종 학력은 무엇입니까?

- 고등학교 졸업
- 2 년제 대학 졸업
- 4 년제 대학 졸업
- 대학원 졸업

4. 회사 내에서 귀하의 현재 직급은 무엇입니까?

- 임원(급)
- 부장/차장(급)
- 과장(급)
- 대리(급)
- 사원(급)

5. 현 회사에서 몇 년 동안 근무하시고 계십니까? 년 단위로 기입하여 주십시오.

()년

6. 회사 내에서 현재 어떠한 직무를 수행하고 계십니까?

- 마케팅/판매/영업 분야
- 생산/제조 분야
- 연구/개발 분야
- 정보기술(IT)/인터넷 분야
- 경영지원(기획/총무/재무회계/인사/교육/법무/감사) 분야
- 기타 분야

2 부. 직무 몰입도

제2부는 직무수행과 관련한 귀하의 느낌에 관한 것입니다. 다음의 문항들을 정독하시고 각 문항에 대해 귀하의 느낌을 잘 반영하는 정도로 응답해 주시기 바랍니다. 만약 어느 문항이 표현하는 느낌을 전혀 가진 적이 없다면, "0"에 체크를 해주시기 바랍니다. 그런 느낌을 가진 적이 있다면, "1"부터 "6"까지 얼마나 자주 그런 느낌을 가졌는지를 반영해 주시기 바랍니다.

	거의 없다	별로 없다	가끔 있다	자주 있다	매우 자주 있다	항상 있다	
	0	1	2	3	4	5	6
	전혀 없다	1년에 몇번	한달에 한번	한달에 몇번	1주에 한번	1주에 몇번	매일

1. _____ 나는 일을 할 때면, 에너지가 넘쳐난다.
2. _____ 내가 하는 일이 충분히 의미있고 뚜렷한 목적을 가지고 있다고 생각한다.
3. _____ 일을 할 때면, 나는 시간가는 줄을 모른다.
4. _____ 직무를 수행할 때, 내 자신이 강하고 의욕이 넘치는 것을 느낀다.
5. _____ 나는 내 일에 열정적이다.
6. _____ 나는 일을 할 때, 주변에서 일어나는 것들 모두를 잊어버릴만큼 그 일에 몰입한다.
7. _____ 나의 직무는 나를 고무시킨다.
8. _____ 아침에 일어나면, 일을 하러 가고싶은 생각이 든다.
9. _____ 나는 집중해서 일을 할 때 행복감을 느낀다.
10. _____ 나는 내가 하고 있는 일에 자부심을 느낀다.
11. _____ 나는 나의 일에 매료되어 있다.
12. _____ 나는 한 번에 아주 오랫동안이라도 지속적으로 일을 할 수 있다.
13. _____ 내 직무는 도전적인 과업으로 이루어져 있다.
14. _____ 일을 할 때, 나는 흥분된다.
15. _____ 나는 정신적인 면에서 내 직무를 유연하고 여유있게 수행한다.
16. _____ 나와 나의 일을 분리해서 생각하기란 어렵다.
17. _____ 하는 일이 잘 되지 않을지라도, 나는 항상 꾸준하게 일에 임한다.

3 부. 직무몰입의 선행요인

3-1. 다음은 귀하의 현재 직무에 관한 것입니다. 귀하의 생각을 잘 반영하는 곳을 체크하여 주시기 바랍니다.

	1-----	2-----	3-----	4-----	5-----
	전혀 그렇지 않다	그렇지 않다	중립	그렇다	매우 그렇다
나의 직무특성상, 그 직무를 어떻게 수행해야하는가에 대한 결정권은 내가 가지고 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
내 직무특성상, 나는 나의 주관적인 아이디어나 의사결정을 반영할 수 있는 여지가 없다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나는 일을 어떻게 처리해야 하는지에 대한 독립성과 자유를 보장받고 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무는 체계적으로 짜여져 있어 내가 직무를 얼마나 잘 수행하고 있는지에 대한 피드백을 지속적으로 받는다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
직무에 따른 일들을 수행할 때, 나는 내가 얼마나 잘 하고 있는지를 알 수 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무 특성상, 내가 일을 잘하고 있는지 그렇지 않은지를 알기가 어렵다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무는 많은 서로다른 일들로 이루어져 있고 다양한 기술(skills)과 재능(talents)을 필요로 한다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무를 수행할 때, 많은 복잡한 혹은 고급의 기술(skills)이 필요하다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무는 매우 단순하며 반복적인 일들로 이루어져 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무수행결과는 다른 사람들에게 많은 영향을 끼친다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무특성상, 그 직무가 얼마나 성공적으로 수행되었느냐에 따라 많은 사람들이 영향받을 수 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
보다 큰 범주에서 보면, 나의 직무는 그리 의미가 있거나 중요치 않다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무에는 처음부터 끝까지 하나의 일 전체를 다루는 것이 포함되어 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무는 다른 직무들과 연계되어 있어 하나의 일을 처음부터 끝까지 처리할 기회가 없다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
내 직무특성상, 나는 하나의 일을 처음부터 끝까지 처리할 수 있다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 일은 다른 동료들의 일과는 독립적이다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
업무계획을 세우는 데 있어, 다른 동료들과의 협의는 거의 필요치 않다.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

나의 일을 완수하는데 있어, 다른 사람으로부터 관련 정보를 얻는 경우는 별로 없다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 일은 비교적 다른 사람이나 부서의 성과에 영향을 받지 않는다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
일을 수행할 때, 나는 다른 사람들과 빈번히 조율해야 한다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나의 직무성과는 다른 사람으로부터 정확한 정보를 받느냐 안받느냐에 따라 달라진다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3-2. 다음은 귀하 자신에 관한 사항입니다. 각 문항을 읽으시고 귀하를 가장 적절하게 반영하는 정도에 체크해 주시기 바랍니다.

1-----2-----3-----4-----5
 전혀 그렇지 않다 그렇지 않다 중립 그렇다 매우 그렇다

충분한 노력을 기울인다면, 나는 어려운 문제도 항상 해결할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
누가 나를 반대한다할지라도, 나는 내가 원하는 바를 이룰 수 있는 방법을 찾을 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나는 내가 설정한 목표를 달성할 수 있다고 확신한다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나는 내가 예상치 못한 일들을 효율적으로 처리할 수 있을거라 확신한다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나는 지략에 능한 사람이기에, 새로운 상황에도 잘 대처할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
필요한 정도의 노력을 기울임으로써, 나는 거의 모든 문제를 해결할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
나는 상황대처능력이 뛰어나기 때문에, 곤란한 상황에 처해도 차분할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
문제상황에 처했을 때, 나는 여러가지 해결방안을 마련할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
곤란한 상황에 처했을 때, 나는 적절한 해결책을 생각해 낼 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
어떤 일이 닥치더라도, 나는 그것에 잘 대처할 수 있다.	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3-3. 다음은 귀하의 회사와 동료와의 관계에 관한 사항입니다. 귀하의 관계를 가장 적절하게 반영하는 정도에 체크해 주시기 바랍니다.

1-----2-----3-----4-----5
 전혀 그렇지 않다 그렇지 않다 중립 그렇다 매우 그렇다

우리 회사의 경영진은 진심으로 직원들의 요구를 충족시키고자 한다.		1	2	3	4	5
		0	0	0	0	0
나는 우리 회사가 나를 항상 공명정대하게 대할 것이라 확신한다.		1	2	3	4	5
		0	0	0	0	0
우리 경영진은 직원들을 속임으로써 뭔가 이득을 챙기는데 익숙하다.		1	2	3	4	5
		0	0	0	0	0
업무상 곤란을 겪게 되면, 나의 동료직원들은 나를 도와줄 것이다.		1	2	3	4	5
		0	0	0	0	0
내가 도움을 필요로 할 때 도와준 동료들을 나는 신뢰할 수 있다.		1	2	3	4	5
		0	0	0	0	0
직장동료 대부분은 말과 행동이 일치한다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 내가 회사경영에 기여한 바를 가치롭게 여긴다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 내가 기울인 그 어떤 과외의 노력도 치하하지 않는다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 내가 하는 그 어떤 불평불만에도 귀를 기울이지 않는다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 나의 안녕(well-being)을 진심으로 걱정해 준다.		1	2	3	4	5
		0	0	0	0	0
내가 최고의 성과를 냈을지라도, 우리 회사는 그것을 알아차리지 못했을 것이다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 업무상 나의 전반적인 만족도에 관심을 기울인다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 내게 별 관심을 보이지 않는다.		1	2	3	4	5
		0	0	0	0	0
우리 회사는 나의 업무성과에 자부심을 가진다.		1	2	3	4	5
		0	0	0	0	0

3-4. 다음은 귀하의 팀과 팀 동료에 관한 사항입니다. 귀하의 생각을 잘 반영하는 정도에 체크하여 주시기 바랍니다.

1-----2-----3-----4-----5
 전혀 그렇지 않다 그렇지 않다 중립 그렇다 매우 그렇다

나와 함께 일하는 팀구성원들 사이에는 신뢰가 두텁다.	1	2	3	4	5
	0	0	0	0	0
팀 동료들은 말 그대로 하나의 팀처럼 함께 일한다.	1	2	3	4	5
	0	0	0	0	0
팀 동료들은 서로 협력하며 일한다.	1	2	3	4	5
	0	0	0	0	0
나의 팀 동료들은 우리가 서로 의지할 수 있다는 것을 알고 있다.	1	2	3	4	5
	0	0	0	0	0
팀 동료들은 서로를 지지한다.	1	2	3	4	5
	0	0	0	0	0
팀 동료들은 서로를 친구처럼 여긴다.	1	2	3	4	5
	0	0	0	0	0
팀 동료들이 나와 협력해서 일을 하기 원한다면, 나는 기꺼이 이에 응할 것이다.	1	2	3	4	5
	0	0	0	0	0
함께 일하는데 있어 필요한 아이디어와 가용한 자원들을 동료들과 공유할 것이다.	1	2	3	4	5
	0	0	0	0	0
나는 동료들과 함께 일하기 보다는 혼자 일하길 원한다.	1	2	3	4	5
	0	0	0	0	0

4 부. 직무몰입의 후행요인

4-1. 다음은 회사에 대한 귀하의 일반적인 생각에 관한 것입니다. 귀하의 생각을 가장 잘 반영하는 정도에 체크하여 주시기 바랍니다.

	1-----	2-----	3-----	4-----	5
	전혀 그렇지 않다	그렇지 않다	중립	그렇다	매우 그렇다
나는 앞으로의 경력을 이 회사에서 기꺼이 보내고 싶다.	0	0	0	0	0
나는 진정 우리 회사의 문제가 곧 나의 문제라고 생각한다.	0	0	0	0	0
나는 우리 회사에 대해 강한 소속감을 느끼지 않는다.	0	0	0	0	0
나는 이 회사에 대해 정서적인 애착을 느끼지 않는다.	0	0	0	0	0
나는 회사에서 가족의 일부같다는 느낌을 받지 않는다.	0	0	0	0	0
우리 회사는 나에게 있어 상당히 많은 의미를 지니고 있다.	0	0	0	0	0
현재 이 회사가 나의 생활에 필요하기 때문에, 나는 이 곳에 몸담고 있다.	0	0	0	0	0
내가 원한다고 해도, 지금 당장 회사를 떠나는 것은 상당히 어려운 일이다.	0	0	0	0	0
지금 당장 회사를 떠나는 것은 나의 일상에 부정적인 영향을 미칠 것이다.	0	0	0	0	0
현재로서는 이 회사를 떠날 수 있는 별 다른 선택이 없다.	0	0	0	0	0
만일 지금까지 이 회사에 열정과 헌신을 다하지 않았다면, 나는 아마 다른 회사로 이직하는 것을 고려했을 수도 있다.	0	0	0	0	0
현재 이 회사를 떠난다면, 다른 여러 가지들을 희생해야 하고 감수 해야 한다.	0	0	0	0	0
나는 이 회사에 머물러야 한다는 의무감을 느끼지 않는다.	0	0	0	0	0
만일 더 좋은 기회가 주어진다 하더라도 지금 이 회사를 떠나는 것은 옳지 않다.	0	0	0	0	0
지금 이 회사를 떠난다면 나는 일종의 죄책감을 느끼게 될 것이다.	0	0	0	0	0
내가 속해있는 회사는 나의 열정을 바칠만한 조직이다.	0	0	0	0	0
현재 나는 회사내의 동료들에 대한 의무감 때문에 이 회사를 떠날 수 없다.	0	0	0	0	0
나의 조직이 나에게 많은 것들을 해 주고 있다고 느낀다.	0	0	0	0	0

4-2. 다음은 귀하의 행동경향에 관한 것입니다. 귀하를 잘반영하는 정도에 체크하여 주시기 바랍니다.

1-----2-----3-----4-----5
 전혀 그렇지 않다 그렇지 않다 중립 그렇다 매우 그렇다

문제가 생기면, 나는 이를 적극적으로 해결하려 한다.		1	2	3	4	5
		0	0	0	0	0
뭔가 잘못되어가고 있다면, 나는 항상 즉각적으로 그것을 해결할 수 있는 방안을 강구한다.		1	2	3	4	5
		0	0	0	0	0
적극적으로 참여하거나 관여할 수 있는 기회가 생긴다면 나는 그 즉시 그 기회를 잡을 것이다.		1	2	3	4	5
		0	0	0	0	0
다른 사람들이 주도하거나 너스레를 때면, 내가 즉각적으로 나서서 주도한다.		1	2	3	4	5
		0	0	0	0	0
목표한 바를 이루기 위해 나는 신속히 가용한 기회들을 이용한다.		1	2	3	4	5
		0	0	0	0	0
나는 보통 나에게 주어진 것보다 더 많은 일을 한다.		1	2	3	4	5
		0	0	0	0	0
나는 특히 아이디어를 실행에 옮겨 구체화하는 것에 능하다.		1	2	3	4	5
		0	0	0	0	0

4-3. 다음의 이직의도에 관한 사항입니다. 귀하의 생각을 잘 반영하는 정도에 체크하여 주시기 바랍니다.

1-----2-----3-----4-----5
 전혀 그렇지 않다 그렇지 않다 중립 그렇다 매우 그렇다

나는 이 회사를 그만두는 것을 자주 생각하곤 한다.		1	2	3	4	5
		0	0	0	0	0
나는 향후 1년 동안에 새로운 직장을 구할 계획이다.		1	2	3	4	5
		0	0	0	0	0
이 회사에 남거나 떠나는 것을 결정하는 것이 나에게 달려있다면, 나는 앞으로 1년 동안은 더 이 회사에서 일할 것이다.		1	2	3	4	5
		0	0	0	0	0

성심껏 응답해 주셔서 진심으로 감사드립니다.

APPENDIX B

Recruitment Letter

(English and Korean versions)

Recruitment Letter

Dear _____

I am Hong Min Kim, a graduate student at the Pennsylvania State University in the U.S.A. I am doing a study entitled “the structural relationships of work engagement with its antecedents and consequences in the Korean organization contexts”. This study is being conducted for research. In doing this study, I am in need of your participation. Thus, I would like to cordially invite you to participate in the study.

The participation is absolutely upon your agreement. Your participation is voluntary so that you may decide whether you would agree or not to participate in the study. For your better understanding, I inform you the relevant information as below. We strongly recommend you to read this form carefully.

Research background & Selection criteria

The purpose of this study is to investigate the causal relationships of engagement at work with its plausible antecedent and consequential factors in the Korean business organization context. For this study, any employees who are working for Korean business organizations could participate in this study in terms of each participant’s voluntary agreement of participation. Genders, positions, experiences, and tasks are not used for participant selection.

Confidentiality

Your participation in this research is confidential. Your confidentiality will be kept to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet by any third parties. The data will be stored and secured in a password protected file. In the event of a publication or presentation resulting from the research, no personal information will be shared.

Voluntary nature of the study

This participation will be absolutely based on the condition of your voluntary agreement of participation. Your employer will not know whether or not you have chosen to participate in the study.

Contacts: You may contact the primary investigator: Hong Min Kim (hxx254@psu.edu, 1-814-321-7059) at any time if you have any questions and need additional information.

Thank you.

Sincerely yours,

Hong Min Kim
Ph.D. Candidate
The Pennsylvania State University, University Park, USA

연구참여 의뢰서

_____ 귀하께

저는 미국 펜실베이니아 주립대학교에서 Ph.D. 과정을 밟고 있는 김홍민입니다. 저는 한국의 기업 맥락에서의 직무 몰입(Work engagement)과 이의 선행 및 후행요인간의 구조적 인과관계라는 제목으로 연구를 진행하고 있습니다. 이 과정에서 귀하의 연구참여가 필요하기에, 저는 귀하께서 연구 참여를 정중히 의뢰합니다. 이 연구참여는 전적으로 귀하의 동의에 따라 진행될 것입니다. 귀하께서 원하지 않으신다면, 언제든지 연구참여를 거부하실 수 있습니다. 귀하의 이해를 돕기 위해서, 다음과 같이 안내해 드립니다. 주의깊게 읽어주시기 바랍니다.

연구의 목적 및 참여자 선발과정

본 연구는 한국의 기업상황에서 직무 몰입과 이의 선행 및 후행요인간의 인과적 관계를 규명하는데 그 목적이 있습니다. 연구 참여에 자발적으로 동의한 한국기업의 조직구성원이라면 연구 참여 대상자가 될 수 있습니다. 성별, 직위, 경험, 그리고 직무는 참여자 선발에 고려되지 않습니다.

비밀 유지

귀하의 참여과정은 철저히 비밀로 진행됩니다. 귀하에 대한 보안은 이 연구에 적용된 기술이 허용하는 범위에 한하며, 제 3 자에 의한 정보유출에 대해서는 책임을 지지 않습니다. 귀하께서 제공한 자료는 암호화된 안전한 곳에 저장될 것이며, 개인적인 정보는 결코 공유되지 않을 것임을 알려드립니다.

자발성의 원칙

본 연구참여는 전적으로 귀하의 자발적인 의사에 따라 진행됩니다. 또한, 귀하의 연구참여 결정은 회사에 결코 통보되지 않습니다.

연락처

질문이나 의견이 있으시다면 연구자 김홍민 (hxx254@psu.edu, 1-814-331-7059)에게 연락하실 수 있습니다.

감사합니다.

김홍민 드림

미국 펜실베이니아 주립대학교

APPENDIX C

Notification of IRB Approval

From: "Brown, Amanda" <aeb29@rtto.psu.edu>
 To: "Hong Min Kim" <hmk254@psu.edu>
 Subject: IRB#35247 The structural relationships of work engagement with its antecedents and consequences in the Korean organization contexts
 Date: Fri, Oct 15, 2010 10:55 AM
 CC: "'wjr9@psu.edu'" <wjr9@psu.edu>

Hong Min Kim,

The Office for Research Protections (ORP) has reviewed the eSubmission application for your research involving human participants and determined it to be exempt from IRB review. You may begin your research. This study qualifies under the following category: **Category 2:** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observations of public behavior unless: (i) information obtained is recorded in such a manner that human participants can be identified, directly or through identifiers linked to the participants; **and** (ii) any disclosure of the human participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation. [45 CFR 46.101(b)(2)]

PLEASE NOTE THE FOLLOWING:

The principal investigator is responsible for determining and adhering to additional requirements established by any outside sponsors/funding sources.

· **Record Keeping**

- o The principal investigator is expected to maintain the original signed informed consent forms, if applicable, along with the research records for at least three (3) years after termination of the study.
- o This correspondence will also be available to you in PRAMS at www.prams.psu.edu.

· **Consent and Recruitment Document(s)**

- o The exempt consent form(s) will no longer be stamped with the approval/expiration dates.
- o The most recent consent form(s) that you uploaded for review is the one that you are expected to use

· **Follow-Up**

- o The Office for Research Protections will contact you in three (3) years to inquire if this study will be on-going.
- o If the study is completed within the three year period, the principal investigator may complete and submit a **Project Close-Out Report:**
<http://www.research.psu.edu/orp/areas/humans/applications/index.asp#other>

· **Revisions/Modifications**

- o Any changes or modifications to the study must be submitted through the eSubmission application for this protocol in PRAMS (www.prams.psu.edu).

Please do not hesitate to contact me if you have any questions or concerns.

Thank you,

Amanda E. Brown, CIP
Research Compliance Coordinator II
The Pennsylvania State University | Office for Research Protections | The 330 Building,
Suite 205 | University Park, PA 16802
Telephone (814) 865-7986 | Main Line (814) 865-1775 | Fax (814) 863-8699 | EMAIL:
aeb29@psu.edu | WEB www.research.psu.edu/orp

APPENDIX D

Permission Letter for the use of UWES-17

From: "Schaufeli, W. (Wilmar)" <w.schaufeli@uu.nl>
To: "Hong Min Kim" <hmk254@psu.edu>
Subject: RE: Regarding the use and validation of UWES
Date: Tue, Mar 16, 2010 04:16 AM

Dear Mr. Kim,

Thank you very much for your interest in my work on engagement. As far as I know the UWES has not been validated in South Korea (but in neighboring countries as China and Japan).

The UWES can be used freely for academic, non-profit purposes and you may find relevant publications as well as the English and other language versions on my personal website.

Good luck with your research project!

With kind regards,

Wilmar Schaufeli

Wilmar B. Schaufeli, PhD

Social & Organizational Psychology

PO Box 80.140; 3508 TC Utrecht; The Netherlands

Phone: +31(0)30-2539093 Mobile: +31(0)651475784

<http://www.schaufeli.com>

VITA

Hong Min Kim

EDUCATION

The Pennsylvania State University, University Park **August 2007 ~ August 2012**
Doctor of Philosophy (Ph.D.), the Department of Learning and Performance Systems, the
Program of Workforce Education and Development

Han-Yang University, Seoul **March 1999 ~ February 2001**
Master of Science (M.S.), the Department of Education

Han-Yang University, Seoul **March 1992 ~ February 1996**
Bachelor of Arts (B. A.), the Department of Education

SELECTED PUBLICATIONS AND PROCEEDINGS

Song, J. H., Kim, H. M., & Kolb, J. A. (2009). The effect of learning organization culture on the relationship between interpersonal trust and organizational commitment. *Human Resource Development Quarterly*, 20 (2), 147 – 167.

Song, J. H., & Kim, H. M. (2009). The integrative structure of employee commitment: the influential relations of individuals' characteristics in a supportive learning culture. *Leadership and Organization Development Journal*, 30 (3), 240 – 255.

Kim, H. M., & Song, J. H. (2009). The Moderating Impact of Individualism and Collectivism on the Relations between Interpersonal Trust and Cooperation in the Korean Context. In T. J. Chermack, J. Storberg-Walker, & C. M. Graham (Eds.), *AHRD 2009 International Research Conference Proceedings* (pp. 465-487). Washington D.C.: Academy of Human Resource Development.

Song, J. H., Chermack, T. J., & Kim, H. M. (2008). Integrating individual learning processes and organizational knowledge formation: Foundational determinants for organizational performance. In T. J. Chermack, J. Storberg-Walker & C. M. Graham (Eds.), *2008 Academy of Human Resource Development conference proceedings* (pp. 941-948). Panama City, FL: Academy of Human Resource Development.