

A Latent Profile Analysis of
Benefactor and Beneficiary Organizational Citizenship Behaviors toward Individuals

by

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DEDICATION

I dedicate this dissertation to God, my family, my mentors, and my friends.

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“For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future.”

(Jeremiah 29:11)

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ABSTRACT

Although organizational citizenship behaviors toward individuals (OCB-I) have been studied over decades, the beneficiary side of OCB-I has been understudied. The co-existing and interactive possibility of benefactor OCB-I and beneficiary OCB-I within individuals has been ignored. Therefore, this research adopted a person-centered approach and examined different profiles of benefactor OCB-I and beneficiary OCB-I on the basis of Grant's (2013) theory. Results from Study 1 data (cross-sectional data) and Study 2 data (multiple waves of data) revealed the three profile groups: vigorous (high benefactor OCB-I and high beneficiary OCB-I), moderate (moderate benefactor OCB-I and moderate beneficiary OCB-I), and passive OCB-I groups (low benefactor OCB-I and low beneficiary OCB-I). Also, the three profiles were significantly differentiated by positive affect, other-oriented empathy, task interdependence, and job satisfaction. Furthermore, the vigorous OCB-I group showed the lowest psychological strain while the passive OCB-I group showed the lowest physical strain. The results offer theoretical implications for Grant's (2013) theory, OCB-I and employee health research, and equity theory in comparison to conservation of resources theory. In addition, practical implications for enhancing employee health are discussed.

CHAPTER ONE: INTRODUCTION

Organizational citizenship behavior (OCB) is defined as “performance that supports the social and psychological environment in which task performance takes place” (Organ, 1997, p. 95). Examples of OCB are helping others, welcoming new employees, and volunteering for additional work (Borman & Motowidlo, 1993). For several decades, OCB has been recognized as a valuable class of employee behavior in the workplace. Researchers have revealed that performing OCB not only enriches employees’ personal success (e.g., promotion, higher salary; Allen, 2006) but also contributes to organizational success (e.g., organizational productivity and efficiency, better customer satisfaction; Podsakoff, Whiting, Podsakoff, & Blume, 2009).

Although the OCB literature has expanded over the decades, the focus has been on the benefactor side of OCB (i.e., those who provide OCB), and the beneficiary side of OCB (i.e., those who receive OCB) has been widely ignored. Given that OCB is based on social exchange relationships and interactions (e.g., Konovsky & Pugh, 1994), it seems important to study those who benefit from OCB as well as those who perform OCB to holistically understand OCB phenomena. Therefore, the proposed research investigates both benefactor and beneficiary sides of OCB. Specifically, this research focuses on OCB toward individuals (OCB-I) to examine benefactor and beneficiary sides of OCB. This focus was selected because the aims of the proposed research are to investigate giving and receiving OCB-I among individuals versus exchanges between the individual and the organization.

In the investigation of benefactor and beneficiary sides of OCB-I, this research takes into account the possibility that individuals provide and receive, provide or receive, or neither

provide nor receive OCB-I, using a person-centered approach (Craig & Smith, 2000). To be specific, four profile groups of benefactor OCB-I and beneficiary OCB-I were proposed based on an expanded version of Grant's (2013) person-centered theory. The proposed four profile groups are labeled as (1) vigorous, (2) sacrificing, (3) selfish, and (4) passive. In addition, this research examines whether theoretical individual-level antecedents predict identified profile groups and identified profile groups show different individual-level health outcomes. Based on theoretical reasons and empirical evidence, dispositional variables (i.e., conscientiousness, positive affect, and other-oriented empathy), one task characteristic variable (i.e., task interdependence), and one attitudinal variable (i.e., job satisfaction) were selected as antecedents of profile groups; also, two health outcomes (physical strain and psychological strain) were chosen as outcomes of profile groups. In order to test the proposed hypotheses, Studies 1 and 2 were conducted using latent profile analyses. Study 1 investigated hypotheses with cross-sectional data. Study 2 replicated the findings using multiple waves of data.

The purpose of the proposed research is threefold. The first is to identify individual-level benefactor and beneficiary OCB-I latent profiles. The second is to examine whether theoretical individual-level antecedents significantly differentiate the profiles. The third is to investigate how the identified profiles relate to different individual-level health outcomes. The proposed research stands to contribute to the literature in several ways. First, it expands the research scope of OCB-I by examining the beneficiary side of OCB-I. Studying the beneficiary side of OCB-I as well as the benefactor side of OCB-I will allow future researchers to understand OCB-I phenomena in a more holistic way. Second, this research contributes to the occupational health psychology literature by exploring employee health consequences associated with benefactor OCB-I and beneficiary OCB-I. Unlike employee work outcomes and organizational outcomes

(e.g., Podsakoff et al., 2009), health outcomes associated with OCB-I have received relatively little attention. In addition, the effects of beneficiary OCB-I on health have not been investigated, especially in the context of the relationship between OCB-I and health. This research will shed light on the relationship between OCB-I and employee health outcomes. Third, the findings have the potential to make a theoretical contribution to the OCB-I literature. Recently, Grant (2013) proposed a person-centered theory in relation to OCB and helping. However, this theory has not been empirically investigated. The proposed research not only empirically tests the theory with two separate studies but also expands the theory by including additional categories. Also, in the OCB literature, social exchange theory, conservation of resources theory, and equity theory have been popularly adopted; however, conservation of resources theory and equity theory conflict in their predictions with regard to the health consequences associated with giving and receiving OCB-I. Conservation of resources theory infers that people who receive more resources than give resources are likely to handle stress better due to extra resources and consequently show the most positive health outcomes. However, equity theory suggests that people who receive more resources than give resources would feel guilt and show negative health outcomes. In fact, equity theory insinuates that people who give and receive the same amount of resources would show the most positive health outcomes. The proposed research is intended to help elucidate which theory is likely to be more accurate regarding health consequences. If the selfish OCB-I group (low give/high receive) shows the most positive health outcomes compared to the other groups, conservation of resources theory will be supported given that the selfish OCB-I group has most additional resources. If the vigorous OCB-I group (high give/high receive) and the passive OCB-I group (low give/low receive) show the most positive health outcomes compared to the sacrificing OCB-I group and the selfish OCB-I group, equity theory will be supported.

Lastly, this research attempts to replicate findings using multiple wave data in Study 2. Replication helps rule out the possibility that the identified profile groups are found due to sampling error, and helps support construct validation of the identified profile groups and covariates.

In the next sections, a general overview of OCB is presented, followed by the introduction of benefactor OCB-I and beneficiary OCB-I. Then, a person-centered approach is explained, and theoretical frameworks of OCB are introduced. Based on the theoretical frameworks, the optimal number of profile groups is hypothesized. Based on empirical studies regarding OCB, appropriate predictors and outcomes are selected. Lastly, research plans and designs are described.

Overview of Organizational Citizenship Behavior (OCB)

Although similar concepts to OCB had been previously proposed, the OCB term was originally introduced by Organ (1988). In 1988, Organ initially defined OCB as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization” (Organ, 1988, p. 4). However, this definition was criticized later because OCB is not always discretionary. Thus, Organ (1997) revised his definition of OCB to “performance that supports the social and psychological environment in which task performance takes place” (Organ, 1997, p. 95). According to Podsakoff, Podsakoff, Mackenzie, Maynes, and Spoelma (2014), this revised definition provides several benefits. First, this definition is more coherent than other definitions. Also, this definition expands the concept of OCB beyond an “extra-role” behavior. Lastly, reward possibilities from OCB performance are taken into account (Motowidlo, 2000).

Researchers have proposed that OCB consists of multiple dimensions. Initially, Smith, Organ, and Near (1983) suggested two dimensions: altruism (helping other members of the organization) and compliance (obeying organization rules, policies, and norms). Later, Organ (1988) further differentiated the dimensions and proposed five: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Based on Organ's five OCB dimensions, Podsakoff, MacKenzie, Moorman, and Fetter (1990) developed an OCB measure, and the measure has been popularly used in various studies. Around that time, Williams and Anderson (1991) suggested two OCB dimensions: OCB toward individuals (OCB-I) and OCB toward the organization (OCB-O). In their paper, they defined OCB-I as behaviors that "immediately benefit specific individuals and indirectly through this means to contribute to the organization (e.g., helps others who have been absent, takes a personal interest in other employees)," and OCB-O as behaviors that "benefit the organization in general (e.g., gives advance notice when unable to come to work, adheres to informal rules devised to maintain order)" (Williams & Anderson, 1991, p. 601–602). Later, Lee and Allen (2002) revised Williams and Anderson's (1991) scale to measure only OCB performance, not task performance. In addition to these frameworks, other researchers have generated additional OCB dimension frameworks (e.g., Graham, 1991; George & Brief, 1992; Moorman & Blakely, 1995).

Similar concepts of OCB were generated in the 1990s. For example, Borman and Motowidlo (1993) generated the concept of contextual performance. Contextual performance refers to voluntary behaviors that help an organization sustain and enhance its social, psychological, and organizational environment. Borman and Motowidlo (1997) proposed five dimensions of contextual performance: "persisting with enthusiasm and extra effort as necessary to complete own task activities successfully," "volunteering to carry out task activities that are

not formally part of own job,” “helping and cooperating with others,” “following organizational rules and procedures,” and “endorsing, supporting, and defending organizational objectives.” In addition, Van Dyne, Cummings, and Parks (1995) proposed a concept referred to as extra-role behaviors. Extra-role behaviors are discretionary behaviors that promote organizational functioning by going further than general role expectations. Van Dyne and LePine (1998) suggested two dimensions of extra-role behaviors: helping and voice.

These various OCB frameworks and OCB-related constructs have contributed to the OCB literature by shedding light on various aspects of OCB. However, the lack of agreement in OCB dimension frameworks and OCB constructs have inhibited the literature from accumulating relevant findings and developing a robust nomological network (e.g., Moon, Van Dyne, & Wrobel, 2004; Organ, Podsakoff, & MacKenzie, 2006; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Spitzmuller, Van Dyne, and Ilies (2008) pinpointed these issues in their review paper and suggested Williams and Anderson’s (1991) OCB-I and OCB-O framework as the optimal framework to integrate the various OCB dimension frameworks because this OCB-I and OCB-O framework parsimoniously and conceptually meaningfully encompasses the various OCB dimensions. For example, they argued that OCB-I includes Smith et al.’s (1983) altruism while OCB-O embraces Smith et al.’s compliance (Spitzmuller et al., 2008). OCB-I contains Organ’s (1988) altruism and courtesy, and OCB-O includes Organ’s conscientiousness, sportsmanship, and civic virtue (Williams & Anderson, 1991). Other OCB dimensions such as helping behavior (Van Dyne & LePine, 1998) and helping co-workers (George & Brief, 1992) are classified as OCB-I; OCB dimensions such as loyalty, obedience, participation (Van Dyne et al., 1994), and loyal boosterism (Moorman & Blakely, 1995) are classified as OCB-O. Following Spitzmuller et al.’s advice, in this study, I chose Williams and Anderson’s OCB-I and OCB-O

framework to develop conceptual definitions of benefactor OCB and beneficiary OCB. In Williams and Anderson's OCB-I and OCB-O framework, this research specifically focused on OCB-I given that it aims to identify the "individual-level" of latent profile groups, instead of the "organizational-level" of latent profile groups. Also, all selected antecedents and outcomes are "individual-level" variables to serve this purpose adequately.

Benefactor and Beneficiary OCB toward Individuals (OCB-I)

In OCB research, the benefactor side of OCB has been the focus of attention; whereas, the beneficiary side of OCB has been largely neglected. A similar phenomenon has been discussed in the leadership literature. Leadership has a long history of research in the organization literature; however, the followership area had been ignored for many years (e.g., Kelley, 1988). Given the interactive nature of leadership, studying followership has enhanced understanding of leadership. Similarly, considering the interactive nature of OCB, investigating the beneficiary aspect of OCB is expected to increase understanding of OCB. Therefore, both sides of OCB should be studied in order to understand OCB comprehensively. In this research, both benefactor OCB-I and beneficiary OCB-I are explained and investigated.

There have been two unpublished studies that attempted to examine the beneficiary side of OCB (Che, 2012; Che, 2015). Che (2012) defined the reception of OCB as receiving OCB-I and getting help from other members at work. Although the definition indicated sources of OCB-I, it did not reflect OCB characteristics much (i.e., behaviors and performance). Therefore, in the current research, the reception of OCB-I is defined with the emphasis on OCB-I characteristics (i.e., behaviors and performance), using Organ's (1997) revised OCB definition. The reception of OCB-I is defined as being the beneficiary of organizational citizenship behaviors and performance of others in the workplace where task performance takes place. In addition, because

this study examines possible individual profiles, the benefactor of OCB-I and the beneficiary of OCB-I are defined. In particular, benefactors of OCB-I are defined as providers of OCB-I who benefit the work environment where task performance takes place, while beneficiaries of OCB-I are those who receive the organizational citizenship behaviors of others in the workplace where task performance occurs. Benefactor OCB-I facilitates improved performance of other members in the workplace. An example of benefactor OCB-I is “I take time to listen to coworkers’ problems and worries” (Settoon & Mossholder, 2002). Beneficiary OCB-I increases the resources of the beneficiary. An example of beneficiary OCB-I is “Coworkers take time to listen to my problems and worries.” This new definition reflects OCB characteristics (i.e., behaviors and performance) and echoes Organ’s (1997) OCB definition.

Che (2012) argued that the reception of OCB is a form of social support. The reasoning was that the reception of OCB produces benefits to its recipient based on social relationships as social support does. Also, the reception of OCB is not necessarily included in one’s formal job description as social support is not. While the reception of OCB can be considered a form of social support, it is important to denote how it is different from the ways in which social support is typically operationalized. By definition, the reception of OCB is conceptualized based on concrete behaviors that are provided to the recipient by others (e.g., “Coworkers compliment me when I succeed at work.”); on the other hand, social support is typically captured based on the recipient’s general perceptions of support provided by others (e.g., “The extent to which your subordinates have trust and confidence in you”; Caplan, Cobb, French, Harrison, & Pinneau, 1975). Although few social support scales ask about specific behaviors (e.g., one item in Haynes, Wall, Bolden, Stride, and Rick’s (1999) leader support scale; “Your immediate supervisor offers new ideas for solving job-related problems”), most social support scales measure general

opinions and perceptions of support to reflect the definition of social support, “information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations” (Cobb, 1976, p. 300). Based on the behavior aspect of the reception of OCB and the perception aspect of social support, the reception of OCB seems to be more countable, objective, specific, and concrete, while social support appears to be more perceptive, subjective, comprehensive, and abstract. Therefore, in this paper, I consider the reception of OCB as a specific form (i.e., behavior and performance aspects) of social support.

Person-Centered Approach in Benefactor OCB-I and Beneficiary OCB-I

Although benefactor OCB-I and beneficiary OCB-I are separate constructs, they are not likely to be exclusively performed within individuals, but rather interactively performed. In other words, individuals may be involved in both, either, or neither of these types of OCB-I. In order to account for these possibilities, a person-centered approach should be adopted over a variable-centered approach (Craig & Smith, 2000). A person-centered approach allows researchers to investigate a combination of multiple variables within individuals and complex interactions among the variables (Meyer & Morin, 2016). In particular, a latent profile analysis (LPA) has been recognized as the most adaptable and applicable technique for person-centered research (Meyer & Morin, 2016). Therefore, LPA was adopted in this research. As one type of mixture model, LPA identifies categorical latent subgroups based on multiple indicators, and the latent subgroups are called latent profiles (Lubke & Muthén, 2005). In LPA, finding the optimal number of latent profiles is challenging. Previous researchers recommended that the optimal number of latent profiles should be determined based on theory, substantive understanding, a satisfactory statistical solution in terms of convergence and variance estimates, and meaningful relations with covariates (Marsh, Lüdtke, Trautwein, & Morin, 2009; Morin, Vandenberghe,

Boudrias, Madore, Morizot, & Tremblay, 2011). In order to successfully identify the optimal number of profile groups of benefactor OCB-I and beneficiary OCB-I, theoretical frameworks and substantive concepts in OCB should be considered, first. Below, I introduce theories and substantive concepts of OCB.

Theoretical Models of OCB

In the OCB literature, three theories have been prevalently used in order to explain OCB phenomena. The three theories are (1) social exchange theory, (2) conservation of resources theory, and (3) equity theory. In this section, I explain general descriptions of the three theories and their connections with OCB.

Social Exchange Theory¹

Social exchange theory stemmed from various disciplines such as economics (Thibaut & Kelley, 1959), anthropology (Firth, 1967), sociology (Blau, 1964), and social psychology (Homans, 1958). The basic premise of social exchange theory is that people who receive a favor or resources from others tend to feel an obligation to reciprocate the favor or the resources (Emerson, 1976). Also, people who offer a favor or resources tend to have an expectation of receiving some return in the future.

Social exchange theory is largely governed by reciprocity rules and negotiated rules (Cropanzano & Mitchell, 2005). Reciprocity rules state that when people receive a favor, they should reciprocate that favor. Reciprocity rules are shaped by society although individuals have different levels of reciprocity orientation. In order for reciprocity rules to happen, the relationship between the benefactor and the beneficiary should be interdependent. Negotiated rules state that people more explicitly negotiate their reciprocal exchanges. For example,

¹ This review was largely retrieved from Cropanzano and Mitchell's (2005) paper.

employees negotiate work responsibilities with other team members. Molm (2000, 2003) showed that work relationships were better when reciprocity was used rather than negotiations. Also, reciprocity was more strongly associated with trust and commitment toward others than negotiations (Molm, Takahashi, & Peterson, 2000).

According to Foa and Foa (1974, 1980), people exchange six types of resources: money, goods, status, love, information, and services. These resources can be differentiated into two dimensions: particularism and concreteness. Particularism indicates that the value of the resource depends on its source. For example, love has a high level of particularism, whereas money has relatively a low degree of particularism. Concreteness is defined as the extent to which the resource is tangible and specific. Some resources are concrete, while other resources are symbolic. Foa and Foa (1974, 1980) further postulated that when resources are more particularistic and more symbolic, the social exchange tends to be more long-term.

Interpersonal relationships are an important aspect of social exchange theory. Interpersonal relationships influence the quality and the frequency of exchanges (e.g., Uhl-Bien, Graen, & Scandura, 2000). Also, high quality and frequent exchanges can foster good interpersonal relationships (e.g., Graen & Uhl-Bein, 1995). When some work antecedents formulate interpersonal relations, they are called social exchange relationships (Cropanzano, Byrne, Bobocel, & Rupp, 2001). Employees can have multiple social exchange relationships with different members in the workplace such as coworkers, supervisors, the organization, and customers (e.g., Cropanzano & Mitchell, 2005; Deckop, Cirka, & Andersson, 2003; Liden, Sparrowe, & Wayne, 1997; Moorman, Blakely, & Niehoff, 1998; Sheth, 1996). When employees receive resources from a specific source, they tend to reciprocate the resources to the specific source based on their social exchange relationship (Malatesta, 1995; Masterson, Lewis,

Goldman, & Taylor, 2000). In other words, they tend to match their assistance toward the specific source they have a social exchange relationship with.

Some researchers have attempted to explain OCB performance using social exchange theory (e.g., Deluga, 1994; Konovsky & Pugh, 1994; Shore & Wayne, 1993). For example, Shore and Wayne (1993) showed the significant relationship between perceived organizational support and OCB. They argued that employees who perceived more organizational support might reciprocate the support by performing more OCB. Deluga (1994) illustrated the relationship between leader-member exchange and OCB using social exchange theory. Similarly, Konovsky and Pugh (1994) found that trust in supervisor significantly predicted OCB. They used social exchange theory to explain the findings.

Conservation of Resources Theory

The basic promise of conservation of resources theory is that people have limited personal resources (e.g., objects, energies, conditions, and personal characteristics), and strong motivation to conserve, gain, and invest resources (Hobfoll, 1988; 1989; 2001; 2011). Specifically, when people perceive possible or actual resource losses, threats, or depletion, they experience anxiety and stress (i.e., primary of resource loss). In this situation, people usually attempt to reduce resource losses, threats, or depletion. However, if anxiety and stress persist, people may experience burnout or other negative health outcomes (e.g., Lee & Ashforth, 1996; Wright & Bonett, 1997). When employees show burnout and negative health outcomes, they tend to be more stringent in their resource investment due to the depleted resources (e.g., Baltes, 1997; Baltes & Baltes, 1990). On the other hand, when people obtain personal resources, they tend to show a low level of stress and positive health outcomes (e.g., Bakker, Schaufeli, Leiter, & Taris, 2008). Also, they are more likely to invest additional resources for future gains (i.e.,

resource investment; Hobfoll, 2001, 2011). However, when employees who invest resources for future gains do not return these resources, they show stress and negative health outcomes.

In the OCB literature, performing OCB is understood as an investment from additional resources (e.g., Saks, 2006; Salanova, Agut, & Peiró, 2005). Employees who have additional resources are thought to perform OCB in order to invest resources for future returns.

Equity Theory

Equity theory stipulates that employees evaluate their inputs and outputs, compare the ratio to other employees' ratios, and perceive fairness (Adams, 1963). When employees perceive that the ratio of inputs and outputs is equivalent to other employees' ratios, they experience equity and perceive fairness (Adams, 1965). However, when the ratio is either higher or lower than other employees' ratios, employees perceive inequity and perceive unfairness. Specifically, when the ratio is higher than other employees' ratios, it is called positive inequity and leads to feeling guilt. On the other hand, when the ratio is lower than other employee's ratios, it is called negative inequity and leads to the feeling of anger. Employees who experience positive or negative inequity are usually motivated to decrease the emotional tensions by changing their actual inputs and outputs, other employees' inputs and outputs, or their cognitive mindset for the comparison.

Equity theory has been used to elucidate the relationship between organizational justice and OCB (e.g., Blakely, Andrews, & Moorman, 2005; Moorman, 1991; Organ & Ryan, 1995). Specifically, in equity theory, OCB has been considered as "an input to one's equity ratio" (Organ, 1988). When employees experience positive inequity, they tend to perform more OCB to increase their inputs. When employees experience negative inequity, they tend to decrease their OCB performance to reduce their inputs. Also, Organ (1988) illustrated that as a response to

inequity, changing OCB would be a safer option than changing formal in-role behaviors.

Although equity theory has been popularly adopted to explain the relationship between fairness and OCB, the explanation is limited to the realm of fairness.

Theoretical Limitations and Proposition

Although these theories have advanced the OCB literature, the theories emphasize the effects of situational influences (e.g., exchanging resources, spending or gaining resources, putting inputs and obtaining outputs), while neglecting personal tendencies and dispositions. Researchers have argued that OCB performance compared to task performance is strongly influenced by personality traits (Borman & Motowidlo, 1993; Motowidlo, Borman, & Schmit, 1997). Also, numerous empirical findings have demonstrated that personality factors relate to OCB (e.g., Podsakoff et al., 2000, for review). Hence, it is important to consider the effects of person factors in a theoretical model.

Recently, Grant (2013) proposed one theoretical model that explains social interaction (including helping behaviors) with the focus of person tendencies. The theory is called “three fundamental styles of social interaction” (Grant, 2013). According to the theory, people are differentiated into three groups based on their social interaction style (including helping behaviors). The three groups are givers, takers, and matchers. Givers are people who give more favors to others than they receive. Takers are people who get more favors from others than they give. Matchers are people who balance giving and taking. This model appears to be applicable to OCB.

Although the three groups seem comprehensive, I believe matchers can be further differentiated into high matchers and low matchers. I define high matchers as people who greatly give favors and greatly receive favors. Lower matchers refer to people who barely give favors

and barely receive favors. High matchers are likely to have more frequent social exchanges and a more number of social exchange relationships than low matchers. Based on this framework, I propose that there will be four possible profile groups associated with giving and receiving OCB-I: (1) vigorous, (2) sacrificing, (3) selfish, and (4) passive OCB-I groups (see Table 1). First, the vigorous OCB-I group actively engages in both benefactor OCB-I and beneficiary OCB-I (high OCB-I giving and high OCB-I receiving). Second, the sacrificing OCB-I group actively performs benefactor OCB-I, however, not necessarily receives beneficiary OCB-I (high OCB-I giving but low OCB-I receiving). Third, the selfish OCB-I group actively receives beneficiary OCB-I; however, the group does not necessarily perform benefactor OCB-I (low OCB-I giving but high OCB-I receiving). Lastly, the passive OCB-I group hardly shows benefactor OCB-I or beneficiary OCB-I (low OCB-I giving and low OCB-I receiving).

Hypothesis 1: Four distinct latent profiles of benefactor OCB-I and beneficiary OCB-I are identified.

Table 1. Four Possible Profiles of Benefactor OCB-I and Beneficiary OCB-I

	Benefactor OCB-I (Giving OCB-I)	Beneficiary OCB-I (Receiving OCB-I)
(1) Vigorous OCB-I group	High	High
(2) Sacrificing OCB-I group	High	Low
(3) Selfish OCB-I group	Low	High
(4) Passive OCB-I group	Low	Low

Note. OCB-I = Organizational citizenship behaviors toward individuals.

In addition, I investigated the extent that theoretical antecedent variables relate to the latent profile groups, and how the latent profile groups are associated with different outcomes. I selected specific antecedent variables and outcome variables with theoretical reasons, empirical

evidence, and significant contributions in mind. In the following paragraphs, I provide the literature review of antecedents and outcomes of OCB, and explain how the specific antecedent variables and the specific outcome variables are chosen.

Empirical Studies in Antecedents and Outcomes of OCB

Various OCB theoretical antecedents and outcomes have been proposed and investigated. Specifically, OCB antecedents include demographic variables (e.g., gender), dispositional variables (e.g., positive affect), attitudinal variables (e.g., job satisfaction), role perception variables (e.g., role ambiguity), ability variables (e.g., knowledge), task characteristic variables (e.g. task feedback), work relationship variables (e.g., leader support), and organizational variables (e.g., organizational formalization; e.g., Organ et al., 2006; Podsakoff et al., 2000; Spitzmuller et al., 2008). OCB outcomes are mainly differentiated into individual-level outcomes and organizational-level outcomes. Individual-level outcomes consist of job performance rating, reward allocation decision, reward recommendations, actual rewards, turnover intentions, actual turnover, and absenteeism; organizational-level outcomes include unit performance, unit efficiency, unit productivity, unit costs, unit turnover, and customer satisfaction (Podsakoff et al., 2009, for review).

Although it would be ideal to investigate all of these antecedent and outcome variables in this research, it is impractical given that having a large number of auxiliary variables (i.e., antecedents or outcomes) is likely to lead to model misspecification in LPA. Therefore, I selected a set of variables thought to effectively differentiate membership profiles. To be specific, three dispositional variables (i.e., conscientiousness, positive affect, and other-oriented empathy), one task characteristic variable (i.e., task interdependence), and one attitudinal

variable (i.e., job satisfaction) were selected as antecedent variables. Also, two strain variables (i.e., physical strain and psychological strain) were included as outcome variables.

Antecedents: Dispositional Variables

Different from task performance, OCB is more strongly affected by dispositional traits (Borman & Motowidlo, 1993; Motowidlo, Borman, & Schmit, 1997). Also, previous empirical studies and meta-analysis studies revealed that dispositional variables are important antecedents of OCB (e.g., Chiaburu, Oh, Berry, Li, & Gardner, 2011; Kaplan, Bradley, Luchman, & Haynes, 2009; Organ & Ryan, 1995). Moreover, the theoretical proposition in this research takes a person-centered approach. Not to mention, dispositional variables that reflect person characteristics would significantly contribute to this person-centered theoretical proposition. For these reasons, I included dispositional variables. Specifically, based on previous meta-analytic studies, conscientiousness, positive affect, and other-oriented empathy were included as dispositional predictors. In Chiaburu et al.'s (2011) meta-analysis study, conscientiousness showed the strongest effect size on OCB-I among the five personality factors (i.e., extraversion, conscientiousness, agreeableness, neuroticism, and openness to new experience). Kaplan et al.'s (2009) meta-analysis study revealed that positive affect showed the largest effect size on OCB-I among attitudinal dispositional variables. Lastly, Borman, Penner, Allen and Motowidlo's (2001) meta-analysis study found other-concerned empathy was most strongly related to citizenship performance. Hence, conscientiousness, positive affect, and other-oriented empathy were chosen as representatives of dispositional variables.

Conscientiousness is defined as a tendency to be dutiful, punctual, competent, organized, self-disciplined, achievement-oriented, deliberate, and order-oriented (Costa & McCrae, 1992; Goldberg, 1993). People who have a high level of conscientiousness tend to show a high level of

job performance (Barrick, Mount, & Judge, 2001). Because of their outstanding job performance and competency, they may be more frequently asked than their peers to help other employees. In fact, Battistoni and Colladon (2014) found that employees tend to seek advice from coworkers who are highly conscientious. Therefore, people with a high level of conscientiousness would have more chances to help others and perform more OCB-I than people with a low level of conscientiousness. Therefore, I expect that conscientiousness will significantly differentiate employees who perform a high level of benefactor OCB-I from those who perform a low level of benefactor OCB-I, and contribute to the OCB-I profile group identification.

With regard to the relationship between conscientiousness and beneficiary OCB-I, no empirical studies have been conducted. However, I anticipate that people who are highly conscientious will receive a high level of OCB-I. According to the definition of conscientiousness, people having a high level of conscientiousness are generally achievement-oriented and punctual. In order to successfully complete their work on time, they are more likely to ask for OCB-I from their coworkers or others and receive more OCB-I as a result (e.g., Mueller & Kamder, 2011) than people with a low level of conscientiousness. Moreover, people with a high level of conscientiousness probably performed more OCB-I for their coworkers or others in the past than people with a low level of conscientiousness (e.g., Chiaburu et al., 2011); therefore, they are more likely to receive OCB-I in return when they ask for it than people with a low level of conscientiousness according to reciprocity rules in social exchange theory (Cropanzano & Mitchell, 2005). Hence, I anticipate that conscientiousness will significantly differentiate employees who gain a high level of beneficiary OCB-I and a low level of benefactor OCB-I, and contribute to the OCB-I profile group identification.

In sum, a high level of trait conscientiousness will predict a high level of benefactor OCB-I and a high level of beneficiary OCB-I. Therefore, I hypothesize that trait conscientiousness will most strongly predict the vigorous OCB-I group. Then, I expect trait conscientiousness will next most strongly predict the sacrificing OCB-I group instead of the selfish OCB-I group. Although high conscientious employees are expected to engage in both giving and receiving OCB-I in general, they are more likely to give OCB-I than to receive OCB-I when they interact with non-conscientious individuals. For example, high conscientious employees may ask for help from other employees as a return of their past OCB-I. However, other employees may not be as conscientious as them and they may either forget to help or fail to help. Therefore, they are more likely to be classified into the sacrificing OCB-I group than the selfish OCB-I group. Lastly, trait conscientiousness will least strongly predict the passive OCB-I group.

Hypothesis 2: Trait conscientiousness significantly predicts benefactor and beneficiary OCB-I profiles. Specifically, high trait conscientiousness most strongly relates to the profile groups in the following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (3) the selfish OCB-I group, and (4) the passive OCB-I group.

The next dispositional antecedent is positive affect, which is defined as the degree to which a person experiences energetic, attentive, and excited feelings (Watson, Clark, & Tellegen, 1988). In alignment with the resource investment argument in conservation of resources theory (Hobfoll, 2001, 2011), Kaplan et al. (2009) hypothesized that people who have a high level of positive affect would perform more OCB because they have mental resources available due to possessing effective stress-coping strategies and strong perceived control (Bowman & Stern, 1995; Judge, Thoresen, Pucik, & Welbourne, 1999). Kaplan et al.'s (2009)

meta-analytic examination showed that positive affect was positively associated with OCB ($\rho = .23$). Thus, I expect that positive affect will significantly differentiate employees who provide a high level of OCB-I from those who provide a low level of OCB-I, and contribute to the OCB-I profile group identification.

For the beneficiary side of OCB-I, positive affect has not been empirically studied. I anticipate that people who have a higher level of positive affect will receive OCB-I more than people who have a lower level of positive affect. People who possess high positive affect tend to show more gratitude than people who have low positive affect (McCullough, Tsang, & Emmons, 2004). Therefore, people with higher positive affect would show stronger gratitude when they receive OCB-I from their coworkers or others. Consequently, their coworkers or others who offered OCB-I would receive positive psychological outcomes such as positive mood from the gratitude expression (Carlson, Charlin, & Miller, 1988), and with the positive psychological resources, they would continuously perform OCB-I for the people with high positive affect as resource investment according to conservation of resources theory (Hobfoll, 2001, 2011). Therefore, I anticipate positive affect will significantly differentiate employees who receive more OCB-I from those who receive less OCB-I and contribute to the OCB-I profile group identification.

In sum, a high level of positive affect will predict a high level of benefactor OCB-I and a high level of beneficiary OCB-I. Therefore, I hypothesize that positive affect will most strongly predict the vigorous OCB-I group. Then, positive affect will next most strongly predict the sacrificing OCB-I group and the selfish OCB-I group. Lastly, positive affect will least strongly predict the passive OCB-I group.

Hypothesis 3: Positive affect significantly predicts benefactor and beneficiary OCB-I profiles. Specifically, high positive affect most strongly predicts different profile groups in this following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2) the selfish OCB-I group, and (3) the passive OCB-I group.

The last personality predictor is other-oriented empathy, which refers to a predisposition to have both cognitive and affective empathy for others, care about the welfare of others, and feel responsibility for their welfare (Penner et al., 1995). Some researchers have argued that other-oriented empathy stimulates an egoistic instrumental response and leads people to engage in helping behaviors in order to gain rewards, avoid punishments, or decrease their own aversive feelings; other researchers have claimed that other-oriented empathy induces a genuine altruistic response and leads people to engage in helping behaviors in order to reduce the distress of people in need (Batson & Shaw, 1991). Regardless of motivation, various studies have demonstrated that people with other-oriented empathy tend to help others (e.g., Coke, Batson, & McDavis, 1978). In the organizational context, other-oriented empathy has been found to be significantly associated with OCB. In fact, Borman et al.'s (2001) meta-analytic study found that other-oriented empathy was most significantly linked to citizenship performance ($\rho = .28$) compared to other personality constructs.

Although other-oriented empathy has five sub-dimensions (social responsibility, empathic concern, perspective taking, other-oriented moral reasoning, and mutual concerns moral reasoning), two sub-dimensions (empathic concern and perspective taking) have been conventionally used as core measures of empathy (e.g., Joireman, Kamdar, Daniels, & Duell, 2006; Kamdar, McAllister, & Turban, 2006). Following previous studies, this study also included empathic concern and perspective taking as measures of other-oriented empathy.

Empathic concern is defined as a predisposition to have concern for the welfare of others who are in an unfortunate situation, and often accompanies with other-oriented emotions such as sympathy and compassion (Davis, 1980). Perspective taking indicates a tendency to perceive a situation with another person's viewpoint (Davis, 1980). Empirical studies have demonstrated that empathic concern and perspective taking are also linked to OCB. For example, Joireman et al. (2006) found that empathic concern and perspective taking were significantly associated with OCB. Similarly, Kamdar et al. (2006) showed that empathic concern and perspective taking were associated with interpersonal helping which is a component of OCB-I. Therefore, I hypothesize that other-oriented empathy, specifically empathic concern and perspective taking, will significantly differentiate employees who perform a high level of benefactor OCB-I from those who perform a low level of benefactor OCB-I, and contribute to the OCB-I profile group identification.

For the beneficiary side of OCB, the relationship between other-oriented empathy and beneficiary OCB has not been empirically tested. I anticipate that people who have a high level of other-oriented empathy will receive OCB-I less than people who have a low level of other-oriented empathy. People with high other-oriented empathy tend to consider others and others' situation first before their own. Therefore, even when they need help, they may be hesitant to accept or seek help especially when other people seem to be busy or stressed. With the less frequent help-seeking behaviors, they are likely to receive less OCB-I than people who have a low level of other-oriented empathy. Therefore, I anticipate that other-oriented empathy will significantly differentiate employees who gain a high level of beneficiary OCB-I and a low level of beneficiary OCB-I, and contribute to the OCB-I profile group identification.

In sum, a high level of other-oriented empathy will predict a high level of benefactor OCB-I and a low level of beneficiary OCB-I. Therefore, I hypothesize that other-oriented empathy will most strongly predict the sacrificing OCB-I group. Then, other-oriented empathy will next most strongly predict the vigorous OCB-I group and the passive OCB-I group. Lastly, other-oriented empathy will least strongly predict the selfish OCB-I group.

Hypothesis 4: Other-oriented empathy significantly predicts benefactor and beneficiary OCB-I profiles. Specifically, high other-oriented empathy most strongly relates to the different profile groups in this following order: (1) the sacrificing OCB-I group, (2) the vigorous OCB-I group, (2) the passive OCB-I group, and (3) the selfish OCB-I group.

Antecedent: Task Characteristic Variable

Job characteristics theory (JCT, Hackman & Oldham, 1975) suggests that job characteristics are significant predictors of job performance. Not surprisingly, OCB, which is one type of job performance, is also related to job characteristics (e.g., Eatough, Chang, & Johnson, 2011). Among various job characteristics, I selected task interdependence as a predictor of the benefactor and beneficiary OCB-I profiles because this variable is likely to affect social interactions in the workplace. Social interactions are a pivotal aspect of OCB (e.g., Konovsky, & Pugh, 1994). Without social interactions, OCB is unlikely to happen. Because task interdependence is likely to increase social interactions in the workplace, it is expected to increase opportunities to perform OCB-I and receive OCB-I.

Task interdependence refers to the extent that task completion requires interactions with other people in the workplace (Shea & Guzzo, 1987). When a high level of task interdependence

exists, frequent social interactions are likely to happen (e.g., Daft & Lengel, 1986). With more frequent social interactions, employees are more likely to have opportunities to give and receive OCB-I. Empirical studies have demonstrated that task interdependence is positively associated with performing OCB (e.g., Bachrach, Powell, Collins, & Richey, 2006). Thus, I expect that task interdependence will significantly differentiate employees who perform a high level of benefactor OCB-I from those who perform a low level of benefactor OCB-I, and contribute to the OCB-I profile group identification.

As for beneficiary OCB, the relationship between task interdependence and beneficiary OCB has not been empirically tested. However, I anticipate that people who have a high level of task interdependence will receive OCB-I more than people who have a low level of task interdependence. Again, task interdependence would increase social interactions in the workplace and in turn, increase opportunities to receive OCB-I. Therefore, I anticipate that task interdependence will significantly differentiate employees who gain a high level of beneficiary OCB-I and a low level of beneficiary OCB-I, and contribute to the OCB-I profile group identification.

In sum, a high level of task interdependence will predict a high level of benefactor OCB-I and a high level of beneficiary OCB-I. Therefore, I hypothesize that task interdependence will most strongly predict the vigorous OCB-I group. Then, task interdependence will next most strongly predict the sacrificing OCB-I group and the selfish OCB-I group. Lastly, task interdependence will least strongly predict the passive OCB-I group.

Hypothesis 5: Task interdependence significantly predicts benefactor and beneficiary OCB-I profiles. Specifically, high task interdependence most strongly predicts different

profile groups in this following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2) the selfish OCB-I group, and (3) the passive OCB-I group.

Antecedent: Job Attitude Variable

According to theory of planned behavior (Ajzen, 1991), attitudes are significant antecedents of behaviors. Therefore, OCB which is a behavior is likely to be predicted by attitudinal variables. In the OCB literature, job attitudes have been identified as critical predictors of OCB, and multiple meta-analytic studies have revealed significant relationships between job attitudes and OCB (e.g., LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). Specifically, job satisfaction has been most popularly examined as a predictor of OCB and showed the strongest relationship with OCB in comparison to other attitudinal variables. Hence, I selected job satisfaction as an antecedent of OCB-I profile groups.

Job satisfaction refers to employees' attitudes toward their job (Beer, 1964). According to social exchange theory (Blau, 1964), people look for opportunities to reciprocate favors to those who help them. Satisfied employees tend to appreciate the efforts and favors of the organization, and attempt to reciprocate the efforts and favors by performing OCB (Bateman & Organ, 1983). LePine et al.'s (2002) meta-analytic study found that job satisfaction is significantly associated with OCB ($\rho = .24$). Thus, I expect that job satisfaction will significantly differentiate employees who perform a high level of benefactor OCB-I from those who perform a low level of benefactor OCB-I, and contribute to the OCB-I profile group identification.

With regard to beneficiary OCB, satisfied workers are likely to have more positive emotional resources than dissatisfied workers (Fisher, 2000). Due to the sufficient positive emotional resources that satisfied workers have, they would ask for more help (Grodal, Nelson, & Siino, 2015) without the fear of their self-esteem being attacked (Nadler & Jeffrey, 1986) or

without the fear of presenting themselves as incompetent (Ashford & Cummings, 1983). With more help-seeking behaviors, they would receive more help (Flynn, Reagans, Amanatullah, & Ames, 2006). Empirically, Che (2012) found that job satisfaction was positively related to receiving OCB-I ($r = .26, p < .01$). Therefore, I anticipate that job satisfaction will significantly differentiate employees who gain a high level of beneficiary OCB-I and a low level of beneficiary OCB-I, and contribute to the OCB-I profile group identification.

In sum, a high level of job satisfaction will predict a high level of benefactor OCB-I and a high level of beneficiary OCB-I. Therefore, I hypothesize that job satisfaction will most strongly predict the vigorous OCB-I group. Then, the sacrificing OCB-I group and the selfish OCB-I group will be next strongly predicted. Lastly, the passive OCB-I group will be least strongly predicted.

Hypothesis 6: Job satisfaction significantly predicts benefactor and beneficiary OCB-I profiles. Specifically, high job satisfaction most strongly relates to the different profile groups in this following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2) the selfish OCB-I group, and (3) the passive OCB-I group.

Taken together, I expect that three dispositional variables (conscientiousness, positive affect, and other-oriented empathy), one task characteristic variable (task interdependence), and one job attitude variable (job satisfaction) will predict distinct OCB-I profile groups.

Not only predictors but also outcomes are expected to be different between distinct OCB-I profile groups. Specifically, in this study, health outcomes (physical and psychological strains) were investigated in relation to the distinct OCB-I profile groups.

Health Outcomes

Health outcomes were selected with the intention of examining the predictive explanatory power of existing theories. Although both conservation of resources theory and equity theory are used to explain OCB phenomena, the theories seem to have different viewpoints when it comes to the prediction of health outcomes. To be specific, conservation of resources theory infers that people who receive more resources than give resources would show the most positive health outcomes, while equity theory suggests that people who give and receive the same amount of resources would show the most positive health outcomes. Therefore, this study attempted to investigate which theory is likely to be more accurate in terms of health consequences from benefactor OCB-I and beneficiary OCB-I.

In this research, physical and psychological strains are operationalized as health outcomes. These two health outcome variables have been frequently used as employee health indicators (e.g., Lang, Thomas, Bliese, & Adler, 2007), and have a relatively comprehensive scope compared to other narrow health symptoms (e.g., back pain, anxiety). Also, given that these physical and psychological strains have been more popularly investigated with OCB than other strain variables, I include physical and psychological strains as health outcomes of OCB-I.

Strain is defined as an outcome from stressors and resources (Decker & Borgen, 1993) and as a detrimental response to stressors (Jex, 1998). Physical strain refers to physical symptoms such as headache, muscle pain, and backache (Ayyagari, Grover, & Purvis, 2011). Psychological strain refers to mental symptoms such as fatigue, burnout, and emotional exhaustion (Ayyagari et al., 2011). Previous studies considered physical and psychological strains as antecedents of OCB (e.g., Bakker, Demerouti, & Verbeke, 2004; Halbesleben & Bowler, 2007). However, more recent studies started viewing physical and psychological strains

as consequences of OCB (e.g., Bolino, Hsiung, Harvey, & LePine, 2015; Lanaj, Johnson, & Wang, 2016; Koopman, Lanaj, & Scott, 2016). Following this recent framework, I considered physical and psychological strains as outcomes of OCB-I. Chang, Rosen, and Levy (2009) conducted a meta-analysis study and found that OCB-I ($\rho = -.23$) was linked to strain. However, the strain was not differentiated into physical strain and psychological strain. Ford, Cerasoli, Higgins, and Decesare (2011) conducted a meta-analytic study about the relationship between contextual performance and health outcomes including physical strain and psychological strain. Given that contextual performance is conceptually similar to OCB, their meta-analytic study was used to provide empirical evidence that OCB is linked to physical and psychological strain outcomes. Ford et al. (2011) found that contextual performance was negatively associated with physical strain ($\rho = -.10$) and psychological strain ($\rho = -.18$). Therefore, I expect that different OCB-I profile groups will show different levels of physical strain and psychological strain.

When it comes to beneficiary OCB-I, beneficiary OCB-I is likely to increase job resources of employees, and in turn, provide positive physical and psychological health outcomes according to conservation of resources theory (Hobfoll, 1989, 1998, 2001). In Che's (2015) study, within-person correlations revealed that the reception of OCB-I was linked to physical symptoms ($r = .14, p < .01$) and to burnout ($r = .17, p < .01$). However, between-person correlations indicated the reception of OCB-I was not significantly related to physical symptoms ($r = .04, p > .05$) or to burnout ($r = -.11, p > .05$). These non-significant results might be due to the small sample size ($N = 71$). Despite this incongruent empirical evidence, based on the theoretical argument above, I expect that different OCB-I profile groups will show different levels of physical strain and psychological strain.

The question about which group is likely to show the most optimal health outcomes is debatable. According to conservation of resources theory, individuals receiving more resources than giving resources may demonstrate the most positive health outcomes. Individuals receiving more resources than giving resources have extra resources, and the extra resources usually help them handle stress (Bakker & Demerouti, 2007). Consequently, those individuals are likely to show the most positive health outcomes. Following this approach, selfish OCB-I members who receive more OCB-I than they give OCB-I are expected to show the best physical and psychological health. On the contrary, individuals giving more resources than receiving resources would suffer from lack of resources and the lack of resources would make them more vulnerable to stress (Bakker & Demerouti, 2007). Therefore, they are likely to show the most negative health outcomes. Based on this logic, sacrificing OCB-I members who more give than receive OCB-I are expected to show the worst physical and psychological health.

However, equity theory suggests that people receiving more resources than giving resources may demonstrate negative health outcomes. When individuals receive more resources than give resources, they may experience the feeling of guilt and show negative health outcomes. Similarly, when individuals give more resources than receive resources, they may experience the feeling of anger and show negative health outcomes. Equity theory infers that people who equally give and receive would show the best health outcomes. Therefore, vigorous OCB-I members and passive OCB-I members who give and receive the equivalent amount of OCB-I will show positive physical and psychological health outcomes. On the contrary, selfish OCB-I members and sacrificing OCB-I members who give and receive the different amount of OCB-I will show negative physical and psychological health outcomes.

In sum, based on the perspective of conservation of resources theory, the selfish OCB-I group that has low benefactor OCB-I and high beneficiary OCB-I will show the lowest physical and psychological strains. Then, the vigorous OCB-I group and the passive OCB-I group will show moderate physical and psychological strains. The sacrificing OCB-I group will show the highest physical and psychological strains.

With the approach of equity theory, the vigorous OCB-I group and the passive OCB-I group that show the equivalent amount of benefactor OCB-I and beneficiary OCB-I will report the lowest levels of physical and psychological strains. However, the selfish OCB-I group and the sacrificing OCB-I group that show the different amount of benefactor OCB-I and beneficiary OCB-I will report the highest levels of physical and psychological strains.

Hypothesis 7a: Different benefactor and beneficiary OCB-I profile groups show different levels of physical strain. Specifically, based on conservation of resources theory, the selfish OCB-I group shows the lowest level of physical strain; the vigorous OCB-I group and the passive OCB-I group show a moderate level of physical strain, and the sacrificing OCB-I group shows the highest level of physical strain.

Hypothesis 7b: Different benefactor and beneficiary OCB-I profile groups show different levels of physical strain. Specifically, based on equity theory, the vigorous OCB-I group and the passive OCB-I group show the lowest level of physical strain; the sacrificing OCB-I group and the selfish OCB-I group show the highest level of physical strain.

Hypothesis 8a: Different benefactor and beneficiary OCB-I profile groups show different levels of psychological strain. Specifically, based on conservation of resources theory, the selfish OCB-I group shows the lowest level of psychological strain; the vigorous OCB-I

group and the passive OCB-I group show a moderate level of psychological strain, and the sacrificing OCB-I group shows the highest level of psychological strain.

Hypothesis 8b: Different benefactor and beneficiary OCB-I profile groups show different levels of physical strain. Specifically, based on equity theory, the vigorous OCB-I group and the passive OCB-I group show the lowest level of psychological strain; the sacrificing OCB-I group and the selfish OCB-I group show the highest level of psychological strain.

In order to satisfy these objectives and test hypotheses, two studies were conducted.

Study 1 investigated the hypotheses using cross-sectional data, and Study 2 examined the hypotheses using multiple waves of data. The data in Study 2 was based on three waves with one-week intervals. One-week intervals were specifically chosen because one-week intervals would best capture the effects of the benefactor OCB-I and beneficiary OCB-I. If the intervals were too short (e.g., one-day intervals), participants might not have enough opportunities to perform OCB-I or receive OCB-I. If the intervals were too long (e.g., one-month intervals), it would be challenging to argue that outcomes result from the proposed antecedents. One-week intervals seem to be long enough for employees to have chances to perform OCB-I and receive OCB-I, and short enough to establish links between the proposed variables. For these reasons, one-week intervals were selected. The first wave survey measured demographic information and the selected predictors. The second wave survey measured the benefactor of OCB-I and the beneficiary of OCB-I. The third wave survey measured employee health outcomes. A summarized model is presented in Figure 1.

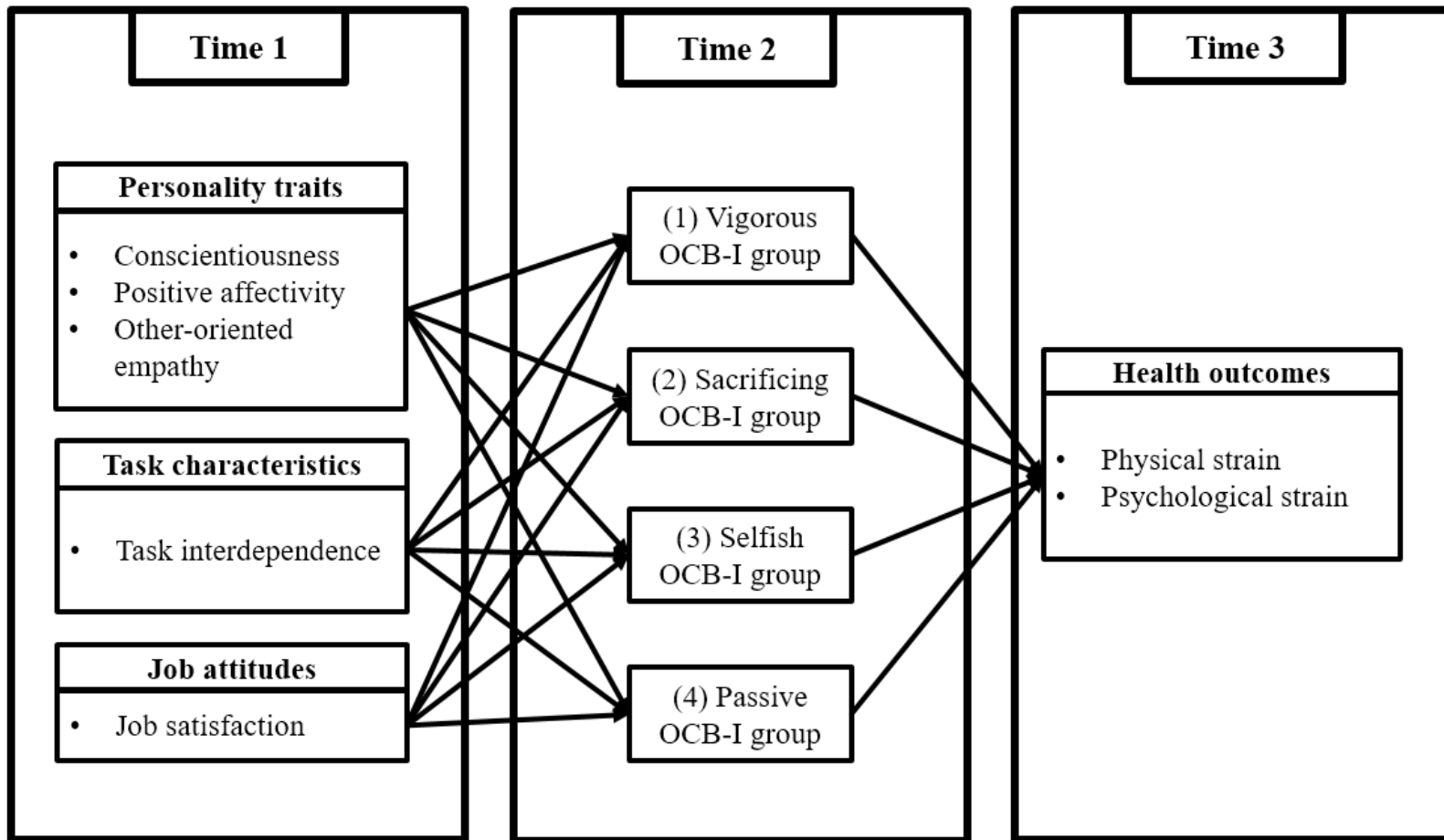


Figure 1. A graphical summary of the latent profile relationships.

CHAPTER TWO: STUDY 1 (CROSS-SECTIONAL STUDY)

Method (Study 1)

Participants and Procedures

Data were collected through Mechanical Turk (MTurk). In order to be eligible, participants had to meet the following criteria: (1) work at least 30 hours per week in a job outside of MTurk, (2) be between 18 and 65 years old, (3) currently reside and work in the United States, and (4) work with other people in the workplace. The fourth criterion was included to ensure that participants worked in an environment where benefactor OCB-I and beneficiary OCB-I would be possible. Participants who successfully filled out the survey received \$1.00 as compensation.

Initially, 940 participants completed the survey. Out of the 940 participants, 15 did not meet the eligibility criteria, and 2 took the survey twice. In addition, extremely fast responses were deleted given that they are likely to undermine the quality of data and contaminate results (DeSimone, Harms, & DeSimone, 2015). Based on Huang, Curran, Keeney, Poposki, and DeShon's (2012) suggestion, I removed "extremely fast responses," operationalized as those that were completed faster than 2 seconds per item. A total of 34 responses were removed and the final sample included 815 employees.

Of the 815 employees, 55.1% were female and the average age was 36.84 years ($SD = 10.71$). In terms of participant race/ethnicity distribution, 76.6% were White, 8.1% were Black or African American, 7.2% were Asian/Pacific Islander, 5.9% were Hispanic or Latino, 0.9% were Native American or American Indian, and 1.3% were others. In regard to participant level of

education, 0.6% had some high school education but did not earn a diploma, 5.6% had a high school degree or an equivalent degree, 18.9% took some college credits but did not graduate, 3.7% received trade/technical/vocational training, 11.7% had an associate degree, 42.2% had a Bachelor's degree, 14.2% had a Master's degree, 1.6% had a professional degree, and 1.5% had a Doctorate degree. Participants worked in a variety of industries, such as healthcare (13.62%) and broadcasting (0.37%).

Measures

Table 2 presents descriptive statistic information for each variable, including Cronbach's alpha values. All alpha values were greater than .70. All specific items are provided in Appendix A.

Conscientiousness. Conscientiousness was measured with the short version of International Personality Item Pool inventory (IPIP) developed by Goldberg (1992). One example item was "I am always prepared." Participants responded to 10 items using a 5-point scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Positive Affect. Positive affect was measured using the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). One example item for positive affect was "Excited." Participants responded to 10 items using a 5-point scale that ranged from 1 (*very slightly or not at all*) to 5 (*extremely*).

Other-Oriented Empathy. Other-oriented empathy was assessed with four empathic concern items and five perspective-taking items from the short version of the Prosocial Personality Battery (Penner et al., 1995). One example item for empathic concern was "When I see someone being taken advantage of, I feel kind of protective towards them." One example item for perspective taking was "I sometimes try to understand my friends better by imagining

Table 2. Study 1: Descriptive Statistics of Study Variables

Variable	N	Mean	SD	α	Min	Max	Skewness	Kurtosis
Conscientiousness	815	3.89	.68	.88	2.00	5.00	-.36	-.55
Positive Affect	815	3.27	.82	.92	1.00	5.00	-.18	-.29
Other-oriented Empathy	815	3.72	.63	.84	1.00	5.00	-.46	.53
Task Interdependence	815	4.24	1.34	.84	1.00	7.00	-.23	-.66
Job Satisfaction	815	3.79	.95	.93	1.00	5.00	1.00	.81
Benefactor OCB-I	815	3.66	.67	.93	1.00	5.00	-.41	.89
Beneficiary OCB-I	815	3.27	.70	.94	1.00	5.00	-.02	.37
Physical Strain	815	2.08	.58	.86	1.00	3.92	.35	-.16
Psychological Strain	815	2.74	.71	.90	1.00	4.88	.16	-.05

Note. OCB-I = Organizational citizenship behaviors toward individuals.

how things look from their perspective.” Participants responded to the items using a 5-point scale that ranged from 1 (*never*) to 5 (*always*).

Task Interdependence. Task interdependence was measured using Van der Vegt, Emans, and Van de Vliert’s (2001) five-item scale. One example item was “I depend on my colleagues for the completion of my work.” Participants responded to the items using a 7-point scale that ranged from 1 (*highly disagree*) to 7 (*highly agree*).

Job Satisfaction. Job satisfaction was assessed with 3 items developed by Cammann, Fichman, Jenkins, and Klesh (1979). One example item was “In general, I like working at my job.” Participants responded to the items using a 5-point scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Benefactor Organizational Citizenship Behavior toward Individuals (Giving OCB-I). Benefactor organizational citizenship behavior toward individuals was measured with 14 OCB-I items developed by Settoon and Mossholder (2002). One example item was “I take time to listen to coworkers’ problems and worries.” Participants responded to the items using a 5-point scale that ranged from 1 (*never*) to 5 (*very frequently*).

Beneficiary Organizational Citizenship Behavior from Individuals (Receiving OCB-I). Beneficiary organizational citizenship behavior from individuals was measured with 14 items modified based on Settoon and Mossholder’s (2002) OCB-I measure (see Appendix A). One example item was “Coworkers take time to listen to my problems and worries.” Participants responded to the items using a 5-point scale that ranged from 1 (*never*) to 5 (*very frequently*).

Physical Strain. Physical strain was assessed with the 12-item scale developed by Larsen and Kasimatis (1991). One example item was “Upset stomach or nausea.” Participants responded to the items based on a 5-point scale that ranged from 1 (*never*) to 5 (*almost always*).

Psychological Strain. Psychological strain was assessed with 16 items from the Oldenburg Burnout Inventory (OLBI; Demerouti, Mostert, & Bakker, 2010). One example item was “There are days when I feel tired before I arrive at work.” Participants responded to the items based on a 5-point scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Attention Checks. In order to ensure that participants answered the survey items attentively, six attention check items were included. The six items were “Please indicate *sometimes* as a response option,” “Please indicate *often* as a response option,” “Please indicate *disagree* as a response option,” “Please indicate *never* as a response option,” “Please indicate *moderately important* as a response option,” and “Please indicate *often* as a response option.” When participants failed to endorse a correct answer in one of the six attention check items, their response was deleted.

Data Analyses

Latent Profile Analyses (LPA). Latent Profile Analyses (LPA) were performed using two variables (i.e., benefactor OCB-I, beneficiary OCB-I) in Mplus 7.4. In LPA, all variables were specified as continuous given that 5 or more point Likert scale variables have been considered as continuous variables by previous researchers (e.g., Beauducel & Herzberg, 2006; Dolan, 1994). A robust maximum likelihood (MLR) estimator was selected by default and 1-6 profile models were estimated. In order to obtain a true maximum likelihood instead of local maxima, 10,000 sets of random start values were specified with 1,000 iterations² (Hipp & Bauer, 2006; McLachlan & Peel, 2000).

² I obtained the same results with various sets of random start values and different numbers of iterations.

Given that the current research includes auxiliary variables such as antecedents and outcomes, the three-step approach of LPA was employed (Asparouhov & Muthén, 2014). This three-step approach surpasses the traditional pseudo-class approach of LPA because it is relatively robust from biases and less affected by the included auxiliary variables. In the three-step approach, the first step is to identify the most optimal number of profiles based on a model fit evaluation. The second step is to classify all samples into the identified profile groups. In this stage, the means of the benefactor OCB-I and the beneficiary OCB-I are compared across the identified profile groups. The final step is to examine the relationships between the included auxiliary variables and the identified latent profile groups. In this step, possible errors generated from the second step are handled (Wang & Hanges, 2011). Following Lanza, Tan, and Bray (2013) suggestion, I separately tested the relationships between the antecedents and the identified latent profiles and the relationships between the outcomes and the identified latent profiles. Specifically, the relationships between the antecedents and the latent profile memberships were tested using the R3STEP code and the relationships between the latent profile memberships and the outcomes were tested using the DCON code (Asparouhov & Muthén, 2014). The R3STEP code specifies auxiliary variables as antecedents and performs multinomial logistic regressions to examine the likelihood of each person being classified into one profile or another depending on the level of the included antecedent. The DCON code specifies auxiliary variables as outcomes and calculates the mean differences of each outcome across the identified profiles.

Results (Study 1)

Preliminary Analyses

As preliminary analyses, I checked the basic statistical assumptions of data: data normality, outliers, data missingness, linearity, and homoscedasticity. First, the data normality

assumption was checked based on descriptive statistics and histograms of all variables. Results revealed that the data satisfied the normality assumption given that all absolute values of skewness and kurtosis were less than 2 (George & Mallery, 2010) and the histograms were normally distributed. Second, no problematic outliers were identified based on the descriptive statistics, the frequencies, and the histograms. Third, all included variables showed less than 1% data missingness. Fourth, I tested the linearity assumption by reviewing the scatterplots between OCB-I measures and health outcomes. The scatterplots did not suggest non-linearity patterns. Lastly, homoscedasticity was assessed based on the regression scatterplots between the predicted values (X) and the residual values (Y). The variance of residuals at the predicted value appeared to be equal for each variable.

Correlations

Means, standard deviations, and intercorrelations for the study variables are presented in Table 3. The directions and the strengths of the correlations were relatively consistent with previous findings (e.g., conscientiousness and benefactor OCB-I, Chiaburu et al., 2011; job satisfaction and benefactor OCB-I, LePine et al., 2002). Also, no serious multicollinearity issues were found given that all correlation coefficient values between the predictor variables were less than .80 (Licht, 1995).

Latent Profile Analyses (LPA)

The optimal number of latent profiles was decided based on the following fit indices (Nylund, Asparouhov, & Muthen, 2007): Bayesian information criterion (BIC; Schwartz, 1978), sample-size adjusted BIC (SSBIC; Sclove, 1987), Akaike information criterion (AIC; Akaike, 1974), Entropy (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993), Lo-Mendell-Rubin adjusted likelihood ratio test (LMRT; Lo, Mendell, & Rubin, 2001), and bootstrapped likelihood

Table 3. Study 1: Means, Standard Deviations, and Intercorrelations Among Study Variables (N = 812-815)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	0.55	0.50												
2. Age	36.84	10.71	.00											
3. Education	5.20	1.65	.01	.05										
4. Conscientiousness	3.89	0.68	.00	.10**	-.03									
5. Positive Affect	3.27	0.82	-.04	.07	.05	.38**								
6. Other-oriented Empathy	3.72	0.63	.19**	.10**	.05	.20**	.30**							
7. Task Interdependence	4.24	1.34	-.02	.01	.13**	.02	.11**	.13**						
8. Job Satisfaction	3.79	0.95	.00	.08*	.05	.29**	.48**	.25**	.09**					
9. Benefactor OCB-I	3.66	0.67	.18**	.07*	-.01	.23**	.37**	.49**	.23**	.33**				
10. Beneficiary OCB-I	3.27	0.70	.11**	.01	.00	.21**	.38**	.35**	.24**	.34**	.66**			
11. Physical Strain	2.08	0.58	.20**	-.07*	-.04	-.25**	-.15**	-.03	-.03	-.17**	.09*	-.04		
12. Psychological Strain	2.74	0.71	.08*	-.16**	-.08*	-.37**	-.51**	-.30**	-.09**	-.72**	-.27**	-.34**	.35**	

Note. OCB-I = Organizational citizenship behaviors toward individuals; Gender coded 0 = Male, 1 = Female; Education coded 1 = Some high school, no diploma, 2 = High school graduate, diploma or the equivalent, 3 = Some college credit, no degree, 4 = Trade/technical/vocational training, 5 = Associate degree (AA, AS, AAB), 6 = Bachelor's degree (BA, BS), 7 = Master's degree (MA), 8 = Professional degree; 9 = Doctorate degree (PhD).

ratio test (BLRT; McLachlan & Peel, 2000). First, BIC, SSBIC, and AIC are descriptive statistics and lower values suggest better model fit. Second, an entropy value explains how precisely participants are classified into profiles. A higher entropy value represents better model fit and more precision in classification of participants in profiles. Although there is no strict rule of thumb, an entropy value of .70 is considered as a medium-high entropy value (Clark & Muthén, 2009). Third, LMRT and BLRT compare a proposed profile model (k profiles) to a one-less profile model (k-1 profiles). Therefore, when p-values of LMRT and BLRT are significant, it indicates that a proposed profile model (k profiles) shows better model fit than a one-less profile model (k-1 profiles). Other than using the fit indices, parsimony and meaningfulness should be also considered when the number of profiles is decided (Nylund et al., 2007). When a profile group includes less than 5% of samples, the profile group may not be meaningful and removal of the group should be considered for the sake of parsimony (Marsh et al., 2009).

LPA was performed, starting from a one-profile model. Table 4 presents the results of the LPA fit statistics. In consideration of all fit indicators, the three-profile model was selected as the optimal number of model in this study. First, the second-profile model and three-profile model showed more significant decrease in BIC, SSBIC, and AIC values than did the four-profile model. Second, the entropy value dropped in the four-profile model. Third, the significant LMRT *p*-value in the three-profile model became non-significant in the four-profile model, indicating that the three-profile model better explains the data than the four-profile model. Lastly, when a specific group distribution was checked in the three-profile model, all three groups included more than 5% of participants. Thus, the three-profile model was selected as the optimal profile model in this study, failing to support Hypothesis 1. A graphical demonstration of the three profiles is presented in Figure 2.

Table 4. Study 1: Fit Statistics for Benefactor and Beneficiary OCB-I Latent Profiles (N = 815)

# of Profiles	1	2	3	4	5	6
LL	-1691.442	-1578.080	-1484.701	-1449.517	-1429.032	-1394.322
Δ LL		113.362	93.379	35.184	20.485	34.710
# of Free Parameters	4	7	10	13	16	19
AIC	3390.884	3170.160	2989.402	2925.033	2890.064	2826.644
Δ AIC		220.724	180.758	64.369	34.969	63.420
BIC	3409.697	3203.083	3036.434	2986.175	2965.315	2916.005
Δ BIC		206.614	166.649	50.259	20.860	49.310
SSBIC	3396.995	3180.853	3004.678	2944.892	2914.505	2855.669
Δ SSBIC		216.142	176.175	59.786	30.387	58.836
LMRT p-value		.015	.048	.270	.528	.002
BLRT p-value		<.0001	<.0001	<.0001	<.0001	<.0001
Entropy		.552	.776	.720	.772	.796

Note. LL = Loglikelihood, BIC = Bayesian information criteria, SSBIC = Sample size adjusted Bayesian information criteria, AIC = Akaike information criteria, LMRT = Lo-Mendell-Rubin test, BLRT = Bootstrapped likelihood ration test. Bolded values indicate the model supported for each statistic.

Study 1: A Three Profile Model

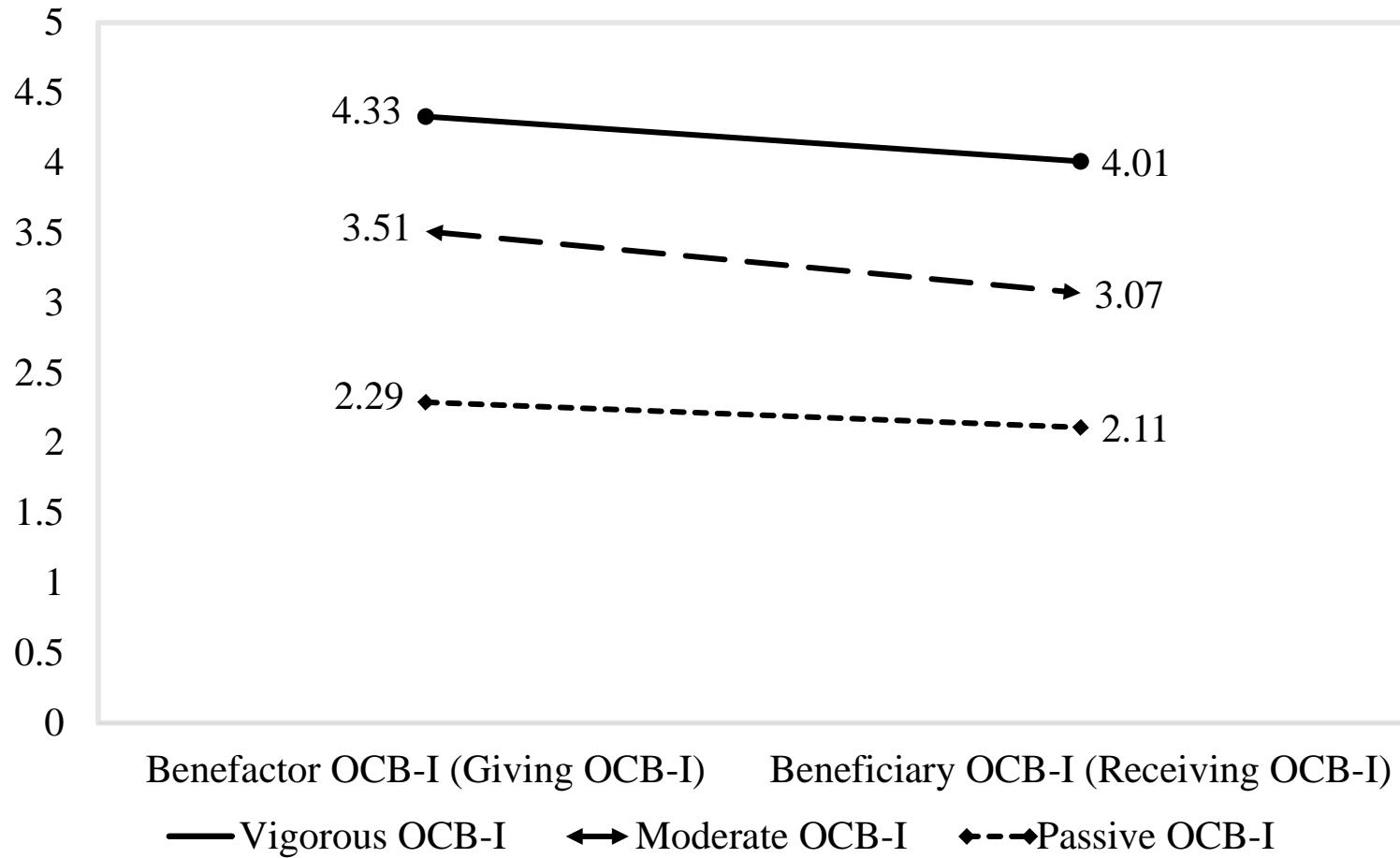


Figure 2. Latent profiles of benefactor OCB-I and beneficiary OCB-I in Study 1.

Among the three profiles, the first profile ($N = 210$; 25.77%) showed high benefactor OCB-I ($M = 4.33$) and high beneficiary OCB-I ($M = 4.01$) scores; consequently, I named the profile group the “*vigorous OCB-I group*.” The second profile ($N = 559$; 68.59%) showed moderate benefactor OCB-I ($M = 3.51$) and moderate beneficiary OCB-I ($M = 3.07$) scores; hence, I named the profile group the “*moderate OCB-I group*.” The third profile ($N = 46$; 5.64%) showed low benefactor OCB-I ($M = 2.29$) and low beneficiary OCB-I ($M = 2.11$) scores; therefore, I named the profile group the “*passive OCB-I group*.”

Antecedents of the Profiles. Based on the three-profile model, I tested the relationships between the proposed antecedents and the three profiles (see Table 5). Overall, results demonstrated that all proposed antecedents significantly differentiated the profiles. Specifically, positive affect, other-oriented empathy, and task interdependence significantly differentiated all three profiles, while conscientiousness only differentiated the vigorous OCB-I group from the moderate OCB-I group and job satisfaction differentiated the vigorous OCB-I group from the moderate OCB-I group and the passive OCB-I group. Among all variables, other-oriented empathy most effectively differentiated the three profiles, showing the largest effect sizes.

Based on the results, the vigorous OCB-I group who gave and received a high level of OCB-I showed higher levels of conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction, compared to the moderate OCB-I group. Then, the moderate OCB-I group who gave and received a moderate level of OCB-I demonstrated the higher levels of positive affect, other-oriented empathy, and task interdependence, compared to the passive OCB-I group; however, conscientiousness and job satisfaction were not significantly different between the moderate OCB-I group and the passive OCB-I group.

Table 5. Study 1: Results for Predictor Variables in Relation to the Identified Profiles (N = 815)

Profiles	Conscientiousness		Positive Affect		Other-oriented Empathy		Task Interdependence		Job Satisfaction	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Passive vs. Moderate (Passive as a reference)	-.44	.37	.95 *	.42	1.45 **	.31	.48 **	.26	.47	.26
Passive vs. Vigorous (Passive as a reference)	.26	.46	1.76 **	.46	2.82 **	.41	.73 **	.20	.97 **	.33
Moderate vs. Vigorous (Moderate as a reference)	.70 *	.28	.81 **	.20	1.37 **	.27	.25 **	.09	.50 *	.22
Summary	Vigorous = Passive, Vigorous > Moderate, Passive = Moderate		Vigorous > Moderate > Passive		Vigorous > Moderate > Passive		Vigorous > Moderate > Passive		Vigorous > (Moderate = Passive)	

Note. A positive estimate represents that a higher value on the predictor predicts the second profile (not a reference group). A negative estimate indicates that a higher value on the predictor predicts the first profile (a reference group).

* $p < .05$. ** $p < .01$.

Outcomes of the Profiles. On the basis of the three-profile model, I examined the different health outcomes among the vigorous, moderate, and passive OCB-I profiles (see Table 6 and Figure 3). In terms of physical strain, the passive OCB-I group showed the lowest physical strain ($M = 1.69$, $S.E. = .07$), the vigorous OCB-I group showed moderate physical strain ($M = 2.03$, $S.E. = .04$), and the moderate OCB-I group showed the highest physical strain ($M = 2.14$, $S.E. = .03$). The three means were significantly different ($\chi^2(2) = 36.41$, $p < .01$). For psychological strain, the vigorous OCB-I group showed the lowest psychological strain ($M = 2.35$, $S.E. = .04$), the moderate OCB-I group showed moderate psychological strain ($M = 2.84$, $S.E. = .03$), and the passive OCB-I group showed the highest psychological strain ($M = 3.20$, $S.E. = .09$). Again, the means of the three groups were significantly different ($\chi^2(2) = 122.11$, $p < .01$).

Following the results, the vigorous OCB-I group who gave and received a high level of OCB-I showed moderate physical strain and the lowest psychological strain. Then, the moderate OCB-I group who gave and received a moderate level of OCB-I demonstrated the highest physical strain and moderate psychological strain. Lastly, the passive OCB-I group who gave and received a low level of OCB-I experienced the lowest physical strain and the highest psychological strain.

Discussion (Study 1)

Using cross-sectional data, Study 1 investigated benefactor and beneficiary OCB-I latent profiles and their relations to multiple predictors and outcomes. Results suggested three profiles (i.e., vigorous OCB-I group, moderate OCB-I group, and passive OCB-I group) and all three profiles appeared to be matchers who balance levels of giving and receiving OCB-I.

Table 6. Study 1: Results for Outcome Variables in Relation to the Identified Profiles (N = 815)

Profiles	Physical Strain		Psychological Strain	
	Chi-Square	df	Chi-Square	df
Study 1				
Passive vs. Moderate	34.27 **	1	14.83 **	1
Passive vs. Vigorous	17.05 **	1	74.06 **	1
Moderate vs. Vigorous	6.26 **	1	91.29 **	1
Overall Test	36.41 **	2	122.11 **	2

Note. * $p < .05$. ** $p < .01$.

Study 1: Physical Strain and Psychological Strain

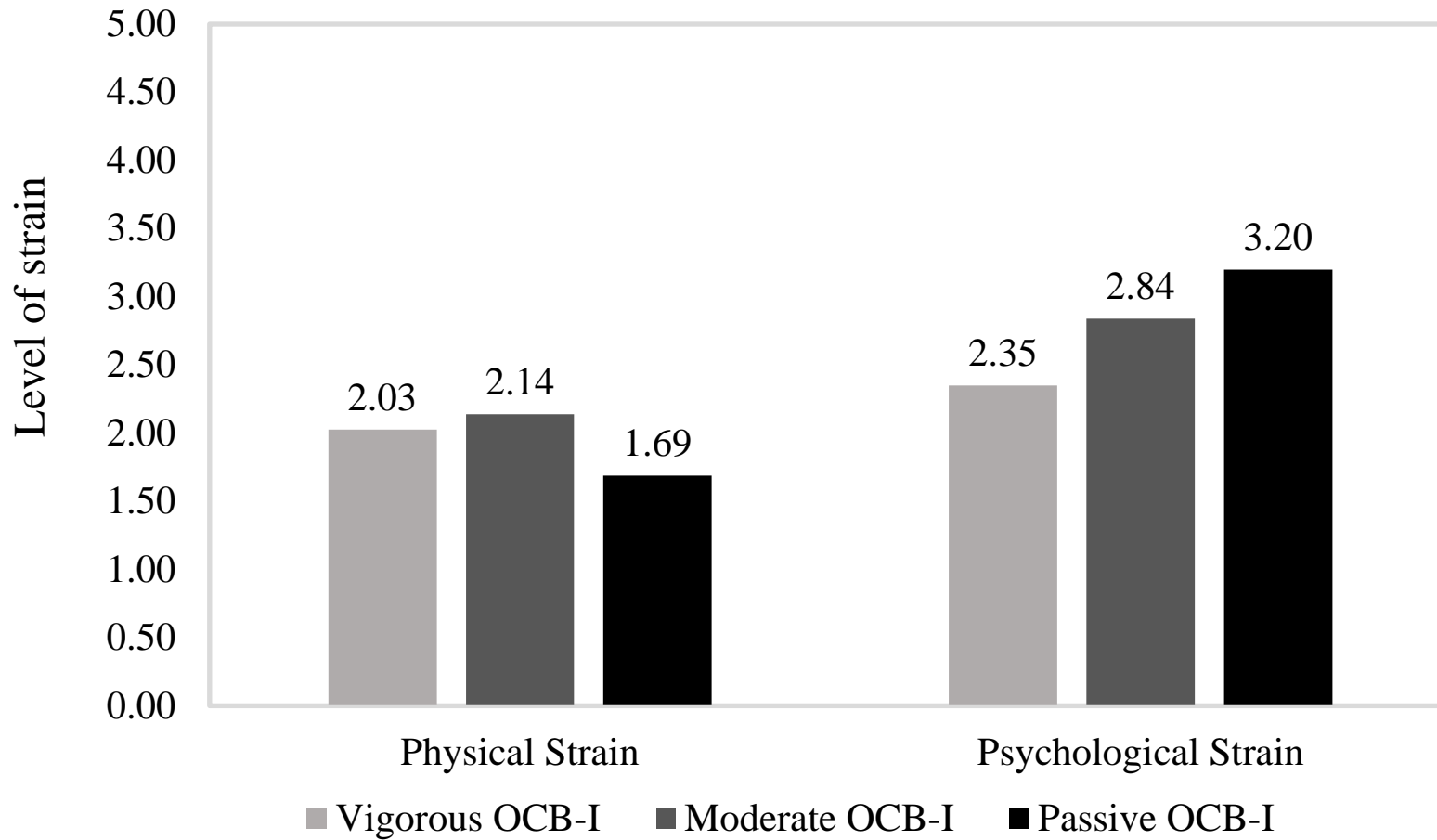


Figure 3. Means of outcome variables by the three latent profiles in Study 1.

In regard to results of the auxiliary variables, all proposed predictors (i.e., conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction) significantly differentiated the latent profiles. Specifically, positive affect, other-oriented empathy, and task interdependence significantly differentiated all three profiles; however, conscientiousness significantly differentiated only the vigorous OCB-I group from the moderate OCB-I group and job satisfaction significantly differentiated only the vigorous OCB-I group from the two groups. Also, other-oriented empathy most significantly differentiated the three profiles.

Moreover, the three identified profiles showed significantly different physical and psychological strain levels. Specifically, the passive OCB-I group who engaged in low benefactor OCB-I and low beneficiary OCB-I reported the lowest physical strain. In other words, the passive OCB-I group less experienced flu or cold, backpain, headache, upset stomach, and so on. Although the passive OCB-I group showed the lowest physical strain, interestingly, the passive OCB-I group showed the highest psychological strain such as emotional exhaustion and disengagement. On the other hand, the moderate OCB-I group who engaged in moderate benefactor OCB-I and moderate beneficiary OCB-I experienced the highest physical strain; the vigorous OCB-I group who engaged in high benefactor OCB-I and high beneficiary OCB-I experienced the lowest psychological strain.

To ensure that the findings are not artifacts, the same findings should be revealed using different samples. Therefore, Study 2 was conducted in order to replicate the findings in Study 1. Also, Study 2 used multiple time points in data collection to create time intervals between predictors, benefactor OCB-I, beneficiary OCB-I, and outcome variables. With the time intervals, I attempted to reduce common method variance effects and the third variable effects

such as mood effects, and establish temporal precedence between the predictors, benefactor OCB-I, beneficiary OCB-I, and outcome variables (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

CHAPTER THREE: STUDY 2 (MULTIPLE TIME POINTS STUDY)

Method (Study 2)

Participants and Procedures

In Study 2, participants were recruited through Qualtrics online panels. Qualtrics online panels are third-party panels that provide researchers with targeted samples to collect data (e.g., Roulin & Krings, 2016). Similar to Study 1, participants had to satisfy the following criteria: (1) work at least 30 hours per week, (2) be between 18 and 65 years old, (3) currently reside and work in the United States, and (4) work with other people in the workplace.

For participant recruitment, Qualtrics contacted traditional market research panels and randomly selected samples from them. Also, as another recruitment method, Qualtrics used social media to recruit participants. All participants responded to the surveys voluntarily and Qualtrics protected participant confidentiality using a randomly-generated ID number as the only identifier for each participant. In terms of data collection procedures, Qualtrics sent an online email invitation with the first survey link, including the purpose of the study, the estimated survey completion time, and the possible incentive options (i.e., cash, airline miles, gift cards, redeemable points, sweepstakes entrance, and vouchers). The first survey included demographic information, conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction questionnaires. Once participants completed the first survey, they were compensated based on their preferred incentive choice. One week after the first survey, participants who completed the first survey received another email invitation for the second survey. The second survey included questions about benefactor OCB-I and beneficiary OCB-I.

Participants who completed the second survey received their preferred incentive as compensation. One week after the second survey, participants who completed the first and the second surveys received another email invitation for the third survey. The third survey encompassed physical and psychological strains. After participants completed the third survey, they received their preferred incentive as compensation.

Qualtrics delivered the three time point survey data after screening out participants who did not meet the eligibility criteria or who failed to select a correct response on each attention check item. In Wave 1 survey data, a total of 1,070 responses were included. Out of the 1,070 participants, 2 responded that they worked less than 30 hours per week, indicating that they did not meet one eligibility criterion and were therefore removed. Based on Huang et al.'s (2012) suggestion, I removed 6 extremely fast responses operationalized as those that were completed faster than 2 seconds per item. A total of 8 responses were removed and the final sample included 1,062 employees.

Of the 1,062 participants, 53.0% were female and the average age was 46.70 years ($SD = 11.46$). In terms of participant race/ethnicity distribution, 84.7% were White, 3.8% were Black or African American, 6.9% were Asian/Pacific Islander, 2.7% were Hispanic or Latino, 0.5% were Native American or American Indian, and 1.4% were others. For participant level of education, 0.2% had some high school education but did not earn a diploma, 6.1% had a high school degree or an equivalent degree, 10.4% took some college credits but did not graduate, 3.8% received trade/technical/vocational training, 9.6% had an associate degree, 41.3% had a Bachelor's degree, 21.1% had a Master's degree, 4.5% had a professional degree, and 3.0% had a Doctorate degree. Also, participants worked in a variety of industries, such as education (15.07%) and agriculture/forestry/fishing (0.19%).

After one week, a Wave 2 survey invitation was sent and 700 participants completed the second survey. On average, the time interval between Wave 1 and Wave 2 was 9.84 days ($SD = 3.81$). Of the 700 participants, 35 participants completed the survey twice and I thus removed those 70 responses. Also, based on the 2 seconds per item rule (Huang et al., 2012), 13 participants took the survey extremely fast and I removed the 13 responses. Then, 2 participants who did not participate in the first survey joined the second survey and I removed the 2 responses. A total of 85 responses were removed and the final sample included 615 employees. The participants at Wave 2 were not significantly different from the ones at Wave 1 in terms of gender ($t = 1.27, p = .62$), race/ethnicity ($t = -.07, p = .96$), and education ($t = .27, p = .91$); however, participants at Wave 2 ($M = 47.93, SD = 11.05$) were slightly older than participants at Wave 1 ($M = 46.70, SD = 11.46; t = -2.18, p < .05$).

Participants who completed the first and the second surveys received a third survey invitation and 452 participants returned and completed the Wave 3 survey. On average, the time interval between Wave 2 and Wave 3 was 9.48 days ($SD = 2.72$). Out of the 452 samples, 8 participants took the survey extremely quickly based on the 2 seconds per item rule (Huang et al., 2012) and I deleted the 8 responses. Of the 444 participants, 27 participants did not complete the first and the second surveys joined the third survey and I eliminated the 27 responses. A total of 35 responses were removed and the final sample included 417 employees. Compared to the participants at Wave 1, participants at Wave 3 were not significantly different in gender ($t = 1.51, p = .13$), race/ethnicity ($t = .73, p = .46$), and education ($t = .42, p = .68$); however, participants at Wave 3 ($M = 48.29, SD = 11.09$) were slightly older than participants at Wave 1 ($M = 46.70, SD = 11.46; t = -2.42, p < .05$). Also, participants at Wave 3 were not significantly

different from participants at Wave 2 with regard to gender ($t = .36, p = .72$), age ($t = -.51, p = .61$), race/ethnicity ($t = .74, p = .46$), or education ($t = .16, p = .87$).

Measures

Descriptive statistics and reliability information are presented in Table 7. All measures showed acceptable reliability (above .70).

At Wave 1, demographic information, conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction were measured using the same scales from Study 1. At Wave 2, the benefactor OCB-I and the beneficiary OCB-I were assessed with the relevant scales used in Study 1. At Wave 3, physical strain and psychological strain were measured with the same scales used in Study 1. However, in Study 2, participants' *past week* physical and psychological strain information was collected instead of general physical and psychological strain information in order to establish stronger links between the outcome variables and the profiles of benefactor OCB-I and beneficiary OCB-I.

To check whether participants endorsed items attentively, Qualtrics included two attention check items in each Wave 1, Wave 2, and Wave 3 survey. In the Wave 1 survey, Qualtrics added the two following items: "Please select *disagree* as your response," and "Please select *almost never* as your response." In Wave 2 survey, Qualtrics included the two following items: "Please select *agree* as your response," and "Please select *always* as your response." In Wave 3 survey, Qualtrics included the two following items: "Please select *strongly disagree* as your response," and "Please select *disagree* as your response."

Data Analyses

Latent Profile Analyses (LPA). The identical analytic approach was taken as Study 1.

Table 7. Study 2: Descriptive Statistics of Study Variables

Variable	N	Mean	SD	α	Min	Max	Skewness	Kurtosis
Wave 1								
Conscientiousness	1062	3.99	.60	.87	1.90	5.00	-.44	.04
Positive Affect	1062	3.34	.75	.93	1.00	5.00	-.16	.09
Other-oriented Empathy	1062	3.69	.50	.78	2.00	5.00	.01	.11
Task Interdependence	1062	3.99	1.28	.80	1.00	7.00	.00	-.47
Job Satisfaction	1062	3.89	.90	.93	1.00	5.00	-1.02	1.21
Wave 2								
Benefactor OCB-I	615	3.50	.69	.95	1.00	5.00	-.42	1.02
Beneficiary OCB-I	615	3.04	.76	.96	1.00	5.00	.01	.35
Wave 3								
Physical Strain	417	1.49	.46	.83	1.00	3.25	1.10	.93
Psychological Strain	417	2.67	.63	.89	1.06	4.63	.12	.08

Note. OCB-I = Organizational citizenship behaviors toward individuals.

Results (Study 2)

Preliminary Analyses

As in Study 1, the basic statistical assumptions of data were assessed: data normality, outliers, data missingness, linearity, and homoscedasticity. The identical analytic approach from Study 1 was taken for each assumption testing. First, data normality was checked. Although the skewness and kurtosis values did not suggest a violation of the data normality, physical strain appeared to be positively skewed in visual inspection. This was not surprising given that the general full-time working population is expected to be relatively healthy. In comparison to Study 1 samples, Study 2 samples showed fewer physical symptoms than did Study 1 samples ($t = 18.18, p < .01$). One salient reason for this is that Study 1 measured general physical strain, while Study 2 measured past week physical strain. The limited and specified time period in Study 2 might result in less frequent physical strain symptoms reported. With regard to outliers, no serious outliers were found based on descriptive statistics, frequencies, and histograms. Data missingness was not problematic in that all included variables showed less than 1% data missingness. In addition, non-linearity patterns were not found in the scatterplots between OCB-I measures and health outcomes. Lastly, homoscedasticity assumptions were satisfied, showing the relatively equal variance of residuals at the predicted value for each variable.

Correlations

Means, standard deviations, and intercorrelations for the study variables are presented in Table 8. In this dataset, the directions and the strengths of the correlations were also relatively consistent with the previous findings. Similar to Study 1 findings, all correlation coefficient values between the predictor variables were less than .80, suggesting no serious multicollinearity issues (Licht, 1995).

Table 8. Study 2: Means, Standard Deviations, and Intercorrelations Among Study Variables (N = 417-1062)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
Wave 1														
1. Gender	1.53	0.50												
2. Age	46.70	11.46	-.20**											
3. Education	5.66	1.66	-.08**	-.16**										
4. Conscientiousness	3.99	0.60	.04	.15**	-.03									
5. Positive Affect	3.34	0.75	.02	.15**	.07*	.40**								
6. Other-oriented Empathy	3.69	0.50	.15**	.09**	.01	.16**	.25**							
7. Task Interdependence	3.99	1.28	-.09**	-.10**	.15**	-.03	.08*	.18**						
8. Job Satisfaction	3.89	0.90	.06*	.13**	-.02	.21**	.40**	.18**	.07*					
Wave 2														
9. Benefactor OCB-I	3.50	0.69	.17**	.01	-.04	.18**	.32**	.45**	.15**	.24**				
10. Beneficiary OCB-I	3.03	0.76	.11**	-.08*	.01	.06	.29**	.35**	.17**	.34**	.72**			
Wave 3														
11. Physical Strain	1.50	0.46	.19**	-.07	-.12*	-.06	-.12*	.12*	-.07	-.14**	.08	.04		
12. Psychological Strain	2.67	0.63	.07	-.18*	.03	-.25**	-.44**	-.19**	-.06	-.61**	-.18**	-.24**	.33**	

Note. OCB-I = Organizational citizenship behaviors toward individuals; Gender coded 0 = Male, 1 = Female; Education coded 1 = Some high school, no diploma, 2 = High school graduate, diploma or the equivalent, 3 = Some college credit, no degree, 4 = Trade/technical/vocational training, 5 = Associate degree (AA, AS, AAB), 6 = Bachelor's degree (BA, BS), 7 = Master's degree (MA), 8 = Professional degree; 9 = Doctorate degree (PhD).

Latent Profile Analyses (LPA)

I chose the ideal number of latent profiles, following the same fit indicator rules in Study 1. Table 9 demonstrates the results of the LPA fit statistics. Taking all fit indicators into account, I selected the three-profile model as the optimal number of profile model in this study. First, although the BIC, SSBIC, and AIC values were continuously lowered, the BIC, SSBIC, and AIC values decreased more drastically in the two-profile model and the three-profile model and more slowly from the four-profile model, which suggests that the three-profile model might be favored over the four-profile model. Also, the entropy value became lower in the four-profile model compared to the three-profile model, indicating that the three-profile model fit the data better than the four-profile model. Therefore, I selected the three-profile model as the optimal number of profile model. In the three-profile model, each profile group included more than 5% of participants. This finding did not support Hypothesis 1, but it was consistent with the finding in Study 1. A graphical demonstration of the three profiles is presented in Figure 4.

Among the three profiles, the first profile ($N = 159$; 25.85%) was the *vigorous OCB-I group* and showed high benefactor OCB-I ($M = 4.24$) and high beneficiary OCB-I ($M = 3.88$) scores. The second profile ($N = 415$; 67.48%) was the *moderate OCB-I group* and demonstrated moderate benefactor OCB-I ($M = 3.36$) and moderate beneficiary OCB-I ($M = 2.84$) scores. Lastly, the third profile ($N = 41$; 6.67%) was the *passive OCB-I group* and showed low benefactor OCB-I ($M = 2.10$) and low beneficiary OCB-I ($M = 1.68$) scores. This sample distribution was greatly similar to the one found in Study 1.

Table 9. Study 2: Fit Statistics for Benefactor and Beneficiary OCB-I Latent Profiles (N = 615)

# of Profiles	1	2	3	4	5	6
LL	-1350.784	-1256.004	-1151.154	-1123.052	-1094.379	-1079.569
Δ LL		94.780	104.850	28.102	28.673	14.810
# of Free Parameters	4	7	10	13	16	19
AIC	2709.569	2526.008	2322.308	2272.104	2220.758	2197.139
Δ AIC		183.561	203.700	50.204	51.346	23.619
BIC	2727.255	2556.959	2366.524	2329.585	2291.504	2281.150
Δ BIC		170.296	190.435	36.939	38.081	10.354
SSBIC	2714.556	2534.736	2334.776	2288.313	2240.707	2220.828
Δ SSBIC		179.820	199.960	46.463	47.606	19.879
LMRT p-value		<.01	<.0001	<.01	<.01	0.025
BLRT p-value		<.0001	<.0001	<.0001	<.0001	<.0001
Entropy		.606	.820	.783	.813	.822

Note. LL = Loglikelihood, BIC = Bayesian information criteria, SSBIC = Sample size adjusted Bayesian information criteria, AIC = Akaike information criteria, LMRT = Lo-Mendell-Rubin test, BLRT = Bootstrapped likelihood ration test. Bolded values indicate the model supported for each statistic.

Study 2: A Three Profile Model

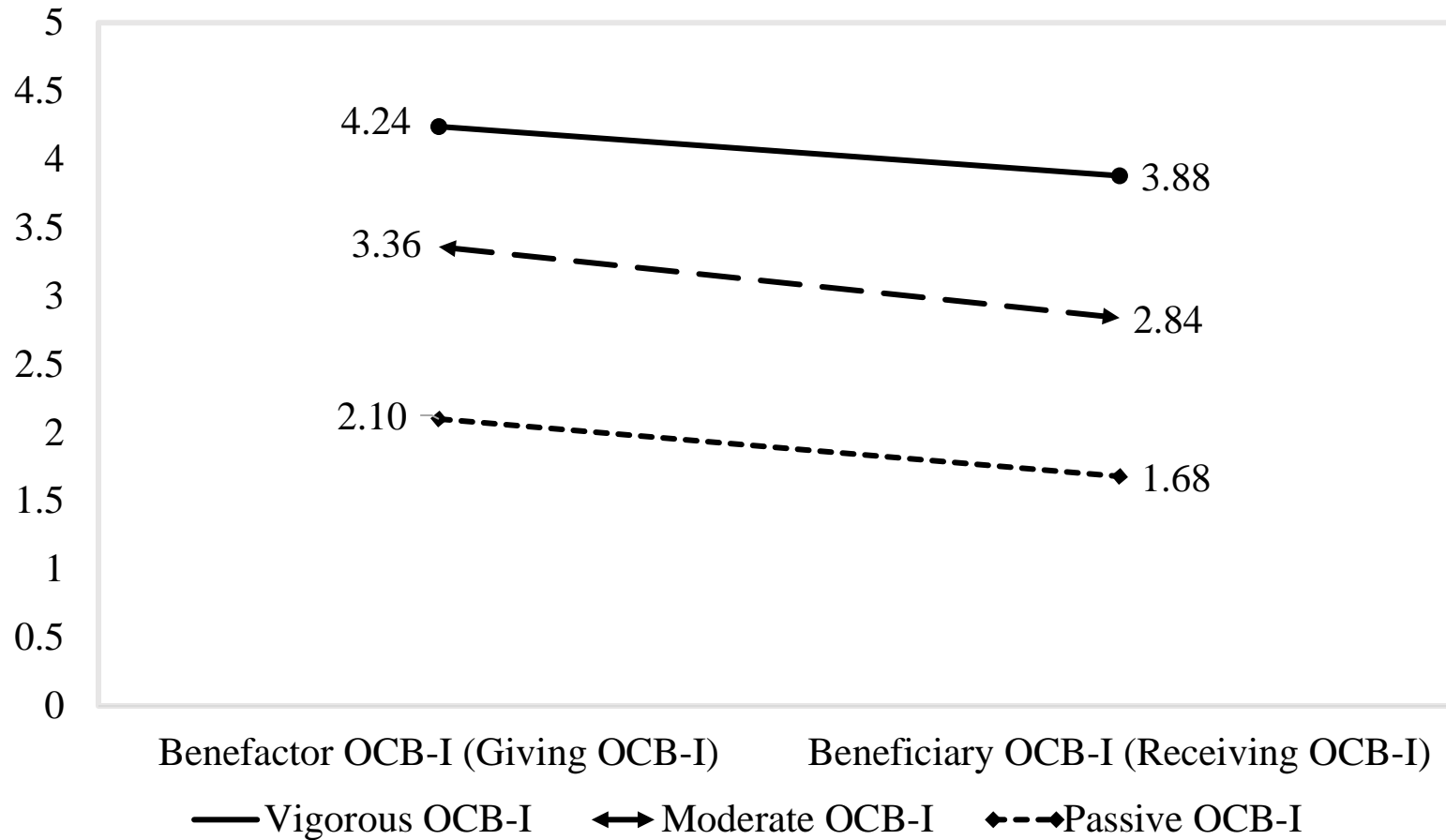


Figure 4. Latent profiles of benefactor OCB-I and beneficiary OCB-I in Study 2.

Antecedents of the Profiles.³ I investigated relationships between the proposed antecedents and the three profiles (see Table 10). Consistent with Study 1 findings, positive affect, other-oriented empathy, task interdependence, and job satisfaction contributed to differentiating the profiles, and specifically other-oriented empathy was found to differentiate the three profiles most effectively, showing the largest effect sizes. However, different from Study 2 findings, conscientiousness did not significantly differentiate the profile groups.

Based on the results, the vigorous OCB-I group who gave and received a high level of OCB-I showed higher levels of positive affect, other-oriented empathy, and job satisfaction, compared to the moderate OCB-I group. Then, the moderate OCB-I group who gave and received a moderate level of OCB-I demonstrated a higher level of other-oriented empathy, compared to the passive OCB-I group. All three groups appeared to have a similar level of conscientiousness.

Outcomes of the Profiles. Based on the three-profile model, physical strain and psychological strain differences were examined among the vigorous, moderate, and passive OCB-I profiles (see Table 11 and Figure 5). First, in regard to physical strain, the passive OCB-I group showed the lowest physical strain ($M = 1.39$, S.E. = .07), the moderate OCB-I group showed moderate physical strain ($M = 1.49$, S.E. = .03), and the vigorous OCB-I group showed the highest physical strain ($M = 1.52$, S.E. = .05). However, the means were not significantly different ($\chi^2(2) = 2.46$, $p = .29$). In terms of psychological strain, the vigorous OCB-I group showed the lowest psychological strain ($M = 2.38$, S.E. = .06), the moderate OCB-I group

³ Given that social desirability might affect participants' responses to benefactor OCB-I and beneficiary OCB-I items, I measured participants' social desirability using Reynolds (1982) scale and examined the effects of social desirability on the differentiation of the three groups. Results showed that social desirability did not significantly differentiate the profile groups.

Table 10. Study 2: Results for Predictor Variables in Relation to the Identified Profiles (N = 615)

Profiles	Conscientiousness		Positive Affect		Other-oriented Empathy		Task Interdependence		Job Satisfaction	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Passive vs. Moderate (Passive as a reference)	-.24	.43	.37	.34	2.03 **	.38	.31	.17	.44	.23
Passive vs. Vigorous (Passive as a reference)	-.26	.49	1.08 **	.39	3.50 **	.48	.39 *	.19	1.07 **	.32
Moderate vs. Vigorous (Moderate as a reference)	-.02	.28	.71 **	.21	1.47 **	.32	.09	.10	.64 **	.23
Summary	Vigorous = Passive = Moderate		Vigorous > (Moderate = Passive)		Vigorous > Moderate > Passive		(Vigorous = Moderate) > Passive		Vigorous > (Moderate = Passive)	

Note. A positive estimate represents that a higher value on the predictor predicts the second profile (not a reference group). A negative estimate indicates that a higher value on the predictor predicts the first profile (a reference group).

* $p < .05$. ** $p < .01$.

Table 11. Study 2: Results for Outcome Variables in Relation to the Identified Profiles (N = 417)

Profiles	Physical Strain		Psychological Strain	
	Chi-Square	df	Chi-Square	df
Study 2				
Passive vs. Moderate	1.76	1	2.45	1
Passive vs. Vigorous	2.43	1	20.11 **	1
Moderate vs. Vigorous	.34	1	27.32 **	1
Overall Test	2.46	2	33.47 **	2

Note. * $p < .05$. ** $p < .01$.

Study 2: Physical Strain and Psychological Strain

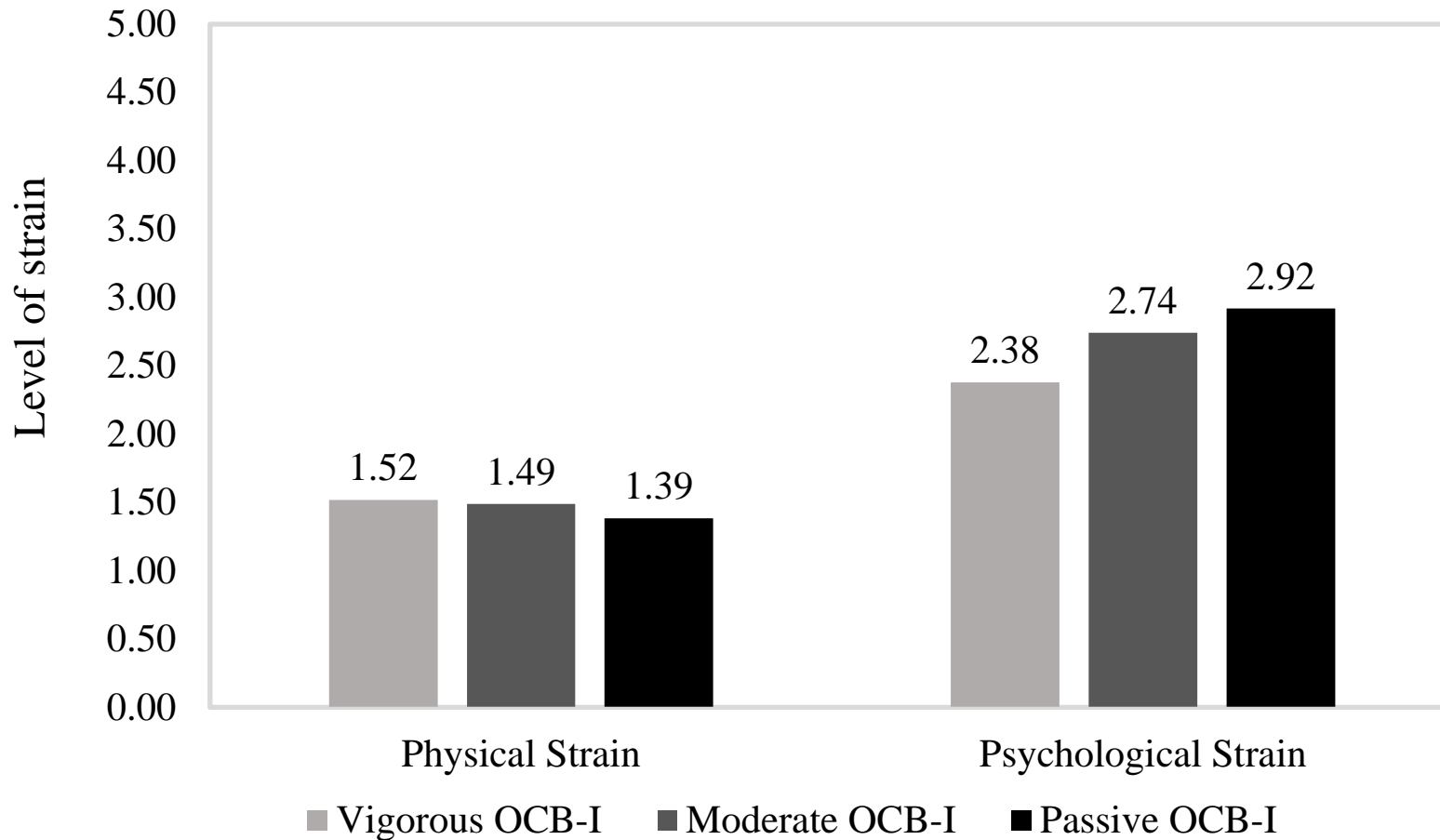


Figure 5. Means of outcome variables by the three latent profiles in Study 2.

showed moderate psychological strain ($M = 2.74$, $S.E. = .04$), and the passive OCB-I group showed the highest psychological strain ($M = 2.92$, $S.E. = .10$). However, only the mean scores of the vigorous OCB-I group and the passive OCB-I group were significantly different ($\chi^2(1) = 20.11$, $p < .01$) and the mean scores of the vigorous OCB-I group and the moderate OCB-I group were significantly different ($\chi^2(1) = 27.32$, $p < .01$).

In general, the vigorous OCB-I group, the moderate OCB-I group, and the passive OCB-I group experienced a similar level of physical strain. For psychological strain, the vigorous OCB-I group showed the lowest psychological strain. The moderate OCB-I group demonstrated moderate psychological strain. Lastly, the passive OCB-I group experienced the highest psychological strain. However, note that the mean scores of psychological strain were only statistically different between the vigorous and the passive OCB-I groups and between the vigorous and the moderate OCB-I groups.

Discussion (Study 2)

With three waves of data, Study 2 identified the latent profiles of benefactor OCB-I and beneficiary OCB-I and examined the relationships between the profiles and the proposed auxiliary variables. Consistent with the findings of Study 1, three profiles were found: vigorous, moderate, and passive OCB-I groups.

In terms of the predictor effects, in line with Study 1 findings, positive affect, other-oriented empathy, task interdependence, and job satisfaction significantly differentiated the profiles of benefactor OCB-I and beneficiary OCB-I. Also, as found in Study 1, other-oriented empathy most significantly differentiated the three profiles. However, different from Study 1 findings, conscientiousness did not significantly differentiate the profiles. In other words, the vigorous, the moderate, and the passive OCB-I groups appeared to have a similar level of conscientiousness.

With regard to the physical and psychological strain outcomes, the vigorous OCB-I group, the moderate OCB-I group, and the passive OCB-I group showed a similar level of physical strain. However, for psychological strain, the vigorous OCB-I group showed the lowest psychological strain. Also, the moderate OCB-I group and the passive OCB-I group showed a similar level of psychological strain. In regard to similarities and differences between Study 1 and Study 2 results, Study 2 results were consistent with Study 1 results for psychological strain but not for physical strain. For psychological strain, both Study 1 and Study 2 results revealed that the vigorous OCB-I group showed the lowest psychological strain. For physical strain, Study 1 found that the passive OCB-I group showed the lowest physical strain, and the moderate OCB-I group reported the highest physical strain; however, Study 2 found no significant differences between the three groups.

CHAPTER FOUR: SUPPLEMENTAL ANALYSES

Two supplemental analyses were conducted. First, latent profile analyses (LPA) were performed using the specific sub-factors of benefactor OCB-I and beneficiary OCB-I (i.e., person-focused benefactor OCB-I, task-focused benefactor OCB-I, person-focused beneficiary OCB-I, and task-focused beneficiary OCB-I). Second, rather than using latent information, I used observed median scores and artificially created the four groups of benefactor OCB-I and beneficiary OCB-I (i.e., vigorous OCB-I group, sacrificing OCB-I group, selfish OCB-I group, and passive OCB-I group). Then, I examined the relationships between the predictors and the four groups using multinomial logistic regressions and tested the relationships between the four groups and the outcomes using a series of one-way ANOVAs.

Latent Profile Analyses Using Four Indicators

Based on Settoon and Mossholder's (2002) argument, benefactor OCB-I and beneficiary OCB-I can be even further differentiated into four types: person-focused benefactor OCB-I, task-focused benefactor OCB-I, person-focused beneficiary OCB-I, and task-focused beneficiary OCB-I. In order to provide additional information beyond the findings in Study 1 and Study 2 and expand understanding about the latent profile groups of benefactor OCB-I and beneficiary OCB-I, I performed LPA using the four sub-types. Specifically, for data analyses, both Study 1 data and Study 2 data were used. The same analytic approach from Study 1 and Study 2 was taken for LPA and the identical model fit evaluation rules were applied. Specific results in the fit statistics are provided in Table 12. Both results suggested that the three-profile model was the optimal model. Specifically, the BIC, SSBIC, and AIC values significantly decreased in the two-

Table 12. *Fit Statistics Based on Four Indicators of Benefactor OCB-I and Beneficiary OCB-I*

Study 1						
# of Profiles	1 Profile	2 Profiles	3 Profiles	4 Profiles	5 Profiles	6 Profiles
LL	-3707.862	-3329.749	-3132.057	-3046.204	-2993.992	-2938.230
Δ LL		378.113	197.692	85.853	52.212	55.762
# of Free Parameters	8	13	18	23	28	33
AIC	7431.723	6685.498	6300.115	6138.408	6043.984	5942.460
Δ AIC		746.225	385.383	161.707	94.424	101.524
BIC	7469.349	6746.639	6384.772	6246.582	6175.674	6097.665
Δ BIC		722.710	361.867	138.190	70.908	78.009
SSBIC	7443.944	6705.357	6327.611	6173.543	6086.757	5992.870
Δ SSBIC		738.587	377.746	154.068	86.786	93.887
LMRT p-value		<.01	.046	.022	.324	.019
BLRT p-value		<.0001	<.0001	<.0001	<.0001	<.0001
Entropy		.703	.817	.796	.819	.821
Study 2						
# of Profiles	1 Profile	2 Profiles	3 Profiles	4 Profiles	5 Profiles	6 Profiles
LL	-2901.995	-2575.564	-2360.720	-2289.371	-2227.689	-2188.002
Δ LL		326.431	214.844	71.349	61.682	39.687
# of Free Parameters	8	13	18	23	28	33
AIC	5819.990	5177.128	4757.439	4624.741	4511.378	4442.004
Δ AIC		642.862	419.689	132.698	113.363	69.374
BIC	5855.363	5234.609	4837.028	4726.438	4635.183	4587.918
Δ BIC		620.754	397.581	110.590	91.255	47.265
SSBIC	5829.965	5193.337	4779.882	4653.418	4546.288	4483.149
Δ SSBIC		636.628	413.455	126.464	107.130	63.139
LMRT p-value		<.001	.042	.065	.029	.063
BLRT p-value		<.0001	<.0001	<.0001	<.0001	<.0001
Entropy		.764	.869	.836	.856	.861

Note. $N = 815$ (Study 1) and $N = 615$ (Study 2). LL = Loglikelihood, BIC = Bayesian information criteria, SSBIC = Sample size adjusted Bayesian information criteria, AIC = Akaike information criteria, LMRT = Lo-Mendell-Rubin test, BLRT = Bootstrapped likelihood ration test. Bolded values indicate the model supported for each statistic.

profile model and the three-profile model and then slowly decreased from the four-profile model. In addition, the entropy values became higher in the three-profile model and then decreased in the four-profile model, which indicates that the three-profile model is preferred over the four-profile model. Lastly, all three profiles were meaningful, including more than 5% of samples. A graphical demonstration of the three profiles from Study 1 data and from Study 2 data is presented in Figure 6.

Even with the four indicators, I found a similar pattern of the three-profile groups: *vigorous OCB-I group*, *moderate OCB-I group*, and *passive OCB-I group*. Based on Study 1 data, the *vigorous OCB-I group* ($N = 206$; 25.28%) showed high person-focused benefactor OCB-I ($M = 4.44$), high task-focused benefactor OCB-I ($M = 4.25$), high person-focused beneficiary OCB-I ($M = 4.19$), and high task-focused beneficiary OCB-I ($M = 3.91$). The *moderate OCB-I group* ($N = 510$; 62.58%) showed moderate person-focused benefactor OCB-I ($M = 3.69$), moderate task-focused benefactor OCB-I ($M = 3.42$), moderate person-focused beneficiary OCB-I ($M = 3.31$), and moderate task-focused beneficiary OCB-I ($M = 2.89$). The *passive OCB-I group* ($N = 99$; 12.15%) showed low person-focused benefactor OCB-I ($M = 2.67$), low task-focused benefactor OCB-I ($M = 2.48$), low person-focused beneficiary OCB-I ($M = 2.49$), and low task-focused beneficiary OCB-I ($M = 2.02$). Similarly, using Study 2 data, the *vigorous OCB-I group* ($N = 160$; 26.02%) showed high person-focused benefactor OCB-I ($M = 4.34$), high task-focused benefactor OCB-I ($M = 4.11$), high person-focused beneficiary OCB-I ($M = 4.05$), and high task-focused beneficiary OCB-I ($M = 3.73$). The *moderate OCB-I group* ($N = 399$; 64.88%) showed moderate person-focused benefactor OCB-I ($M = 3.52$), moderate task-focused benefactor OCB-I ($M = 3.19$), moderate person-focused beneficiary OCB-I ($M = 3.05$), and moderate task-focused beneficiary OCB-I ($M = 2.61$). The *passive OCB-I group* ($N = 56$;

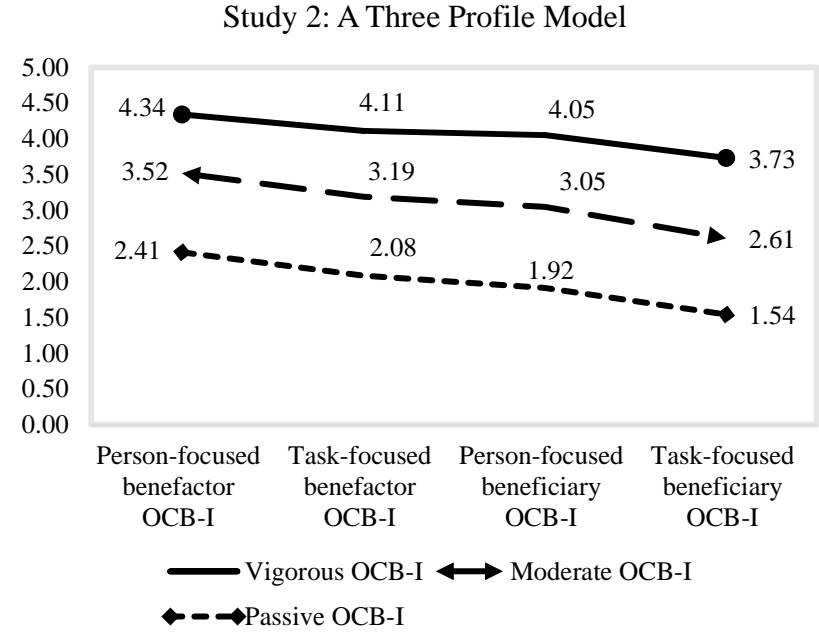
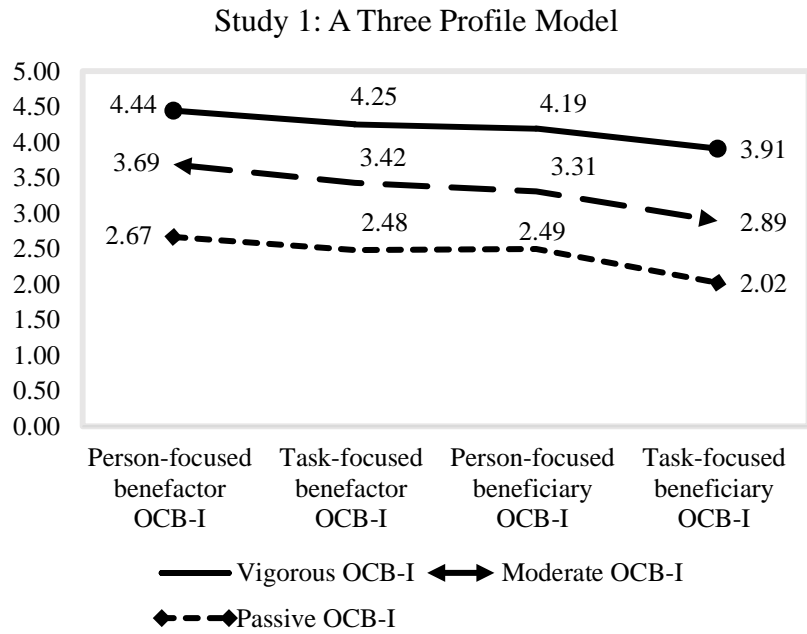


Figure 6. Latent profiles of benefactor OCB-I and beneficiary OCB-I based on four indicators

9.11%) showed low person-focused benefactor OCB-I ($M = 2.41$), low task-focused benefactor OCB-I ($M = 2.08$), low person-focused beneficiary OCB-I ($M = 1.92$), and low task-focused beneficiary OCB-I ($M = 1.54$).

Table 13 demonstrates the relationships between the proposed antecedents and the three profiles. Overall, most of the proposed antecedents significantly differentiated the profiles, though some differentiated more effectively than the others. Specifically, with Study 1 data, I found that positive affect, other-oriented empathy, task interdependence, and job satisfaction significantly differentiated *all three profiles*. Specifically, other-oriented empathy most effectively differentiated the three profiles, showing the largest effect sizes. Although conscientiousness helped differentiating the profiles, conscientiousness only differentiated the vigorous OCB-I group from the moderate OCB-I group. With Study 2 data, results revealed that other-oriented empathy and job satisfaction significantly differentiated *all three profiles*, and other-oriented empathy most effectively differentiated the three profiles, showing the largest effect sizes. Positive affect only differentiated the vigorous OCB-I group from the moderate OCB-I group and the passive OCB-I group; task interdependence only differentiated the passive OCB-I group from the vigorous OCB-I group and the moderate OCB-I group. Lastly, conscientiousness did not contribute to differentiating any groups. In sum, the vigorous OCB-I group showed higher levels of positive affect, other-oriented empathy, and job satisfaction, compared to the moderate OCB-I group. The moderate OCB-I group demonstrated higher levels of other-oriented empathy, task interdependence, and job satisfaction than the passive OCB-I group. Note that conscientiousness did not effectively differentiate the profiles.

Next, physical strain and psychological strain outcomes were compared between the vigorous, moderate, and passive OCB-I profile groups (see Table 14 and Figure 7). First, using

Table 13. Results for Predictor Variables Based on Four Indicators

Study 1											
Profiles	Conscientiousness		Positive Affect		Other-oriented Empathy		Task Interdependence		Job Satisfaction		
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	
Passive vs. Moderate (Passive as a reference)	-.08	.24	.68 **	.24	1.12 **	.24	.50 **	.11	.36 *	.16	
Passive vs. Vigorous (Passive as a reference)	.51	.32	1.33 **	.28	2.31 **	.33	.72 **	.13	.71 **	.23	
Moderate vs. Vigorous (Moderate as a reference)	.59 *	.23	.66 **	.17	1.19 **	.24	.22 **	.08	.36 *	.18	
Summary	Vigorous = Passive, Vigorous > Moderate, Passive = Moderate		Vigorous > Moderate > Passive		Vigorous > Moderate > Passive		Vigorous > Moderate > Passive		Vigorous > Moderate > Passive		
Study 2											
Profiles	Conscientiousness		Positive Affect		Other-oriented Empathy		Task Interdependence		Job Satisfaction		
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	
Passive vs. Moderate (Passive as a reference)	-.26	.34	.27	.30	1.72 **	.36	.40 **	.14	.59 **	.19	
Passive vs. Vigorous (Passive as a reference)	-.20	.40	.97 **	.32	2.88 **	.43	.44 **	.16	1.12 **	.25	
Moderate vs. Vigorous (Moderate as a reference)	.06	.25	.70 **	.19	1.16 **	.28	.05	.09	.54 **	.19	
Summary	Vigorous = Passive = Moderate		Vigorous > (Moderate = Passive)		Vigorous > Moderate > Passive		(Vigorous = Moderate) > Passive		Vigorous > Moderate > Passive		

Note. $N = 815$ (Study 1) and $N = 615$ (Study 2). A positive estimate represents that a higher value on the predictor predicts the second profile (not a reference group). A negative estimate indicates that a higher value on the predictor predicts the first profile (a reference group).

* $p < .05$. ** $p < .01$.

Table 14. Results for Outcome Variables Based on Four Indicators

Profiles	Physical Strain		Psychological Strain	
	Chi-Square	df	Chi-Square	df
Study 1				
Passive vs. Moderate	14.40 **	1	18.55 **	1
Passive vs. Vigorous	2.96	1	85.71 **	1
Moderate vs. Vigorous	6.24 *	1	66.79 **	1
Overall Test	17.14 **	2	106.31 **	2
Profiles	Physical Strain		Psychological Strain	
	Chi-Square	df	Chi-Square	df
Study 2				
Passive vs. Moderate	3.11	1	3.75	1
Passive vs. Vigorous	2.60	1	25.05 **	1
Moderate vs. Vigorous	.02	1	24.02 **	1
Overall Test	3.42	2	33.10 **	2

Note. $N = 815$ (Study 1) and $N = 417$ (Study 2).

* $p < .05$. ** $p < .01$.

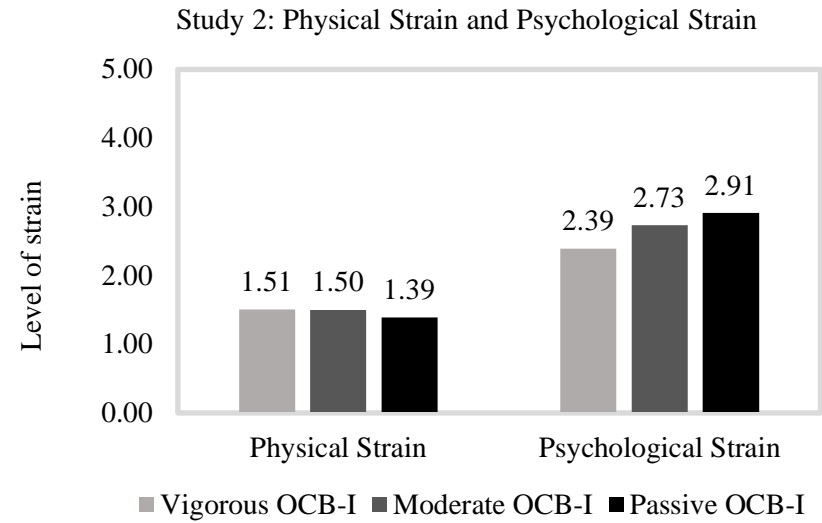
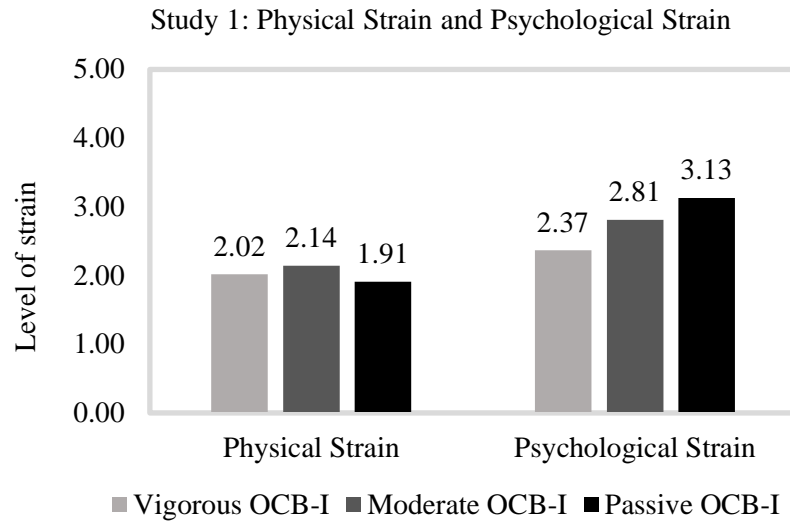


Figure 7. Means of outcome variables by the three latent profiles based on four indicators

Study 1 data, the passive OCB-I group showed the lowest physical strain ($M = 1.91$, S.E. = .06), the vigorous OCB-I group showed moderate physical strain ($M = 2.02$, S.E. = .04), and the moderate OCB-I group showed the highest physical strain ($M = 2.14$, S.E. = .03). The means of the passive OCB-I group and the moderate OCB-I group were significantly different ($\chi^2(1) = 14.40$, $p < .01$) and the means of the moderate OCB-I group and the vigorous OCB-I group were significantly different ($\chi^2(1) = 6.24$, $p < .05$). For psychological strain, the vigorous OCB-I group showed the lowest psychological strain ($M = 2.37$, S.E. = .04), the moderate OCB-I group showed moderate psychological strain ($M = 2.81$, S.E. = .03), and the passive OCB-I group showed the highest psychological strain ($M = 3.13$, S.E. = .07). All means of the three groups were significantly different ($\chi^2(2) = 106.31$, $p < .01$). Then, using Study 2 data, I found that the passive OCB-I group showed the lowest physical strain ($M = 1.39$, S.E. = .06), the moderate OCB-I group showed moderate physical strain ($M = 1.50$, S.E. = .03), and the vigorous OCB-I group showed the highest physical strain ($M = 1.51$, S.E. = .05). However, the means scores were not significantly different. For psychological strain, the vigorous OCB-I group showed the lowest psychological strain ($M = 2.39$, S.E. = .06), the moderate OCB-I group showed moderate psychological strain ($M = 2.73$, S.E. = .04), and the passive OCB-I group showed the highest psychological strain ($M = 2.91$, S.E. = .09). However, only the mean scores of the vigorous and the passive OCB-I groups were significantly different ($\chi^2(1) = 25.05$, $p < .01$) and the mean scores of the vigorous and the moderate OCB-I groups were significantly different ($\chi^2(1) = 24.02$, $p < .01$).

Multinomial Logistic Regressions and One-way ANOVAs Using A Median Split Method

In LPA, I did not find four profiles of benefactor OCB-I and beneficiary OCB-I, and subsequently the majority of the proposed hypotheses could not be tested. In order to test the

proposed hypotheses, I used a median split method and artificially created four groups (i.e., vigorous, sacrificing, selfish, and passive OCB-I groups). I investigated the relationships between the predictors (i.e., conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction) and the four groups using multinomial logistic regressions and examined the relationships between the four groups and the outcomes (i.e., physical strain and psychological strain) using a series of one-way ANOVAs. Both Study 1 data and Study 2 data were used.

Based on Study 1 data, descriptive statistics showed that the median score for benefactor OCB-I was 3.64 and the median score for beneficiary OCB-I was 3.21. Based on these values, I created the proposed four groups. To be specific, participants who reported a benefactor OCB-I score *greater* than 3.64 and a beneficiary OCB-I score *greater* than 3.21 were classified in the “vigorous OCB-I group.” Participants showing a benefactor OCB-I score *greater* than 3.64 and a beneficiary OCB-I score *less* than 3.21 were classified in the “sacrificing OCB-I group.” Participants reporting a benefactor OCB-I score *less* than 3.64 and a beneficiary OCB-I score *greater* than 3.21 were classified in the “sacrificing OCB-I group.” Lastly, participants who reported a benefactor OCB-I score *less* than 3.64 and a beneficiary OCB-I score *less* than 3.21 were classified in the “passive OCB-I group.” Similarly, using Study 2 data, I created four groups based on the median score for benefactor OCB-I (3.50) and the median score for beneficiary OCB-I (3.00). Specific descriptive statistics for the four groups are provided in Table 15.

After creating the four groups, I performed multinomial logistic regressions using SPSS version 25 to test the relationships between the predictors and the four profiles. Table 16 presents results based on Study 1 data, and Table 17 presents results based on Study 2 data. First, using Study 1

Table 15. *Descriptive Statistics for the Four Groups*

Group	N	%	Benefactor OCB-I (Mean)	Benefactor OCB-I (SD)	Beneficiary OCB-I (Mean)	Beneficiary OCB-I (SD)
Study 1 Data						
Vigorous OCB-I Group	282	34.6%	4.22	0.38	3.95	0.45
Sacrificing OCB-I Group	115	14.1%	4.11	0.35	2.83	0.42
Selfish OCB-I Group	114	14.0%	3.43	0.17	3.51	0.18
Passive OCB-I Group	304	37.3%	3.04	0.49	2.71	0.44
Study 2 Data						
Vigorous OCB-I Group	204	33.2%	4.13	0.39	3.81	0.50
Sacrificing OCB-I Group	81	13.2%	3.95	0.32	2.65	0.38
Selfish OCB-I Group	79	12.8%	3.28	0.19	3.26	0.19
Passive OCB-I Group	251	40.8%	2.91	0.51	2.46	0.53

Note. OCB-I = Organizational citizenship behaviors toward individuals.

Table 16. A Summary of Multinomial Logistic Regressions with Study 1 Data (N = 815)

Profiles	Conscientiousness			Positive Affect			Other-oriented Empathy			Task Interdependence			Job Satisfaction		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
Passive vs. Vigorous (Passive as a reference)	.80 **	.13	2.23	1.18 **	.12	3.25	1.89 **	.18	6.62	.32 **	.06	1.38	.85 **	.11	2.33
Passive vs. Sacrificing (Passive as a reference)	.36 *	.16	1.44	.58 **	.14	1.78	1.46 **	.21	4.31	.11	.08	1.11	.37 **	.12	1.45
Passive vs. Selfish (Passive as a reference)	.14	.16	1.15	.42 **	.14	1.53	.63 **	.19	1.88	.06	.08	1.06	.36 **	.12	1.44
Selfish vs. Vigorous (Selfish as a reference)	.66 **	.17	1.94	.76 **	.15	2.13	1.26 **	.21	3.53	.27 **	.08	1.31	.48 **	.13	1.62
Selfish vs. Sacrificing (Selfish as a reference)	.23	.20	1.25	.16	.17	1.17	.83 **	.24	2.30	.05	.10	1.05	.01	.15	1.01
Sacrificing vs. Vigorous (Sacrificing as a reference)	.44 *	.17	1.55	.60 **	.15	1.82	.43 *	.21	1.54	.22 *	.09	1.24	.47 **	.13	1.61
Summary	Vigorous > Sacrificing > Passive, Vigorous > Selfish, Scarifying = Selfish, Passive = Selfish			Vigorous > (Scarifying = Selfish) > Passive			Vigorous > Scarifying > Selfish > Passive			Vigorous > (Scarifying = Selfish = Passive)			Vigorous > (Scarifying = Selfish) > Passive		

Note. * $p < .05$. ** $p < .01$.

Table 17. A Summary of Multinomial Logistic Regressions with Study 2 Data (N = 615)

Profiles	Conscientiousness			Positive Affect			Other-oriented Empathy			Task Interdependence			Job Satisfaction		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
Passive vs. Vigorous (Passive as a reference)	.41 *	.17	1.51	.96 **	.15	2.61	1.93 **	.23	6.85	.30 **	.07	1.35	.77 **	.13	2.16
Passive vs. Sacrificing (Passive as a reference)	.32	.22	1.38	.48 *	.18	1.61	1.50 **	.29	4.52	.24 *	.10	1.27	.06	.14	1.07
Passive vs. Selfish (Passive as a reference)	-.18	.21	.83	.16	.18	1.17	.88 **	.29	2.28	.20 *	.10	1.22	.51 **	.17	1.67
Selfish vs. Vigorous (Selfish as a reference)	.59 **	.22	1.81	.80 **	.19	2.23	1.05 **	.30	3.00	.09	.10	1.10	.26	.18	1.30
Selfish vs. Sacrificing (Selfish as a reference)	.50	.27	1.66	.32	.23	1.37	.61	.35	1.98	.04	.12	1.04	-.45 *	.19	.64
Sacrificing vs. Vigorous (Sacrificing as a reference)	.09	.23	1.09	.48 *	.19	1.62	.44	.29	1.51	.06	.10	1.06	.71 **	.16	2.03
Summary	Vigorous > (Selfish = Passive), Vigorous = Sacrificing, Selfish = Sacrificing, Passive = Sacrificing			Vigorous > (Sacrificing = Selfish), Vigorous > Passive, Sacrificing > Passive, Selfish = Passive			(Vigorous = Sacrificing) > Passive, Vigorous > Selfish, Sacrificing = Selfish			(Vigorous = Sacrificing = Selfish) > Passive			(Vigorous = Selfish) > (Sacrificing = Passive)		

Note. * $p < .05$. ** $p < .01$.

data, results revealed that conscientiousness significantly differentiated the four groups ($\chi^2(3) = 41.70, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher conscientiousness ratings were 2.23 times more likely to be in the vigorous OCB-I group ($OR = 2.23, p < .01$) and 1.44 times more likely to be in the sacrificing OCB-I group ($OR = 1.44, p < .05$); however, the effect of conscientiousness was not different between the passive OCB-I group and the selfish OCB-I group ($OR = 1.15, p > .05$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher conscientiousness ratings were 1.94 times more likely to be in the vigorous OCB-I group ($OR = 1.94, p < .01$) and 1.25 times more likely to be in the sacrificing OCB-I group ($OR = 1.25, p < .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, participants who had one-unit higher conscientiousness ratings were 1.55 times more likely to be in the vigorous OCB-I group ($OR = 1.55, p < .05$). Similarly, using Study 2 data, results found that conscientiousness significantly differentiated the four groups ($\chi^2(3) = 10.44, p < .05$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher conscientiousness ratings were 1.51 times more likely to be in the vigorous OCB-I group ($OR = 1.51, p < .05$); however, the effect of conscientiousness was not different between the passive OCB-I group and the sacrificing OCB-I group ($OR = 1.38, p > .05$) nor between the passive OCB-I group and the selfish OCB-I group ($OR = .83, p > .05$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher conscientiousness ratings were 1.81 times more likely to be in the vigorous OCB-I group ($OR = 1.81, p < .01$); yet, the effect of conscientiousness was not different between the selfish OCB-I group and the sacrificing OCB-I group ($OR = 1.66, p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, the effect of conscientiousness was not different between the

sacrificing OCB-I group and the vigorous OCB-I group ($OR = 1.09, p > .05$). In sum, trait conscientiousness most strongly predicted the profile groups in the following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2) the selfish OCB-I group, and (2 or 3) the passive OCB-I group, partially supporting Hypothesis 2.

Next, using Study 1 data, I found that positive affect significantly differentiated the four profiles ($\chi^2(3) = 112.67, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 3.25 times more likely to be in the vigorous OCB-I group ($OR = 3.25, p < .01$), 1.78 times more likely to be in the sacrificing OCB-I group ($OR = 1.78, p < .01$), and 1.53 times more likely to be in the selfish OCB-I group ($OR = 1.53, p < .01$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 2.13 times more likely to be in the vigorous OCB-I group ($OR = 2.13, p < .01$); however, the effect of positive affect was not different between the selfish OCB-I group and the sacrificing OCB-I group ($OR = 1.17, p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 1.82 times more likely to be in the vigorous OCB-I group ($OR = 1.82, p < .01$). Then, using Study 2 data, positive affect significantly differentiated the four profiles ($\chi^2(3) = 50.82, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 2.61 times more likely to be in the vigorous OCB-I group ($OR = 2.61, p < .01$) and 1.61 times more likely to be in the sacrificing OCB-I group ($OR = 1.61, p < .05$); however, the effect positive affect was not different between the passive OCB-I group and the selfish OCB-I group ($OR = 1.17, p > .05$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 2.23 times

more likely to be in the vigorous OCB-I group ($OR = 2.23, p < .01$); yet, the effect of positive affect was not different between the selfish OCB-I group and the sacrificing OCB-I group ($OR = 1.37, p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 1.62 times more likely to be in the vigorous OCB-I group ($OR = 1.62, p < .05$). Overall, positive affect most strongly predicted the profile groups in the following order: (1) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2) the selfish OCB-I group, and (3) the passive OCB-I group, fully supporting Hypothesis 3.

Based on Study 1 data, other-oriented empathy significantly differentiated the four profiles ($\chi^2(3) = 164.05, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher other-oriented empathy ratings were 6.62 times more likely to be in the vigorous OCB-I group ($OR = 6.62, p < .01$), 4.31 times more likely to be in the sacrificing OCB-I group ($OR = 4.31, p < .01$), and 1.88 times more likely to be in the selfish OCB-I group ($OR = 1.88, p < .01$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher other-oriented empathy ratings were 3.53 times more likely to be in the vigorous OCB-I group ($OR = 3.53, p < .01$), and 2.30 times more likely to be in the sacrificing OCB-I group ($OR = 2.30, p < .01$). Lastly, when the sacrificing OCB-I group was set as a reference group, participants who had one-unit higher positive affect ratings were 1.54 times more likely to be in the vigorous OCB-I group ($OR = 1.54, p < .05$).

Using Study 2 data, other-oriented empathy significantly differentiated the four profiles ($\chi^2(3) = 88.38, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher other-oriented empathy ratings were 6.89 times more likely to be in the vigorous group ($OR = 6.89, p < .01$), 4.46 times more likely to be in the sacrificing

group (OR = 4.46, $p < .01$), and 2.42 times more likely to be in the selfish group (OR = 2.42, $p < .01$). Also, when the selfish OCB-I group was set as a reference group, participants who had one-unit higher other-oriented empathy ratings were 2.85 times more likely to be in the vigorous OCB-I group (OR = 2.85, $p < .01$); however, the effect of other-oriented empathy was not different between the selfish OCB-I group and the sacrificing OCB-I group 1 (OR = 1.85, $p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, the effect of other-oriented empathy was not different between the sacrificing OCB-I group and the vigorous OCB-I group (OR = 1.55, $p > .05$). In sum, other-oriented empathy most strongly predicted the profile groups in the following order: (1 or 2) the vigorous OCB-I group, (2) the sacrificing OCB-I group, (2 or 3) the selfish OCB-I group, and (4) the passive OCB-I group, partially supporting Hypothesis 4.

With Study 1 data, task interdependence significantly differentiated the four profiles ($\chi^2(3) = 27.92, p < .01$). Specifically, when the passive OCB-I group was selected as a reference group, participants who had one-unit higher task interdependence ratings were 1.38 times more likely to be in the vigorous group (OR = 1.38, $p < .01$); however, the effect of task interdependence was not different between the passive OCB-I group and the sacrificing OCB-I group (OR = 1.11, $p > .05$) nor between the passive OCB-I group and the selfish OCB-I group (OR = 1.06, $p > .05$). When the selfish OCB-I group was selected as a reference group, participants who had one-unit higher task interdependence ratings were 1.31 times more likely to be in the vigorous OCB-I group (OR = 1.31, $p < .01$), while the effect of task interdependence was not different between the selfish OCB-I group and the sacrificing OCB-I group (OR = 1.05, $p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, participants who had one-unit higher task interdependence ratings were 1.24 times more likely to be in the

vigorous OCB-I group (OR = 1.24, $p < .05$). Based on Study 2 data, task interdependence significantly differentiated the four profiles ($\chi^2(3) = 18.70, p < .01$). Specifically, when the passive OCB-I group was set as a reference group, participants who had one-unit higher task interdependence ratings were 1.35 times more likely to be in the vigorous OCB-I group (OR = 1.35, $p < .01$), 1.27 times more likely to be in the sacrificing OCB-I group (OR = 1.27, $p < .05$), and 1.22 times more likely to be in the selfish OCB-I group (OR = 1.22, $p < .05$). Also, when the selfish OCB-I group was set as a reference group, the effect of task interdependence was not different between the selfish OCB-I group and the vigorous OCB-I group (OR = 1.10, $p > .05$) nor between the selfish OCB-I group and the sacrificing OCB-I group (OR = 1.04, $p > .05$). Lastly, when the sacrificing OCB-I group was set as a reference group, the effect of task interdependence was not different between the sacrificing OCB-I group and the vigorous OCB-I group (OR = 1.06, $p > .05$). Overall, the results based on Study 1 data and Study 2 data were quite different. Based on the results using Study 1 data, task interdependence only differentiated the vigorous OCB-I group from the other three groups; yet, based on the results using Study 2 data, task interdependence only differentiated the passive OCB-I group from the other three groups. One thing clear is that task interdependence less effectively differentiated the groups compared to the other predictors, partially supporting Hypothesis 5.

Finally, using Study 1 data, I found that job satisfaction significantly differentiated the four profiles ($\chi^2(3) = 77.21, p < .01$). When the passive OCB-I group was chosen as a reference group, participants who had one-unit higher job satisfaction ratings were 2.33 times more likely to be in the vigorous OCB-I group (OR = 2.33, $p < .01$), 1.45 times more likely to be in the sacrificing OCB-I group (OR = 1.45, $p < .01$), and 1.44 times more likely to be in the selfish OCB-I group (OR = 1.44, $p < .01$). Also, when the selfish OCB-I group was chosen as a

reference group, participants who had one-unit higher job satisfaction ratings were 1.62 times more likely to be in the vigorous OCB-I group ($OR = 1.62, p < .01$); however, the effect of job satisfaction was not different between the selfish OCB-I group and the sacrificing OCB-I group ($OR = 1.01, p > .05$). Lastly, when the sacrificing OCB-I group was chosen as a reference group, participants who had one-unit higher job satisfaction ratings were 1.61 times more likely to be in the vigorous OCB-I group ($OR = 1.61, p < .01$). Using Study 2 data, job satisfaction significantly differentiated the four profiles ($\chi^2(3) = 46.38, p < .01$). When the passive OCB-I group was selected as a reference group, participants who had one-unit higher job satisfaction ratings were 2.16 times more likely to be in the vigorous OCB-I group ($OR = 2.16, p < .01$) and 1.67 times more likely to be in the selfish OCB-I group ($OR = 1.67, p < .01$); however, the effect of job satisfaction was not different between the passive OCB-I group and the sacrificing OCB-I group ($OR = 1.07, p > .05$). When the selfish OCB-I group was selected as a reference group, participants who had one-unit higher job satisfaction ratings were .64 times *less* likely to be in the sacrificing OCB-I group ($OR = .64, p < .05$); yet, the effect of job satisfaction was not different between the selfish OCB-I group and the vigorous OCB-I group ($OR = 1.30, p > .05$). Lastly, when the sacrificing OCB-I group was selected as a reference group, participants who had one-unit higher job satisfaction ratings were 2.03 times more likely to be in the vigorous OCB-I group ($OR = 2.03, p < .01$). In sum, job satisfaction most significantly differentiated the groups in the following order: (1) the vigorous OCB-I group, (1 or 2) the selfish OCB-I group, (2) the sacrificing OCB-I group, and (3) the passive OCB-I group, partially supporting Hypothesis 6.

After investigating the relationships between the predictors and the four groups, I examined the relationships between the four groups and the outcomes (i.e., physical strain and

psychological strain) using a series of one-way ANOVAs on SPSS version 25. First, using Study 1 data, group differences in physical strain were investigated. The mean scores of the vigorous, the sacrificing, the selfish, and the passive OCB-I groups were 2.061 (SD = .57), 2.227 (SD = .54), 2.062 (SD = .61), and 2.059 (SD = .60), respectively. A one-way ANOVA revealed that physical strain was significantly different across the four groups ($F(3,811) = 2.73, p < .05$). Specifically, a Tukey post-hoc test indicated that the passive OCB-I group showed significantly lower physical strain than the sacrificing OCB-I group. Also, the vigorous OCB showed significantly lower physical strain than the sacrificing OCB-I group. In other words, the two matcher groups, the vigorous OCB-I and the passive OCB-I, appeared to experience lower physical strain than did the sacrificing OCB-I group, which seems to support equity theory more so than conservation of resources theory. Based on the results, Hypothesis 7a was supported and Hypothesis 8a was rejected. Using Study 2 data, group differences in physical strain were investigated. The mean scores of the vigorous, the sacrificing, the selfish, and the passive OCB-I groups were 1.492 (SD = .46), 1.550 (SD = .52), 1.499 (SD = .47), and 1.466 (SD = .43), respectively. A one-way ANOVA revealed that physical strain was not significantly different across the four groups ($F(3,413) = .47, p = .71$). Therefore, both Hypothesis 7a and Hypothesis 8a were not supported.

Next, group differences in psychological strain were investigated. Based on Study 1 data, I found that the mean scores of the vigorous, the sacrificing, the selfish, and the passive OCB-I groups were 2.498 (SD = .72), 2.824 (SD = .71), 2.719 (SD = .66), and 2.928 (SD = .63), respectively. Another one-way ANOVA was performed and showed that psychological strain was significantly different across the four groups ($F(3,811) = 20.22, p < .01$). Specifically, a Tukey post-hoc test found that the vigorous OCB-I group showed significantly lower

psychological strain than the sacrificing OCB-I group, the selfish OCB-I group, and the passive OCB-I group. Also, the selfish OCB-I group showed significantly lower psychological strain than the passive OCB-I group. Although the vigorous OCB-I group (one matcher group) showed the lowest psychological strain, the passive OCB-I group (the other matcher group) also showed the highest psychological strain. Therefore, Hypothesis 7b was partially supported and Hypothesis 8b was rejected. Using Study 2 data, the mean scores of the vigorous, the sacrificing, the selfish, and the passive OCB-I groups were 2.511 (SD = .65), 2.772 (SD = .68), 2.596 (SD = .51), and 2.797 (SD = .60), respectively. Another one-way ANOVA was performed and showed that psychological strain was significantly different across the four groups ($F(3,413) = 6.09, p < .01$). Specifically, a Tukey post-hoc test found that the vigorous OCB-I group showed significantly lower psychological strain than did the passive OCB-I group and the sacrificing OCB-I group; however, no additional differences were found. Again, the vigorous OCB-I group (one matcher group) showed the lowest psychological strain, while the passive OCB-I group (the other matcher group) showed the highest psychological strain. Therefore, Hypothesis 7b was partially supported and Hypothesis 8b was rejected.

CHAPTER FIVE: GENERAL DISCUSSION

The objective of this dissertation was to identify different membership profiles of benefactor OCB-I and beneficiary OCB-I, assess personality and situational predictor relationships associated with membership differentiation, and compare physical and psychological strain outcomes among the different profiles. In order to meet these objectives, I conducted two studies, Study 1 (cross-sectional study) and Study 2 (multiple time point study), using the three-step approach of latent profile analyses. In this general discussion section, a summary of results is presented, followed by theoretical implications, practical implications, limitations, and future research directions.

Summary of Results

Number of Profiles Between Benefactor OCB-I and Beneficiary OCB-I. Based on an expanded version of Grant's (2013) theory, I proposed that there would be four groups associated with benefactor OCB-I and beneficiary OCB-I (i.e., vigorous, sacrificing, selfish, and passive OCB-I groups). However, both Study 1 and Study 2 results revealed only three groups (i.e., vigorous, moderate, and passive) and all three groups appeared to be matchers who balance levels of giving and receiving OCB-I. The findings are contradictory to Grant's (2013) theory that proposes three fundamental styles of social interaction (i.e., givers, takers, and matchers). One possible explanation for the findings is the specific nature of relationships and interactions among people in the workplace. In work settings, people tend to maintain social exchange relationships rather than communal relationships and people give and take resources based on social exchange rules (e.g., Cropanzano & Mitchell, 2005). Due to dominant social exchange

rules in the workplace, only matcher groups might be found. However, in settings where communal relationships are prominent, different social interaction styles may emerge. For example, in family settings, mothers are likely to adopt the “giver” social interaction style, while young daughters are likely to show the “taker” social interaction style. Another explanation for this finding is self-report biases. It is possible that givers, takers, and matchers may exist in the workplace. However, people may avoid admitting that they help others more or less than they receive help from others (Adams, 1963). If people admitted that they helped more than they received help, they could feel that they are being taken advantage of and consequently be more susceptible to feeling anger. Similarly, if people reported that they helped less than they received help, they could feel guilt based on the idea that they took advantage of others. As a way to maintain emotional stability, people might report that they helped others and received help from others relatively similarly, and as a consequence, givers and takers might appear to be matchers.

Antecedent Effects in Relation to the Profiles. Based on theory and existing research, I selected a set of antecedents thought to significantly differentiate benefactor OCB-I and beneficiary OCB-I profiles. Some similarities and differences were found between Study 1 results and Study 2 results. In terms of similarities, both Study 1 and Study 2 results found that the antecedents of positive affect, other-oriented empathy, task interdependence, and job satisfaction significantly differentiated benefactor OCB-I and beneficiary OCB-I profiles. Specifically, both studies uncovered that other-oriented empathy most significantly differentiated the three profiles. Given that OCB-I is strongly influenced by personality factors in general (e.g., Borman & Motowidlo, 1993), this finding was not surprising. Other-oriented empathy is conceptually a more proximal personality predictor of OCB-I than are conscientiousness and positive affect, which are considered as more distal personality predictors of OCB-I (e.g., Taylor,

Kluemper, & Mossholder, 2010). Due to the proximity of other-oriented empathy to OCB-I compared to the other personality predictors, other-oriented empathy might show the strongest ability to differentiate the three profiles.

Although there were some similarities between Study 1 and Study 2 results, some differences were also found. In Study 1, conscientiousness significantly differentiated the vigorous OCB-I group from the moderate OCB-I group. However, in Study 2, conscientiousness did not significantly differentiate the profiles. In other words, the vigorous, the moderate, and the passive OCB-I groups appeared to have a similar level of conscientiousness. The inconsistent findings between Study 1 and Study 2 might stem from the different strengths of the relationship between conscientiousness and beneficiary OCB-I. In Study 1, the relationship between conscientiousness and beneficiary OCB-I was significant ($r = .21, p < .01$); however, in Study 2, it was not significant ($r = .06, p > .05$). In order to clarify the inconstant findings in the effect of conscientiousness on differentiating the profiles and in the relationship between conscientiousness and beneficiary OCB-I, more empirical studies should be conducted.

Different Health Outcomes Between the Profiles. Physical and psychological strain outcomes were compared between the three profile groups. Again, there were some similarities and differences between Study 1 results and Study 2 results. Mainly, Study 1 and Study 2 found similar results for psychological strain, while revealing different results for physical strain. Both Study 1 and Study 2 found that the vigorous OCB-I group reported the lowest psychological strain. The findings seem to support the idea that helping and frequent social interactions are beneficial for psychological health (e.g., Ellison, 1991; Gecas & Burke, 1995; Schwartz, Meisenhelder, Yusheng, & Reed, 2003).

For physical strain, Study 1 and Study 2 showed different results. Study 1 found that the passive OCB-I group showed the lowest physical strain, the vigorous OCB-I group experienced moderate physical strain, and the moderate OCB-I group reported the highest physical strain. However, Study 2 did not find significant differences in physical strain across the three groups. The non-significant findings in Study 2 might result from the compressed timeframe for physical strain to accumulate (i.e., *past week* versus in general).

In Study 1 findings, the passive OCB-I group showed the lowest physical strain. One possible reason for this finding is the lack of interactions with other employees among the passive OCB-I group members. Based on the low engagement in giving and receiving OCB-I, individuals in the passive OCB-I group likely interact with other employees less compared to the vigorous and moderate OCB-I groups. This lack of interaction might reduce chances to catch flu or cold from other employees or to experience muscle pain from physically helping others.

It is interesting that physical strain and psychological strain exhibited differential results. In Study 1, the passive OCB-I group showed the lowest physical strain, while showing the highest psychological strain. The divergent findings between physical strain and psychological strain are unusual given that physical strain and psychological strain are often explained together nomologically under one shared higher order construct, health. It insinuates that giving OCB-I and receiving OCB-I relate to health in a complex way. When giving OCB-I and receiving OCB-I affect health, it seems that there are two separate pathways: physical and psychological. Future research should further look into the discrete pathways of physical and psychological strain, especially in relation to OCB.

Supplemental Analyses. Two supplemental analyses were performed. First, given that each benefactor OCB-I and beneficiary OCB-I could be further differentiated into person-

focused and task-focused types, LPA was performed using four indicators (person-focused benefactor OCB-I, task-focused benefactor OCB-I, person-focused beneficiary OCB-I, and task-focused beneficiary OCB-I). Results found three-profile groups (vigorous, moderate, and passive OCB-I groups). The findings were largely consistent with the findings of Study 1 and Study 2 based on the two indicators (benefactor OCB-I and beneficiary OCB-I). It appears that the specific types of benefactor OCB-I and beneficiary OCB-I did not affect the membership of benefactor OCB-I and beneficiary OCB-I, supporting the robustness of the three-profile membership model.

Second, the proposed four groups were artificially created based on the median scores of benefactor OCB-I and beneficiary OCB-I. Relationships between the predictors and the four groups were investigated using multinomial logistic regressions and the relationships between the four groups and the outcomes were examined using a series of one-way ANOVAs. Both results using Study 1 and Study 2 data were largely congruent, partially supporting most hypotheses. Overall, all predictors (conscientiousness, positive affect, other-oriented empathy, task interdependence, and job satisfaction) most strongly predicted the vigorous OCB-I group and least strongly predicted the passive OCB-I group. Also, most predictors showed no significant prediction differences between the sacrificing and the selfish OCB-I groups; however, as an exception, other-oriented empathy more strongly predicted the sacrificing OCB-I group than the selfish OCB-I group. This is consistent with previous research (for reviews, see Davis, 1996) postulating that people with other-oriented empathy are more likely to be sacrificing than selfish. In regard to physical strain outcomes, results based on Study 1 data and results based on Study 2 data were dissimilar. Specifically, results based on Study 1 data found that the two matcher groups, the vigorous OCB-I group and the passive OCB-I group, experienced lower

physical strain than did the sacrificing OCB-I group. Findings seem to support equity theory more so than conservation of resources theory. On the other hand, results based on Study 2 data did not find significant differences in physical strain across the four groups. One possible reason for the inconsistent findings based on Study 1 data and Study 2 data is the different reference to time used in Study 1 (*general* physical and psychological strain information) versus Study 2 (*past week* physical and psychological strain information). Possibly, the two matcher groups, the vigorous OCB-I group and the passive OCB-I group, experience lower physical strain than does the sacrificing OCB-I group, in general; however, within a week, a different level of physical strain may not emerge. It may infer different accumulated effects of physical strain among the four groups. However, more rigorous longitudinal research should be conducted with different time intervals in order to fully explore and demonstrate accumulated effects of physical strain among the different groups of benefactor OCB-I and beneficiary OCB-I. For psychological strain, results based on Study 1 data and based on Study 2 data were similar. Specifically, both results found that the vigorous OCB-I group (one matcher group) showed the lowest psychological strain; yet the passive OCB-I group (the other matcher group) also showed the highest psychological strain. Although the findings for psychological strain do not fully support equity theory, they highlight the importance of differentiating discrete types of matcher groups, especially when psychological strain is considered as an outcome variable. Furthermore, the findings seem to provide empirical evidence that frequent social exchanges and interactions are more beneficial for people's psychological health than rare social exchanges and interactions (e.g., Ellison, 1991; Gecas & Burke, 1995; Schwartz et al., 2003).

Theoretical Implications

The current research provides several theoretical implications. First, this research tests and expands Grant's (2013) theory by demonstrating different types of matcher groups. Grant's theory has been discussed in popular press articles (e.g., Ash, 2017; Chan, 2014); yet, the theory has not been empirically tested. This research tested Grant's theory and found lack of empirical support. In particular, the results did not reveal giver and taker groups. Instead, the results showed three types of matcher groups: a high matcher group (the vigorous OCB-I group), a middle matcher group (the moderate OCB-I group), and a low matcher group (the passive OCB-I group). These findings indicate that Grant's theoretical model might not be applicable in work settings where social exchange relationships are prominent. Rather, the findings seem to strongly buttress social exchange theory and demonstrate the power of social exchange rules among workers. Moreover, the findings suggest that the matcher group in Grant's theory should be further differentiated into high, middle, and low matcher groups. Overall, this research offers significant theoretical implications given that it empirically tests a popular theory, disputes it in work settings, and expands the theory by showing different types of matcher groups.

Next, this research helps reconcile contradictory theoretical arguments and empirical findings in the relationship between OCB (or helping) and health. Some researchers argue that OCB (or helping) requires people's limited resources and in turn, it should negatively affect employee health (e.g., Bolino et al., 2015). However, other scholars assert that OCB (or helping) enhances a sense of social worth and self-efficacy (Alessandri, Caprara, Eisenberg, & Steca, 2009; Grant & Gino, 2010) and it should produce positive outcomes including positive health (e.g., Schwartz et al., 2003). Empirically, both negative and positive relationships were found between OCB (or helping) and health (e.g., Bolino et al., 2015). In this research, incomparable

results were found between physical strain and psychological strain. Specifically, the findings insinuated that engaging in high levels of giving OCB-I and receiving OCB-I (the vigorous OCB-I group) would be beneficial for psychological health, but not beneficiary for physical health. Similarly, engaging in low levels of giving OCB-I and receiving OCB-I (the passive OCB-I group) would be beneficial for physical health, but detrimental to psychological health. This discrepancy between physical and psychological health outcomes might be the cause of inconsistent conclusions across studies in the relationship between OCB (or helping) and health. In other words, depending on the operational definition of health, the conclusion might differ. By demonstrating incongruent outcomes between physical strain and psychological strain, this research provides a clue for the inconsistent conclusions across studies in regard to the relationship between OCB (or helping) and health. In addition, the inconsistent findings between physical strain and psychological strain infer that giving and receiving OCB-I might affect health through two separate pathways: physical and psychological. This inference calls for more theoretical papers that can explain the two separate pathways and offers empirical evidence for future theories.

Third, this research tests two competing theoretical perspectives based on two major theories in the OCB literature. Specifically, based on conservation of resources theory, it was hypothesized that the selfish OCB-I group would show the lowest physical and psychological strain as the group would have extra resources. In contrast, according to equity theory, the vigorous OCB-I group and the passive OCB-I group would show the lowest physical and psychological strain as the groups would have a sense of equity. In the supplemental analyses, results generally supported equity theory more so than conservation of resources theory in the contexts of OCB-I and health. This research contributes to theoretical implications by testing

conflicting hypotheses generated from two major theories in the OCB literature and revealing that equity theory is more relevant than conservation of resources theory in OCB-I and health research.

Practical Implications

This research educates organizations and employees that workers can be classified into either vigorous, moderate, or passive OCB-I group and that group membership matters with regard to physical strain and psychological strain. These results indicate that individuals who give and receive a moderate level of OCB-I may be more susceptible to physical strain. In contrast, employees who engage in a low level of giving and receiving OCB-I appear to be more vulnerable to psychological strain. Tentatively these results suggest that encouraging high levels of giving OCB-I and receiving OCB-I may offer the best employee health outcomes.

Limitations and Future Research Directions

Several limitations associated with the current research should be noted. First, all variables were assessed using self-report measures. Although self-report measures can be effectively used to measure internal states such as job satisfaction, they may be less effective for measuring actual behaviors such as benefactor OCB-I and objective situations such as task interdependence. This is because self-report measures are often influenced by multiple factors including dispositional characteristics of participants, situational characteristics, social expectations, and sensitivity of construct (Donaldson & Grant-Vallone, 2002). In order to determine the generalizability of the current findings, objective measures or multi-source measures should be used in addition to self-report measures. In addition, self-report measures tend to yield common method biases and inflate relationships (Podsakoff et al., 2003). By using

objective measures or multi-source measures, the common method bias and relationship inflation issues would be also mitigated.

Second, Study 1 and Study 2 participants were generally highly educated and predominantly white. Also, all participants worked and lived in the United States. Therefore, it is unclear whether the findings would hold across different samples, especially those with low education backgrounds, with minority backgrounds, and from different countries. Future researchers should replicate the findings with more diverse participants, particularly in terms of education level, ethnicity, and nationality.

Third, I chose broad concepts of health, physical strain and psychological strain, as operational definitions of employee health, based on previous studies. However, the broad operational definitions of health might mask interesting associations between the latent groups and health outcomes. In order to deepen current findings and solve the complex relationship between OCB and health, more specific operational definitions of health should be used in future investigations.

Fourth, although this research examined both benefactor OCB-I and beneficiary OCB-I, targets of benefactor OCB-I and sources of beneficiary OCB-I were not examined. Giving OCB-I to a supervisor and giving OCB-I to a subordinate might show different health consequences; similarly, receiving OCB-I from a supervisor and receiving OCB-I from a colleague might reveal different health consequences. Investigating specific targets of benefactor OCB-I and specific sources of beneficiary OCB-I would enrich the literature and expand current findings.

Fifth, in Study 2, the time intervals were one-week. I selected one-week because one-week seemed to be long enough for employees to have a chance to engage in OCB-I while short enough to establish links between the proposed variables. However, the positively skewed

distribution of physical strain in Study 2 insinuates that one-week might not be long enough to show the effects of OCB-I on physical strain. Future researchers should investigate the temporal effects of benefactor and beneficiary OCB-I on physical strain with longer time intervals.

Several additional future research directions emerge from the study findings. First, future research should empirically assess Grant's (2013) theory in different settings where communal relationships are dominant. In this research, I only found matcher groups and did not find giver and taker groups. One potential reason for the findings is that I used working samples in work settings where social exchange relationships are prevailing. As addressed in the summary section, different profiles may exist in different settings where communal relationships are primary. Second, I used Settoon and Mossholder's (2002) measure to assess benefactor OCB-I and modified it to measure beneficiary OCB-I. However, there are other OCB measures (e.g., Williams & Anderson, 1991), and future research should test whether the same groups are replicated using different OCB measures in order to buttress the current findings. Lastly, I measured and investigated *typical* benefactor OCB-I and *typical* beneficiary OCB-I. To further explore benefactor OCB-I, beneficiary OCB-I, and their interactive nature, I recommend future researchers measure and examine *daily* benefactor OCB-I and *daily* beneficiary OCB-I using an experience sampling method. Such investigations might shed light on how employees develop a matching style of benefactor OCB-I and beneficiary OCB-I in the workplace.

Conclusion

The beneficiary side of organizational citizenship behaviors toward individuals (OCB-I) has been neglected in the literature; however, it should be studied along with the benefactor side of OCB-I in order to holistically understand OCB phenomena. Specifically, given that the two sides of OCB-I tend to affect each other and co-exist within individuals, this research adopted a

person-centered approach and investigated different latent groups of benefactor OCB-I and beneficiary OCB-I. In addition, predictors and strain outcomes of the latent groups were examined. This research broadens the existing literature by uncovering different groups in giving and receiving OCB-I, suggesting predictors that are responsible for the group differentiation, and comparing health consequences among the groups.

REFERENCES

- Adams, J. S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology, 67*(5), 422-436.
- Adams, J. S. (1965). Inequity in social exchange. *Advances in Experimental Social Psychology, 2*, 267-299.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.
- Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control, 19*(6), 716-723.
- Alessandri, G., Caprara, G. V., Eisenberg, N., & Steca, P. (2009). Reciprocal relations among self-efficacy beliefs and prosociality across time. *Journal of Personality, 77*(4), 1229-1259.
- Allen, T. D. (2006). Rewarding good citizens: The relationship between citizenship behavior, gender, and organizational rewards. *Journal of Applied Social Psychology, 36*(1), 120-143.
- Ash, E. (2017, May 8). How to spot givers, takers, and matchers. *SmartCompany*.
<https://www.smartcompany.com.au/people-human-resources/spot-givers-takers-matchers>.
- Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance, 32*(3), 370-398.

- Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: Three-step approaches using M plus. *Structural Equation Modeling: A Multidisciplinary Journal*, 21(3), 329-341.
- Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly: Management Information Systems*, 35(4), 831-858.
- Bachrach, D. G., Powell, B. C., Collins, B. J., & Richey, R. G. (2006). Effects of task interdependence on the relationship between helping behavior and group performance. *Journal of Applied Psychology*, 91(6), 1396-1405.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328.
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43(1), 83-104.
- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, 22(3), 187-200.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, 52(4), 366-380.
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. *Successful Aging: Perspectives from the Behavioral Sciences*, 1(1), 1-34.
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next?. *International Journal of Selection and assessment*, 9(1-2), 9-30.

- Bateman, T. S., & Organ, D. W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee "citizenship". *Academy of Management Journal*, 26(4), 587-595.
- Batson, C. D., & Shaw, L. L. (1991). Evidence for altruism: Toward a pluralism of prosocial motives. *Psychological Inquiry*, 2(2), 107-122.
- Battistoni, E., & Colladon, A. F. (2014). Personality correlates of key roles in informal advice networks. *Learning and Individual Differences*, 34, 63-69.
- Beauducel, A., & Herzberg, P. Y. (2006). On the performance of maximum likelihood versus means and variance adjusted weighted least squares estimation in CFA. *Structural Equation Modeling*, 13(2), 186-203.
- Beer, M. (1966). *Leadership, employee needs, and motivation* (Monograph No. 129). Columbus, OH: Bureau of Business Research, Ohio State University.
- Blakely, G. L., Andrews, M. C., & Moorman, R. H. (2005). The moderating effects of equity sensitivity on the relationship between organizational justice and organizational citizenship behaviors. *Journal of Business and Psychology*, 20(2), 259-273.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Borman, W. C., & Motowidlo, S. M. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco: Jossey-Bass.
- Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment*, 9(1-2), 52-69.

- Boswell, W. R., Olson-Buchanan, J. B., & LePine, M. A. (2004). Relations between stress and work outcomes: The role of felt challenge, job control, and psychological strain. *Journal of Vocational Behavior*, 64(1), 165-181.
- Bowman, G. D., & Stern, M. (1995). Adjustment to occupational stress: The relationship of perceived control to effectiveness of coping strategies. *Journal of Counseling Psychology*, 42(3), 294-303.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage focus editions*, 154, 136-136.
- Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1979). *The Michigan Organizational Assessment Questionnaire*. Unpublished manuscript, University of Michigan, Ann Arbor, Michigan.
- Caplan, R. D., Cobb, S., French, J. R., Harrison, R. V., & Pinneau, S. R. (1975). *Job demands and worker health: Main effects and occupational differences*. U.S. Department of Health, Education, and Welfare, NIOSH Publication No. 75-160. Washington, DC: U.S. Government Printing Office.
- Carlson, M., Charlin, V., & Miller, N. (1988). Positive mood and helping behavior: A test of six hypotheses. *Journal of Personality and Social Psychology*, 55, 211-229.
- Chan, A. L. (2014, April 24). Are you a giver, taker or matcher? Adam Grant shares how it could affect your success. *HuffPost*, Retrieved from https://www.huffingtonpost.com/2014/04/24/adam-grant-thrive_n_5209534.html.
- Chang, C. H., Rosen, C. C., & Levy, P. E. (2009). The relationship between perceptions of organizational politics and employee attitudes, strain, and behavior: A meta-analytic examination. *Academy of Management Journal*, 52(4), 779-801.

- Che, X. (2012). *An exploratory study of reception of organizational citizenship behaviors and work related outcomes: It is good for your co-workers*. Unpublished master's thesis, University of South Florida.
- Che, X. (2015). *Effects of occupational stressors on nurses' safety performance and well-being: A within-individual study*. Unpublished doctoral dissertation, University of South Florida.
- Chiaburu, D. S., Oh, I. S., Berry, C. M., Li, N., & Gardner, R. G. (2011). The five-factor model of personality traits and organizational citizenship behaviors: a meta-analysis. *Journal of Applied Psychology, 96*(6), 1140-1166.
- Clark, S. L., & Muthén, B. (2009). *Relating latent class analysis results to variables not included in the analysis*. Received from <https://www.statmodel.com/download/relatinglca.pdf>.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300-314.
- Coke, J. S., Batson, C. D., & McDavis, K. (1978). Empathic mediation of helping: A two-stage model. *Journal of Personality and Social Psychology, 36*(7), 752-766.
- Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological assessment, 4*(1), 5-13.
- Craig, S., & Smith, J. (2000, April). Integrity and personality: A person-oriented investigation. In D. Norris (Chair), *Patterns, Patterns Everywhere! Application of Person-oriented Methodology to Problems in Industrial-Organizational Psychology*. Symposium presented at the 15th annual meeting of the Society for Industrial and Organizational Psychology in New Orleans, Louisiana.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*(6), 874-900.

- Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior, 58*(2), 164-209.
- Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science, 32*(5), 554-571.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85.
- Davis, M.H. (1996) *Empathy: A Social Psychological Approach*. Boulder, CO: Westview.
- Decker, P. J., & Borgen, F. H. (1993). Dimensions of work appraisal: Stress, strain, coping, job satisfaction, and negative affectivity. *Journal of Counseling Psychology, 40*(4), 470-478.
- Deckop, J. R., Cirka, C. C., & Andersson, L. M. (2003). Doing unto others: The reciprocity of helping behavior in organizations. *Journal of Business Ethics, 47*(2), 101-113.
- Deluga, R. J. (1994). Supervisor trust building, leader-member exchange and organizational citizenship behavior. *Journal of Occupational and Organizational Psychology, 67*(4), 315-326.
- Demerouti, E., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology, 15*(3), 209-222.
- DeSimone, J. A., Harms, P. D., & DeSimone, A. J. (2015). Best practice recommendations for data screening. *Journal of Organizational Behavior, 36*(2), 171-181.
- Dolan, C. V. (1994). Factor analysis of variables with 2, 3, 5, and 7 response categories: A comparison of categorical variable estimators using simulated data. *British Journal of Mathematical and Statistical Psychology, 47*(2), 309-326.

- Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology, 17*(2), 245-260.
- Eatough, E. M., Chang, C. H., Miloslavic, S. A., & Johnson, R. E. (2011). Relationships of role stressors with organizational citizenship behavior: a meta-analysis. *Journal of Applied Psychology, 96*(3), 619-632.
- Ellison, C. G. (1991). Religious involvement and subjective well-being. *Journal of Health and Social Behavior, 32*(1), 80-99.
- Emerson, R. (1976). Social exchange theory. *Annual Review of Sociology, 2*, 335-362.
- Firth, R. (1967). *Themes in economic anthropology*. London: Tavistock
- Fisher, C. D. (2000). Mood and emotions while working: Missing pieces of job satisfaction?, *Journal of Organizational Behavior, 21*, 185-202.
- Flynn, F. J., Reagans, R. E., Amanatullah, E. T., & Ames, D. R. (2006). Helping one's way to the top: Self-monitors achieve status by helping others and knowing who helps whom. *Journal of Personality and Social Psychology, 91*(6), 1123-1137.
- Foa, U. G., & Foa, E. B. (1974). *Societal structures of the mind*. Springfield, IL: Charles C. Thomas Publisher.
- Foa, U. G., & Foa, E. B. (1980). Resource theory: Interpersonal behavior as exchange. In K. J. Gergen, M. S. Greenberg, & R. H. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 77-94). New York, NY: Plenum Press.
- Fogarty, G. J., Machin, M. A., Albion, M. J., Sutherland, L. F., Lalor, G. I., & Revitt, S. (1999). Predicting occupational strain and job satisfaction: The role of stress, coping, personality, and affectivity variables. *Journal of Vocational Behavior, 54*(3), 429-452.

- Ford, M. T., Cerasoli, C. P., Higgins, J. A., & Decesare, A. L. (2011). Relationships between psychological, physical, and behavioral health and work performance: A review and meta-analysis. *Work & Stress*, 25(3), 185-204.
- Gecas, V., & Burke, P. J. (1995). Self and identity. In K. S. Cook, G. A. Fine, & J. S. House (Eds.), *Sociological perspectives on social psychology* (pp. 41-67). Boston: Allyn and Bacon.
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference*, 17.0 update. (10th ed.) Boston, MA: Pearson.
- George, J. M., & Brief, A. P. (1992). Feeling good-doing good: a conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin*, 112(2), 310-329.
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48(1), 26-34.
- Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. *Personality Psychology in Europe*, 7(1), 7-28.
- Graen, G. B., & Uhl-Bein, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2), 219-247.
- Graham, J. W. (1991). An essay on organizational citizenship behavior. *Employee Responsibilities and Rights Journal*, 4(4), 249-270.

- Grant, A. M. (2013). *Give and Take: Why helping others drives our success*. New York, NY: Penguin.
- Grant, A. M., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. *Journal of Personality and Social Psychology, 98*(6), 946-955.
- Grodal, S., Nelson, A. J., & Siino, R. M. (2015). Help-seeking and help-giving as an organizational routine: Continual engagement in innovative work. *Academy of Management Journal, 58*(1), 136-168.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied psychology, 60*(2), 159-170.
- Halbesleben, J. R., & Bowler, W. M. (2007). Emotional exhaustion and job performance: The mediating role of motivation. *Journal of Applied Psychology, 92*(1), 93-106.
- Haynes, C. E., Wall, T. D., Bolden, R. I., Stride, C., & Rick, J. E. (1999). Measures of perceived work characteristics for health services research: Test of a measurement model and normative data. *British Journal of Health Psychology, 4*(3), 257-275.
- Hipp, J. R., & Bauer, D. J. (2006). Local solutions in the estimation of growth mixture models. *Psychological Methods, 11*(1), 36-53.
- Hobfoll, S. E. (1988). *The ecology of stress*. Washington, DC: Hemisphere.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology, 50*(3), 337-370.

- Hobfoll, S. E. (2011). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology*, 84(1), 116-122.
- Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, 63, 597-606.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Huang, J. L., Curran, P. G., Keeney, J., Poposki, E. M., & DeShon, R. P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology*, 27(1), 99-114.
- Jex, S. M. (1998). *Stress and job performance: Theory, research, and implications for managerial practice*. Thousand Oaks, CA: Sage.
- Joireman, J., Kamdar, D., Daniels, D., & Duell, B. (2006). Good citizens to the end? It depends: empathy and concern with future consequences moderate the impact of a short-term time horizon on organizational citizenship behaviors. *Journal of Applied Psychology*, 91(6), 1307-1320.
- Judge, T. A., Thoresen, C. J., Pucik, V., & Welbourne, T. M. (1999). Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology*, 84(1), 107-122.
- Kamdar, D., McAllister, D. J., & Turban, D. B. (2006). "All in a day's work": how follower individual differences and justice perceptions predict OCB role definitions and behavior. *Journal of Applied Psychology*, 91(4), 841-855.

- Kaplan, S., Bradley, J. C., Luchman, J. N., & Haynes, D. (2009). On the role of positive and negative affect in job performance: a meta-analytic investigation. *Journal of Applied Psychology, 94*(1), 162-176.
- Kelley, R. E. (1988). In praise of followers. *Harvard Business Review, 66*, 142-148.
- Konovsky, M. A., & Cropanzano, R. (1991). Perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. *Journal of Applied Psychology, 76*(5), 698-707.
- Konovsky, M. A., & Pugh, S. D. (1994). Citizenship behavior and social exchange. *Academy of Management Journal, 37*(3), 656-669.
- Koopman, J., Lanaj, K., & Scott, B. A. (2016). Integrating the bright and dark sides of OCB: A daily investigation of the benefits and costs of helping others. *Academy of Management Journal, 59*(2), 414-435.
- Lanaj, K., Johnson, R. E., & Wang, M. (2016). When lending a hand depletes the will: The daily costs and benefits of helping. *Journal of Applied Psychology, 101*(8), 1097-1110.
- Lanaj, M. C., Hsiung, H. H., Harvey, J., & LePine, J. A. (2015). "Well, I'm tired of tryin'!" Organizational citizenship behavior and citizenship fatigue. *Journal of Applied Psychology, 100*(1), 56-74.
- Lang, J., Thomas, J. L., Bliese, P. D., & Adler, A. B. (2007). Job demands and job performance: The mediating effect of psychological and physical strain and the moderating effect of role clarity. *Journal of Occupational Health Psychology, 12*(2), 116-124.
- Lanza, S. T., Tan, X., & Bray, B. C. (2013). Latent class analysis with distal outcomes: A flexible model-based approach. *Structural Equation Modeling, 20*, 1-26

- Larsen, R. J., & Kasimatis, M. (1991). Day-to-day physical symptoms: Individual differences in the occurrence, duration, and emotional concomitants of minor daily illnesses. *Journal of Personality, 59*(3), 387-423.
- Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology, 87*(1), 131-142.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*(2), 123-133.
- LePine, J. A., Erez, A., & Johnson, D. E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology, 87*(1), 52-65.
- Licht, M. H. (1995). Multiple regression and correlation. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 19-64). Washington, DC: American Psychological Association.
- Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management, 15*, 47-120.
- Lo, Y., Mendell, N., & Rubin, D. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*(3), 767-778.
- Lubke, G. H., & Muthén, B. (2005). Investigating population heterogeneity with factor mixture models. *Psychological Methods, 10*(1), 21-39.
- Malatesta, R. M. (1995). *Understanding the dynamics of organizational and supervisory commitment using a social exchange framework*. Unpublished doctoral dissertation, Wayne State University.

- Marsh, H. W., Lüdtke, O., Trautwein, U., & Morin, A. J. (2009). Classical latent profile analysis of academic self-concept dimensions: Synergy of person-and variable-centered approaches to theoretical models of self-concept. *Structural Equation Modeling, 16*(2), 191-225.
- Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management journal, 43*(4), 738-748.
- McCullough, M. E., Tsang, J. A., & Emmons, R. A. (2004). Gratitude in intermediate affective terrain: Links of grateful moods to individual differences and daily emotional experience. *Journal of Personality and Social Psychology, 86*(2), 295-309.
- McLachlan, G., & Peel, D. (2000). *Finite mixture models*. New York: Wiley.
- Meyer, J. P., & Morin, A. J. (2016). A person-centered approach to commitment research: Theory, research, and methodology. *Journal of Organizational Behavior, 37*, 584–612.
- Molm, L. D. (2000). Theories of social exchange and exchange networks. In G. Ritzer & B. Smart (Eds.), *Handbook of social theory* (pp. 260-272). Thousand Oaks, CA: Sage.
- Molm, L. D. (2003). Theoretical comparisons of forms of exchange. *Sociological Theory, 21*(1), 1-17.
- Molm, L. D., Takahashi, N., & Peterson, G. (2000). Risk and trust in social exchange: An experimental test of a classical proposition. *American Journal of Sociology, 105*, 1396-1427.
- Moon, H., Van Dyne, L., & Wrobel, K. (2004). The circumplex model and the future of organizational citizenship behavior research. In D. Turnipseed (Ed.), *Handbook of*

organizational citizenship behavior: A review of “good soldier” activity in organizations (pp. 1-31). New York: Nova Science Publishers.

Moorman, R. H. (1991). Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship?. *Journal of Applied Psychology, 76*(6), 845-855.

Moorman, R. H., & Blakely, G. L. (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. *Journal of Organizational Behavior, 16*(2), 127-142.

Moorman, R. H., Blakely, G. L., & Niehoff, B. P. (1998). Does perceived organizational support mediate the relationship between procedural justice and organizational citizenship behavior?. *Academy of Management journal, 41*(3), 351-357.

Morin, A. J., Vandenberghe, C., Boudrias, J. S., Madore, I., Morizot, J., & Tremblay, M. (2011). Affective commitment and citizenship behaviors across multiple foci. *Journal of Managerial Psychology, 26*(8), 716-738.

Motowidlo, S. J. (2000). Some basic issues related to contextual performance and organizational citizenship behavior in human resource management. *Human Resource Management Review, 10*(1), 115-126.

Motowidlo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance, 10*(2), 71-83.

Mueller, J. S., & Kamdar, D. (2011). Why seeking help from teammates is a blessing and a curse: a theory of help seeking and individual creativity in team contexts. *Journal of Applied Psychology, 96*(2), 263-276.

- Nadler, A., & Jeffrey, D. (1986). The role of threat to self-esteem and perceived control in recipient reaction to help: Theory development and empirical validation. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 81-122). New York, NY: Academic Press.
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling, 14*(4), 535-569.
- O'driscoll, M. P., Ilgen, D. R., & Hildreth, K. (1992). Time devoted to job and off-job activities, interrole conflict, and affective experiences. *Journal of Applied Psychology, 77*(3), 272-279.
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10*(2), 85-97.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*(4), 775-802.
- Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: Its nature, antecedents, and consequences*. Thousand Oaks: CA: Sage Publications.
- Penner, L. A., Fritzsche, B. A., Craiger, J. P., & Freifeld, T. R. (1995). Measuring the prosocial personality. *Advances in Personality Assessment, 10*, 147-163.
- Podsakoff, N. P., Podsakoff, P. M., MacKenzie, S. B., Maynes, T. D., & Spoelma, T. M. (2014). Consequences of unit-level organizational citizenship behaviors: A review and

- recommendations for future research. *Journal of Organizational Behavior*, 35(S1), S87-S119.
- Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual-and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, 94(1), 122-141.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142.
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26(3), 513-563.
- Ramaswamy, V., DeSarbo, W. S., Reibstein, D. J., & Robinson, W. T. (1993). An empirical pooling approach for estimating marketing mix elasticities with PIMS data. *Marketing Science*, 12(1), 103-124.
- Roulin, N., & Krings, F. (2016). When winning is everything: the relationship between competitive worldviews and job applicant faking. *Applied Psychology*, 65(4), 643-670.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600-619.

- Salanova, M., Agut, S., & Peiró, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology, 90*(6), 1217-1227.
- Schwartz, C. E., Meisenhelder, J. B., Yusheng, A., & Reed, G. (2003). Altruistic social interest behaviors are associated with better mental health. *Psychosomatic Medicine, 65*, 778-785.
- Schwarz, G. (1978). Estimating the dimension of a model. *Annals of Statistics, 6*(2), 461-464.
- Sclove, S. L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika, 52*(3), 333-343.
- Settoon, R. P., & Mossholder, K. W. (2002). Relationship quality and relationship context as antecedents of person-and task-focused interpersonal citizenship behavior. *Journal of Applied Psychology, 87*(2), 255-267.
- Shea, G. P., & Guzzo, R. A. (1987). Groups as human resources. *Research in personnel and human Resources Management, 5*, 323-356.
- Sheth, J. N. (1996). Organizational buying behavior: Past performance and future expectations. *Journal of Business & Industrial Marketing, 11*(3/4), 7-24.
- Shore, L. M., & Wayne, S. J. (1993). Commitment and employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support. *Journal of Applied Psychology, 78*(5), 774-780.
- Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology, 68*(4), 653-663.

- Spitzmuller, M., Van Dyne, L. & Ilies, R. (2008). Organizational citizenship behavior: A review and extension of its nomological network. In J. Barling & C. L. Cooper (Eds.), *The SAGE handbook of organizational behavior* (pp. 106-123). Thousand Oaks, CA: Sage.
- Taylor, S. G., Kluemper, D. H., & Mossholder, K. W. (2010). Linking personality to interpersonal citizenship behaviour: The moderating effect of empathy. *Journal of Occupational and Organizational Psychology*, 83(4), 815-834.
- Thibaut, J., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.
- Uhl-Bien, M., Graen, G. B., & Scandura, T. A. (2000). Implications of leader-member exchange (LMX) for strategic human resource management systems: Relationships as social capital for competitive advantage. In G. Ferris (Ed.), *Research in personnel and human resource management* (Vol. 18, pp. 137-185). Greenwich, CT: JAI Press.
- Van der Vegt, G. S., Emans, B. J. M., & Van de Vliert, E. (2001). Patterns of interdependence in work teams: A two-level investigation of the relations with job and team satisfaction. *Personnel Psychology*, 54(1), 51-69.
- Van Dyne, L., & LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management journal*, 41(1), 108-119.
- Van Dyne, L., Cummings, L. L., & Parks, J. M. (1995). Extra-role behaviors: In pursuit of construct and definitional clarity (a bridge over muddied waters). In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 19, pp.215-285), Greenwich, CT: JAI Press.
- Van Dyne, L., Graham, J. W., & Dienesch, R. M. (1994). Organizational citizenship behavior: Construct redefinition, measurement, and validation. *Academy of Management Journal*, 37(4), 765-802.

- Wang, M., & Hanges, P. J. (2011). Latent class procedures: Applications to organizational research. *Organizational Research Methods, 14*(1), 24-31.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601-617.
- Wright, T. A., & Bonett, D. G. (1997). The contribution of burnout to work performance. *Journal of Organizational Behavior, 18*(5), 491-499.

APPENDICES

Appendix A: Survey Items

Eligibility Questions

1. Do you currently live in the United States? YES or NO
2. Do you currently work in the United States? YES or NO
3. Do you work at least 30 hours per week in a job? YES or NO
4. Do you work with other people in your workplace? YES or NO
5. Are you between 18 and 65 years old? YES or NO

Demographics

1. Age: ____
2. Gender:
 - 1) Male (0)
 - 2) Female (1)
 - 3) Other
3. Ethnicity:
 - 1) White
 - 2) Hispanic or Latino
 - 3) Black or African American
 - 4) Native American or American Indian
 - 5) Asian / Pacific Islander
 - 6) Other
4. Education: What is your education level?
 - 1) Some high school, no diploma
 - 2) High school graduate, diploma or the equivalent (for example: GED)
 - 3) Some college credit, no degree
 - 4) Trade/technical/vocational training
 - 5) Associate degree (AA, AS, AAB)
 - 6) Bachelor's degree (BA, BS)
 - 7) Master's degree (MA)
 - 8) Professional degree
 - 9) Doctorate degree (PhD)
5. Work Hours: How many hours do you work on average each week? ____
6. Employment Status: What best describes your employment status?
 - 1) Full-time
 - 2) Part-time
 - 3) Independent contractor
 - 4) Temporary agency
7. Organizational Tenure: How long have you worked for your company?
 - 1) Less than 3 months
 - 2) Between 3 to 6 months
 - 3) Between 6 months to 1 year
 - 4) Between 1 year to 5 years
 - 5) Between 5 years to 10 years
 - 6) More than 10 years
8. The Size of the Organization: How many total employees are in your company?

- 1) Under 10
 - 2) 10 to 20
 - 3) 20 to 50
 - 4) 50 to 100
 - 5) 100 to 150
 - 6) 150 to 500
 - 7) 500 to 1,000
 - 8) 1,000 to 5,000
 - 9) 5,000 to 10,000
 - 10) 10,000 to 15,000
 - 11) 15,000 to 25,000
 - 12) 25,000 or more
9. Industry: Which of the following categories best describes the industry you primarily work in?
- 1) Agriculture, Forestry, Fishing, Hunting, or Mining
 - 2) Arts, Entertainment, and Recreation
 - 3) Broadcasting
 - 4) College, University, and Adult Education
 - 5) Computer and Electronics Manufacturing
 - 6) Construction
 - 7) Finance and Insurance
 - 8) Government and Public Administration
 - 9) Health Care and Social Assistance
 - 10) Homemaker
 - 11) Hotel and Food Services
 - 12) Information Services and Data Processing
 - 13) Legal Services
 - 14) Military
 - 15) Other Education Industry
 - 16) Other Industry
 - 17) Other Information Industry
 - 18) Other Manufacturing
 - 19) Primary/Secondary (K-12) Education
 - 20) Publishing
 - 21) Real Estate, Rental and Leasing
 - 22) Religious
 - 23) Retail
 - 24) Scientific or Technical Services
 - 25) Software
 - 26) Telecommunications
 - 27) Transportation and Warehousing
 - 28) Utilities
 - 29) Wholesale
10. Income: Please indicate your current annual income in U.S. dollars.
- 1) Under \$10,000
 - 2) \$10,000-\$19,999

- 3) \$20,000-\$29,999
 - 4) \$30,000-\$39,999
 - 5) \$40,000-\$49,999
 - 6) \$50,000-\$74,999
 - 7) \$75,000-\$99,999
 - 8) \$100,000 to \$149,999
 - 9) \$150,000 or more
11. Marital Status: What is your marital status?
- 1) Single
 - 2) Married or living with a partner
12. The Number of Children: How many children under 18 years old live in your household?
- 1) None
 - 2) 1
 - 3) 2
 - 4) 3
 - 5) 4
 - 6) 5 or more

Conscientiousness (10-items)

Please indicate the extent that you agree with each of the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

I...

1. Am always prepared.
2. Pay attention to details.
3. Get chores done right away.
4. Like order.
5. Follow a schedule.
6. Am exacting in my work.
7. Leave my belongings around. (R)
8. Make a mess of things. (R)
9. Often forget to put things back in their proper place. (R)
10. Shirk my duties. (R)

Positive Affect (10-items)

Read each item and indicate to what extent you feel this way in general.

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

1. Interested
2. Alert
3. Excited
4. Inspired
5. Strong

6. Determined
7. Attentive
8. Active
9. Proud
10. Enthusiastic

Other-Oriented Empathy (9-items)

Below are a number of statements that may or may not describe you, your feelings, or your behavior. Please fill in the number that best describes the degree to which each statement describes your opinion, based on the guide shown above and the number column.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

[Empathic concern]

1. When I see someone being taken advantage of, I feel kind of protective towards them.
2. Other people's misfortunes do not usually disturb me a great deal. (R)
3. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
4. I am often quite touched by things that I see happen.

[Perspective taking]

5. I sometimes find it difficult to see things from the other person's point of view. (R)
6. I sometimes try to understand my friends better by imagining how things look from their perspective.
7. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (R)
8. I believe that there are two sides to every question and try to look at them both.
9. When I'm upset at someone, I usually try to "put myself in their shoes" for a while.

Task Interdependence (5-items)

Please indicate the extent that you agree with each of the following statements.

1	2	3	4	5	6	7
Highly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Highly Agree

1. I have to obtain information and advice from my colleagues to complete my work.
2. I depend on my colleagues for the completion of my work.
3. I have a one-person job; I rarely have to check or work with others. (R)
4. I have to work closely with my colleagues to do my work properly.
5. In order to complete their work, my colleagues have to obtain information and advice from me.

Job Satisfaction (3-items)

Please indicate the extent that you agree with each of the following statements.

1	2	3	4	5
---	---	---	---	---

Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
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1. In general, I like working at my job.
2. In general, I am satisfied with my job
3. I am generally satisfied with the kind of work I do in this job.

Benefactor Organizational Citizenship Behavior toward Individuals (Giving OCB-I; 14-items)

In a typical week, how many times do you usually engage in the following behaviors at work?

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Very frequently

1. I listen to coworkers when they have to get something off their chest.
2. I take time to listen to coworkers' problems and worries.
3. I take a personal interest in coworkers.
4. I show concern and courtesy toward coworkers, even under the most trying business situations.
5. I make an extra effort to understand the problems faced by coworkers.
6. I always go out of the way to make employees feel welcome in the work group.
7. I try to cheer up coworkers who are having a bad day.
8. I compliment coworkers when they succeed at work.
9. I take on extra responsibilities in order to help coworkers when things get demanding at work.
10. I help coworkers with difficult assignments, even when assistance is not directly requested.
11. I assist coworkers with heavy workloads even though it is not part of job.
12. I help coworkers who are running behind in their work activities.
13. I help coworkers with work when they have been absent.
14. I go out of way to help coworkers with work-related problems.

Beneficiary Organizational Citizenship Behavior from Individuals (Receiving OCB-I; 14-items)

In a typical week, how many times do you usually experience the following behaviors at work?

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Very frequently

1. Coworkers listen to me when I have to get something off my chest.
2. Coworkers take time to listen to my problems and worries.
3. Coworkers take a personal interest in me.
4. Coworkers show concern and courtesy toward me, even under the most trying business situations.
5. Coworkers make an extra effort to understand the problems faced by me.
6. Coworkers always go out of the way to make me feel welcome in the work group.
7. Coworkers try to cheer up me when I am having a bad day.
8. Coworkers compliment me when I succeed at work.
9. Coworkers take on extra responsibilities in order to help me when things get demanding at work.

10. Coworkers help me with difficult assignments, even when assistance is not directly requested.
11. Coworkers assist me with heavy workloads even though it is not part of job.
12. Coworkers help me when I am running behind in my work activities.
13. Coworkers help me with work when I have been absent.
14. Coworkers go out of way to help me with work-related problems.

Physical Strain (12-items)

Study 1: In general, how often do you experience each symptom?

Study 2: *In the past week*, how often did you experience each symptom?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Almost Always

1. Upset stomach or nausea
2. Backache
3. Headache
4. Acid indigestion or heartburn
5. Diarrhea
6. Stomach cramps (non-menstrual)
7. Loss of appetite
8. Shortness of breath/difficulty breathing
9. Dizziness
10. Chest pain
11. Flu or cold symptoms (fever, sore throat, chills)
12. Muscle pain

Psychological Strain (16-items)

Study 1: In general, what extent do you agree with the statements?

Study 2: *In the past week*, what extent did you agree with the statements?

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1. I always find new and interesting aspects in my work.
2. There are days when I feel tired before I arrive at work.
3. It happens more and more often that I talk about my work in a negative way.
4. After work, I tend to need more time than in the past in order to relax and feel better.
5. I can tolerate the pressure of my work very well.
6. Lately, I tend to think less at work and do my job almost mechanically.
7. I find my work to be a positive challenge.
8. During my work, I often feel emotionally drained.
9. Over time, one can become disconnected from this type of work.
10. After working, I have enough energy for my leisure activities.
11. Sometimes I feel sickened by my work tasks.
12. After my work, I usually feel worn out and weary.
13. This is the only type of work that I can imagine myself doing.
14. Usually, I can manage the amount of my work well.

15. I feel more and more engaged in my work.
16. When I work, I usually feel energized.

Appendix B: IRB Approval Letter for Study 1



RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX(813)974-7091

March 13, 2017

Seulki Jang
Psychology
Tampa, FL 33612

RE: **Exempt Certification**

IRB#: Pro00027994

Title: A Latent Profile Analysis of Benefactor and Beneficiary Organizational Citizenship Behaviors

Dear S. Jang:

On 3/13/2017, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board

Appendix C: IRB Approval Letter for Study 2



RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX(813)974-7091

August 7, 2017

Seulki Jang
Psychology
Tampa, FL 33612

RE: **Exempt Certification**

IRB#: Pro00030995

Title: A Latent Profile Analysis of Benefactor and Beneficiary Organizational Citizenship Behaviors (Study 2)

Dear S. Jang:

On 8/6/2017, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board