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**TYPOLGY OF KNOWLEDGE-SHARING INTENTIONS IN MULTINATIONAL
COMPANIES: CROSS-NATIONAL COMPARATIVE RESEARCH WITH
LATENT CLASS ANALYSIS**

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and
Comparative International Education

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Abstract

The workplace has evolved into a more knowledge-intensive environment. Reflecting this workplace trend, articles in the workplace literature point to knowledge-sharing as a key driving factor in organizational success, leading organizations toward the ability to gain a competitive edge. However, organizations still struggle to facilitate knowledge-sharing. Moreover, our understanding of knowledge-sharing behavior is somewhat limited to a variable-oriented framework. Therefore, it is important to extend our understanding of knowledge-sharing by classifying those engaged in it according to preference and identifying the characteristics of a homogenous group pattern. This study aimed to reveal hidden grouping preference patterns that represent knowledge-sharing intention and psychological factors closely related to knowledge-sharing, such as commitment and work engagement. In order to answering the research questions, Latent Class Analysis (LCA) was used. Latent class analysis provides a statistical procedure for a classification. Since the purpose of this study is revealing hidden grouping structure of knowledge sharing, LCA is a proper methodology for investigating the research questions. As a finding, five distinguishable classes that showed similar response patterns were identified: (a) Bystanders, (b) Engagement- and commitment-oriented knowledge sharers, (c) Ordinary group, (d) Relationship-oriented knowledge sharers, and (e) Ideal knowledge sharers. In this study, each country's dominant class was identified. The existence of country-specific dominant classes indicates that different cultural factors influence the organizational knowledge-sharing culture. Many organizations strive to facilitate knowledge-sharing by providing resources and systems. However, this is not effective if organizations and managers fail to recognize that knowledge-sharing is a dynamic cognitive and behavioral interaction with social,

cultural, and psychological dimensions. This study's results suggest that organizations should look carefully at the hidden structure of knowledge-sharing.

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Chapter 1

Introduction

Background

Organizations have become more responsive to planning, implementing, and correcting courses of actions (Nonaka & Nishiguchi, 2001). Because tasks performed in organizations have become more complex, the need for knowledge workers has increased (Grant, 1996). The workplace has evolved into a more knowledge-intensive environment (Jacobs, 2017; Wang & Noe, 2010). Acknowledging these workplace trends, articles in the workplace literature point to knowledge-sharing as a key driving factor in organization success, one that helps organizations toward gaining a competitive edge (Alavi & Leidner, 2001; Grant, 1996; Pearl, 2007).

Knowledge-sharing contributes to an organization's competitive advantage by establishing knowledge-based resources. Work-related knowledge is resident in the production of goods and services; thus, "the primary task of management is establishing the coordination necessary for the knowledge integration" (Grant, 1996, p. 120). Employees select and utilize shared ideas (Wiemken, Ramirez, Polgreen, Peyrani, & Carrico, 2012). New knowledge that is established by the sharing process is a knowledge-based asset (Nonaka & Nishiguchi, 2001). Alavi and Leidner (2001) maintained that knowledge-based resources are hard to imitate and are socially complex; therefore, "the knowledge-based view of the firm posits that these knowledge assets may produce long-term sustainable competitive advantage" (p. 108).

Knowledge-sharing involves the diffusion of individual knowledge into the organization by formal and informal communication channels (Jensen, Johnson, Lorenz, & Lundvail, 2007, p 682). Pearl (2007) provided insights into the advantages enjoyed by leaders who have industrial

experience in knowledge-sharing. Leaders with multiple and cross-industrial experiences can have a broader perspective and engage in fresh thinking. This type of leader tends to have more useful knowledge-sharing characteristics. They help their workers go beyond looking outside the box, enabling companies to be more innovative and competitive (Pearl, 2007). Thus, throughout the course of knowledge-sharing activities, not only individual learning capacity but also organization-level learning capacity is enhanced. Likewise, the literature points to knowledge-sharing as a key factor in competitive organizations' interest in knowledge management and knowledge-sharing activities as their major managerial operation. These organizations have invested resources to improve the knowledge-sharing culture (Desouza & Awazu, 2003). For example, Infosys (Infosys, n.d.) has implemented a K-Shop, which is an internal knowledge market, and Fujitus (Fujitus, n.d.) started FIND2, a knowledge management and exchange system through which employees trade their knowledge (Desouza & Awazu, 2003).

Organizations still struggle to facilitate knowledge-sharing, however. After conducting 34 interviews with knowledge experts in organizations, Ribière and Calabrese (2016) identified seven themes relating to the reasons “why organizations are still struggling with knowledge management” (p. 15). The seven themes were: culture, measurement/benefits, strategy, organizational structure, governance and leadership, IT-related issues, and lack of knowledge management (KM) understanding/standards (Rivière & Calabrese, 2016, p. 16). In other words, knowledge management and sharing efforts may fail when organizations focus mainly on applying knowledge management policies and systems without proper consideration of human factors such as organization culture, individual and team characteristics of knowledge-sharing, and social structure (Rivière & Calabrese, 2016; Wang & Noe, 2010). Moreover, the majority of knowledge-sharing research has focused on knowledge-sharing phenomena in Western countries

(Peltokorpi, 2006; Wang & Noe, 2010) and on outcomes of knowledge-sharing (Hsu & Lin, 2008; Wang & Wang, 2012). However, it is hard to imagine that all relationships between knowledge-sharing and other variables would be the same in different groups (Jensen et al., 2007). Jensen et al. (2007) identified groups of firms that utilize two different types of knowledge-based innovation: the Science, Technology and Innovation (STI) mode and the Doing, Using and Interacting (DUI) mode. In this study, Jensen et al. (2007) showed that firms using a combination of two modes are more likely to innovate new products or services than those that rely on one mode of knowledge-based innovation. Although some studies have looked into the typology (“Typology [Def. 1],” n.d.) that indicates an analysis or classification based on types or categories in the knowledge-sharing literature, relatively little attention has been given to the topology of knowledge-sharing (Jensen et al., 2007; Rossenberg, 2016).

From a methodological point-of-view, the variable-centered approach, which is an interest in measuring the relevant variables and studying their relations across time (Bergamn & Trost, 2006), has been the dominant approach in the business literature on knowledge-sharing (Rossenberg, 2016). Variable-centered approaches may not fully account for the complex interaction between aspects of the various environments related to knowledge-sharing because employees are part of teams or departments nested in organizations rather than homogeneous subjects. The place or environment in which knowledge-sharing takes place plays a key role that determines knowledge-sharing intention and behavior. Knowledge-sharing research using the variable-oriented approach extends our understanding of knowledge-sharing in the workplace context. However, inter-individual differences in knowledge-sharing are often overlooked because inter-individual differences are regarded as random in the variable-oriented approach

(Berlin, William & Parra, 2014; Collins & Lanza, 2013). Therefore, it is important to take into account the groupings and nesting of employees.

Based on the research problem identified previously about previous knowledge-sharing studies, two core research questions are emerging. How are organizational members grouped (e.g., according to perception and organizational psychological factors), and what are the characteristics of these groups? Providing proper answers to these questions may contribute to study of knowledge-sharing by identifying groups through proper statistical analyses and reliable information on those groups that have used different knowledge-sharing strategies. This information will be valuable to practitioners who wish to design a proper knowledge-sharing intervention.

Purpose and Research Objectives of This Study

This study aimed to identify the latent, or hidden, grouping preference patterns that represent knowledge-sharing intention and psychological factors that closely relate to knowledge-sharing, such as commitment and work engagement, and the types of knowledge-sharing classes emerging in countries that reflect cultural tendencies in knowledge sharing patterns. To accomplish this, the following research questions were identified:

Research Question 1: What is the best-fitting Latent Class Analysis (LCA) model of knowledge-sharing intention?

Research Question 2: What are the characteristics of latent classes of knowledge-sharing intention patterns?

Research Question 3: What dominant latent class patterns characterize knowledge-sharing intention in the selected countries?

Summary

In this chapter, the importance of knowledge-sharing and the research problems were briefly introduced. In sum, knowledge-sharing is an important activity that creates knowledge-based assets. Previous studies have not paid attention to person-oriented characteristics and cultural influences of knowledge sharing. In chapter 2, literature is reviewed on knowledge-sharing, organizational factors, and the cultural aspects of knowledge-sharing.

Chapter 2

Review of Related Literature

The knowledge-sharing literature related to social dimensions, organizational psychological factors, and cultural aspects are reviewed. This literature review follows Torraco's (2005) comprehensive integrative literature review process. As the conceptual structure, knowledge-sharing is defined as an interactive behavior (Hansen, 1999; Nelson & Coopridge, 1996; Szulanski, 1996; De Vries, Van den Hooff, & De Ridder, 2006), influenced by organization members' psychological factors such as engagement and commitment (Chang, Liao, Lee, & Lo, 2015) that reflects the exchange of socially constructed intellectual capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998) in the cultural context (Wang & Noe, 2010).

The method for this literature review included a literature search and selection strategy involving the identification and subsequent application of keywords in databases. The review started with a search for literature offering definitions and characteristics of knowledge-sharing. Then, social dimensions of knowledge-sharing were reviewed. Because knowledge-sharing is influenced by psychological factors (Chang, Liao, Lee, & Lo, 2015), literature on two dominant psychological indicators — employee engagement and commitment — were reviewed. Last, literature related to cultural aspects of knowledge-sharing were reviewed.

Methods for the Review

To begin the review, a wide range of the knowledge-sharing literature was surveyed using the simple keyword. "knowledge sharing." Multiple scholarly databases were used, including Google Scholar, Web of Science, Scopus, and Proquest. After the initial review process, dimensions of knowledge-sharing such as social, psychological, and cultural factors were identified. Among the surveyed literature, research articles that dealt with specific topics in

knowledge-sharing along social, psychological, and cultural dimensions were selected and reviewed.

Findings of the Review

Knowledge-Sharing Definition and Characteristics

Knowledge-sharing is an important process that has become a fundamental basis of an organization's competitive advantage (Kogut & Zander, 1992). Knowledge-sharing is defined in many ways by scholars. The knowledge-sharing literature has shared multiple perspectives through which to ground a knowledge-sharing definition, such as a perspective that interprets knowledge-sharing as organization members' interaction (Hansen, 1999; Nelson & Coopride, 1996; Szulanski, 1996), as access to knowledge, and as a perspective that emphasizes knowledge transfer and exchange (Bock & Kim, 2002; Ruggles, 1998).

Nelson and Coopride (1996) defined knowledge-sharing as an interaction between organization members that purposely occurs to enhance group performance. Szulanski (1996) viewed knowledge-sharing as an inter-exchange process of imparting knowledge from one unit to another unit. From the perspective that emphasizes knowledge-sharing as accessible, knowledge-sharing is interpreted as involving an acquisition process. Knowledge-sharing is also understood as a knowledge transfer activity between individuals. Bock and Kim (2002) defined knowledge-sharing as a distribution activity between individuals in an organization. In light of the diverse perspectives on the definition, knowledge-sharing can be defined as a dynamic interactive process through which organization members are willing to distribute and transfer knowledge as competitive assets inherent in organization members' social structure.

Social Dimension

Socially structured relationships through knowledge-sharing are a form of capital that enables the exchange of resources and information (Burt, 1992). Social capital provides better job opportunities (Fernandez & Weinberg, 1997; Granovetter, 1973), contributes to intellectual capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998), and influences career success (Burt, 1992; Podolny & Baron, 1997). Social capital is often regarded as an important factor in knowledge-sharing.

Throughout a social relationship, organization members acquire access to resources and information. Nahapiet and Ghoshal (1998) suggested a model that explains the feedback relationship between the dimensions of social capital, an exchange of intellectual capital, and the creation of new intellectual capital. The structural, cognitive (e.g., perception of relationships with co-workers), and relational dimensions directly enhance intellectual capital. Nahapiet and Ghoshal (1998) described this process as “access to parties for combining intellectual capital, anticipation of value through combining intellectual capital, motivation to combine intellectual capital and combination capability” (p. 251).

Mutuality is a fundamental factor in social capital and knowledge-sharing (Burt, 1992; Granovetter, 1973; Lin, Cook, & Burt, 2001). Lin et al. (2001) interpreted mutual ties as a network-level phenomenon. According to these researchers, “the data show that alter who has many ties with other members of an ego network [Ego networks is a focal node (ego)’s network that consist of the ego node and the nodes to whom ego is directly connected to] is considerably more likely to provide everyday support to this ego and magically more likely to provide emergency support” (Lin et al., 2001, p. 250).

Burt (1992) defined structural holes as the “separation between non-redundant contacts” (p. 18). Structural holes are voids in the social structure. The structural holes provide

informational and control benefits to those located in structural holes. Additionally, individuals who have diverse sources of information have an advantage in information acquisition; individuals who have diverse alternative choices have less constraint, and an advantage in control and negotiation (Burt, 1992). Thus, knowledge-sharing may be regarded as a result of the social structure.

Organizational Psychological Factors

Work engagement often is described as a state-like, persistent concept that emphasizes personal experience in terms of high degrees of vigor, dedication, and absorption (Bakker & Leiter, 2010). The research tradition has focused on psychological traits that explain an individual's work engagement (Sweetman & Luthans, 2010); relationship with job performance (Bakker & Leiter, 2010); well-being in the workplace (Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010); and knowledge-sharing (Chen, Zhang & Vogel, 2011). Work engagement is enhanced by social support (Bakker & Leiter, 2010), and knowledge-sharing is a voluntary interaction that is regarded as social support. Therefore, knowledge-sharing intentions are stimulated by a positive psychological status because an individual's attitudes form intention and intention is an immediate indicator of behavior (Ajzen, 1991).

Bakker and Leiter (2010)'s explanation of work engagement in social context revealed this phenomenon: "Collegial relationships hold the potential for knowledge-sharing in which employees not only respond similarly to work environment but also influence one another's experience of engagement" (p. 5). Similarly, De Vries, Van den Hooff, and De Ridder (2006) investigated relationships among team communication style, job-related cognition, and knowledge-sharing attitude and behaviors. They found that eagerness and willingness have positive associations with knowledge-sharing behavior and attitude.

With work engagement, organizational commitment also is positively associated with knowledge-sharing (Chang, Liao, Lee, & Lo, 2015). Organizational commitment is an important construct of one's attitude toward an organization. Commitment enables the formation and evaluation of the value of knowledge-sharing (Witherspoon, Bergner, Cockrell, & Stone, 2013). The level of dedication to an organization enhances voluntary, self-motivated knowledge-sharing intention and behavior. Chang et al. (2015) investigated the relationship between knowledge-sharing and organization commitment in Taiwan's semi-conductor industry. They found that organizational commitment is positively associated with knowledge-sharing; knowledge-sharing mediates organization commitment and organizational citizenship behavior. Witherspoon et al. (2013) conducted a meta-analysis of a wide range of studies to identify the antecedents of knowledge-sharing intention and behavior. They found that organization commitment has a positive relationship with both knowledge-sharing intention and behavior (Witherspoon et al., 2013). In sum, positive psychological status has relatively little effect on knowledge-sharing. Work engagement and organizational commitment have more influence on knowledge-sharing's social dimension.

Cultural Aspects

The majority of knowledge-sharing research has focused on knowledge-sharing phenomena in Western countries (Peltokorpi, 2006; Wang & Noe, 2010). Peltokorpi (2006) identified the problem with knowledge-sharing research: "Little has been discussed about the intervening influence of national culture" (p. 138). Wang and Noe (2010) reported that knowledge-sharing in cultural contexts is a "topic needing future research" (p. 116). Thus, information on the cross-cultural context of knowledge-sharing is relatively limited.

In knowledge-sharing and cross-cultural perspective studies, lack of awareness of an appropriate culture limits knowledge-sharing because organization practice depends on the national culture. Hofstede (1980) maintained that an organization's culture is nested within a national culture. So, national culture plays an important role in organization practice. Hofstede (1980) cited many other cross-cultural studies with a taxonomy of cultural dimensions such as power distance, individualism and collectivism, uncertainty avoidance, masculinity and femininity, and long-term orientation.

Ford and Chan (2003) defined the relationship between national culture and knowledge-sharing interaction using Hofstede's taxonomy as follows: (a) cultures that are high on individualism may have greater difficulty in knowledge-sharing than cultures high on collectivism, (b) cultures that are high on power distance may have a more top-down flow of knowledge than cultures that are low on power distance, (c) cultures that are high in masculinity may have less knowledge-sharing between organizational members if competitiveness is individually based—there may be no difference if competitiveness is organizationally based, and (d) knowledge-sharing between heterogeneous cultural groups may be more difficult than knowledge-sharing within a homogeneous cultural group (p. 15).

Individualism and collectivism are also important factors in knowledge-sharing. Ford and Chan (2003) stated that “individualistic cultures may have more difficulty in knowledge-sharing, since knowledge is often seen as a source of power and a tool for success for the individual” (p. 13). Additionally, Chow, Deng and Ho (2000) found that Chinese versus U.S. nationals' openness to knowledge-sharing was related to their different degrees of collectivism.

Organizations need to pay close attention to cultural characteristics in developing human resource practices that will facilitate knowledge-sharing—for example, not one universal set of

practices can be used to facilitate knowledge-sharing in global and multinational organizations (Wang & Noe, 2010, p. 127).

Summary of Review

In this chapter, the literature related to knowledge-sharing and cultural, social, and organizational psychological factors was reviewed. At the beginning of this chapter, we suggested that conceptual structure points to knowledge-sharing as an interactive behavior influenced by organization members' psychological factors such as work engagement and organizational commitment, and that it reflects the exchange of socially constructed intellectual capital in the cultural context. Most of the knowledge-sharing literature focused on relations between variables.

In sum, knowledge-sharing is an interactive behavior between organizational members exchanging intellectual capital throughout social relationships. Reciprocity is a fundamental element of knowledge-sharing when one considers social dimensions. According to the theory of planned behavior, intention precedes behavior. In this case, knowledge-sharing as an interactive intention is the immediate indicator of knowledge-sharing behavior, and intention is formed by attitude, subjective norm and perceived behavior. Therefore, organization members' knowledge-sharing intention would be categorized by perceptions of each organization member's relationship as subjective, and engagement and commitment as attitude.

In short, knowledge-sharing intention is the immediate indicator of knowledge-sharing behavior. Social structure influences knowledge-sharing intention and behavior. Since national culture also influences knowledge-sharing intention and behavior, a dominant type of knowledge-sharing would be expected. Since knowledge-sharing intention and behavior are

voluntary self-motivated interactions, it is difficult to expect sustainable knowledge-sharing behavior without psychological sustainability such as commitment and engagement.

The next chapter contains an explanation of the method and procedure for this study, including descriptions of the data, sample, variables, and analysis procedure.

Chapter 3

Methods

In this chapter, data, variables, and analyses that were used to answer the research questions posed in this study are described. This study used a public dataset from the *The Generation of Talent Study* (McNamara, Pitt-Catsouphes, Sarkisian, Besen, & Kidahashi, 2016; Pitt-Catsouphes & Sarkisian, 2014). Described in the first part of this chapter are the data, *the Generation of Talent Study*, and the sample assembled for this study. Then, variables created from the data collected in the analysis are outlined. Last, the use of Latent Class Analysis is specified as it was utilized to answer the research questions for this study.

Data

The ideal target population for this study was full-time employees who worked in knowledge-intensive workplaces in various countries. In order to answer the questions posed for this study, survey data were selected from *The Generation of Talent Study* (McNamara et al., 2016; Pitt-Catsouphes & Sarkisian, 2014). These data are public-use data that contain cross-sectional and cross-national data elements collected from January 2010 to June 2010.

Generation of Talent Study Survey

The *Generation of Talent Study* survey is designed “to examine several dimensions of quality of employment as experienced by today's multigenerational workforces” (Pitt-Catsouphes & Sarkisian, 2014, p. 6). Information in the dataset was collected from multi-national employees from five different industries—technology, pharmaceutical, consulting, finance and energy—and 23 worksites in 11 countries/states. Although the convenience sampling approach was used to collect data by recruiting employers with interest in organizational issues and who had a previous

relationship with the Sloan Center on Aging and Work (Sloan Center on Aging & Work, 2017), random sampling was conducted within each worksite.

Organizations were selected that were: (a) multinational business organizations operating worksites in a minimum of three different countries, and (b) organizations with a sufficient number of employees and at least 300 employees at each participating worksite (Pitt-Catsouphes & Sarkisian, 2014, p. 7). Data from 11,298 sample organizations were collected from 82,162 employees at 24 worksites within 11 different countries. The response rate was 14.6%. Pitt-Catsouphes and Sarkisian (2014) provided more details about the *Generation of Talent Study* sample design.

Sample for This Study

The sampling approach that used in this study is criterion-based, purposive sample (Palinkas et al, 2015). The criterion of the sample is knowledge workers who is working in multi-national company as a full-time worker. For the purpose of this study, the sample was restricted to respondents who completed all items in the worksite survey. Accordingly, in the final dataset for analysis, any case with a missing value for any variable was deleted (i.e., case-wide deletion). As a result, 1,674 employees who responded to the survey were retained for the analysis.

The demographic characteristics of the sample selected for this study are displayed in Table 3.1. Sample members were: more likely male; from a variety of countries (although 1 in 4 were from Japan); educated mostly 11–20 years; and predominantly in services/sales, technical, and managerial occupations. The dataset analyzed in this study is available in the Open Science Framework repository (<https://osf.io/aepuy/>).

Table 3.1
Characteristics of the sample for this study from the Generation of Talent Study Survey

Demographic Characteristic	<i>n</i>	%
<i>Sex</i>		
Male	968	58%
Female	706	42%
	1,647	100%
<i>Country</i>		
U.S.	166	10%
Netherlands	27	2%
Spain	107	6%
Brazil	289	17%
Mexico	276	16%
South Africa	66	4%
India	68	4%
China	255	15%
Japan	420	25%
	1,674	99%
<i>Occupation</i>		
Manager	398	24%
Technical Employee	440	26%
Production	25	1%
Administrative Support	125	7%
Service/Sales	612	37%
Other	74	4%
	1,674	99%
<i>Formal Education</i>		
1-10	58	3%
11-20	1,508	90%
more than 20	108	6%
	1,674	99%

Source: Analysis of Generation of Talent Study Survey Data (Pitt-Catsouphe & Sarkisian, 2014)

Variables

Knowledge Importance and Opportunity for Sharing

Knowledge-sharing intention and perception were measured through two variables, KSN1 and KSN2 (M2_B1T, M2_B1U; codebook in Pitt-Catsouphe & Sarkisian, 2014), that represent the perception of the importance of knowledge and opportunity to engage in knowledge-sharing according to the next generation. Cronbach's α for these two items was .82 (95% CI: .80; .84).

Shown in Table 3.2 are variable names and code names from the codebook for the *Generation of Talent Study* survey, survey items from which the variables were created, response alternatives to the items, and regular and relative frequency distributions of responses to items for all variables examined in this study, including measures of the perception of the importance of knowledge and opportunity to engage in knowledge-sharing.

Table 3.2
Regular and relative frequencies of values for variables analyzed in this study.

Variable (Codebook Name)/Item	Response	<i>n</i>	%
KSN1 (M2_B1T) Importance of opportunities to teach and train others	(1) Strongly disagree	17	1.0
	(2) Moderately disagree	21	1.3
	(3) Somewhat disagree	57	3.4
	(4) Somewhat agree	295	17.6
	(5) Moderately agree	593	35.4
	(6) Strongly agree	691	41.3
KSN2 (M2_B1U) Importance of opportunities to pass knowledge to the next generation	(1) Strongly disagree	77	4.6
	(2) Moderately disagree	123	7.3
	(3) Somewhat disagree	176	10.5
	(4) Somewhat agree	485	29.0
	(5) Moderately agree	516	30.8
	(6) Strongly agree	297	17.7
WRIN1 (B1Q) Importance of positive working relationships with co-workers	(1) Strongly disagree	13	0.8
	(2) Moderately disagree	5	0.3
	(3) Somewhat disagree	10	0.6
	(4) Somewhat agree	130	7.8
	(5) Moderately agree	518	30.9
	(6) Strongly agree	998	59.6
WRIN2 (B1R) Importance of positive working relationships with immediate supervisors	(1) Strongly disagree	12	0.7
	(2) Moderately disagree	7	0.4
	(3) Somewhat disagree	21	1.3
	(4) Somewhat agree	108	6.5
	(5) Moderately agree	483	28.9
	(6) Strongly agree	1043	62.3
COMM1 (D1AD) To help this organization succeed, I am willing to work harder than I have to	(1) Strongly disagree	27	1.6
	(2) Moderately disagree	28	1.7
	(3) Somewhat disagree	70	4.2
	(4) Somewhat agree	360	21.5
	(5) Moderately agree	628	37.5
	(6) Strongly agree	561	33.5
COMM2 (D1AE) I would take almost any job to keep working for this organization.	(1) Strongly disagree	238	14.2
	(2) Moderately disagree	237	14.2
	(3) Somewhat disagree	367	21.9
	(4) Somewhat agree	402	24.0
	(5) Moderately agree	263	15.7
	(6) Strongly agree	167	10.0

Variable (Codebook Name)/Item	Response	<i>n</i>	%
COMM3 (D1AF) (R)I would turn down another job for more pay in order to stay with this organization.	(1) Strongly disagree	220	13.1
	(2) Moderately disagree	184	11.0
	(3) Somewhat disagree	350	20.9
	(4) Somewhat agree	443	26.5
	(5) Moderately agree	323	19.3
	(6) Strongly agree	154	9.2
ENG1 (D4A) At my work, I feel bursting with energy.	(1) Never	24	1.4
	(2) Almost never	59	3.5
	(3) Rarely - Once a month or less	103	6.2
	(4) Sometimes - A few times a month	254	15.2
	(5) Often - Once a week	319	19.1
	(6) Very often - A few times a week	585	34.9
	(7) Always - Every day you work	330	19.7
ENG2 (D4C) I find the work that I do full of meaning and purpose.	(1) Never	25	1.5
	(2) Almost never	35	2.1
	(3) Rarely - Once a month or less	101	6.0
	(4) Sometimes - A few times a month	228	13.6
	(5) Often - Once a week	299	17.9
	(6) Very often - A few times a week	528	31.5
	(7) Always - Every day you work	458	27.4
ENG3 (D4D) I am immersed in my work.	(1) Never	24	1.4
	(2) Almost never	18	1.1
	(3) Rarely - Once a month or less	49	2.9
	(4) Sometimes - A few times a month	148	8.8
	(5) Often - Once a week	241	14.4
	(6) Very often - A few times a week	619	37.0
	(7) Always - Every day you work	575	34.3

Source: Analysis of *Generation of Talent Study* Survey Data (Pitt-Catsoupes & Sarkisian, 2014)

Sharing with a Co-Worker

The importance of positive relationships with co-workers and supervisors was measured using two variables, WRIN1 and WRIN2 (B1Q and B1R; codebook in Pitt-Catsoupes & Sarkisian, 2014) that represented the perception of the importance of a working relationship with a co-worker (vertical-sharing) and supervisors (upward-sharing). Cronbach's α for these two items was .89 (95% CI: .88; .90.)

Work Engagement

Work engagement was measured with the Utrecht Work Engagement Scale (Schaufeli Salanova, Gonzalez-Roma & Bakker, 2002). Work engagement is defined as “a positive, fulfilling, affective-motivational state of work-related well-being that can be seen as the antipode

of job burnout” (Bakker & Leiter, 2010, p. 7). The original Utrecht Work Engagement Scale consists of 17-items developed by Schaufeli, Salanova, González-Romá, and Bakker (2002). Later, the short version of the scale was introduced and validated in a cross-national study (Schaufeli, Bakker, & Salanova, 2006). In the initial dataset, all nine items from the short version of the UWES were included, but some items were not collected at some worksites and in some countries. However, at least one item in each sub-construct (vigor, dedication, absorption) of engagement were retained; those items were assessed using a 7-point Likert scale. Work engagement was measured through three variables, ENG1, ENG2 and ENG3 (D4A, D4C, and D4D; codebook in Pitt-Catsouphes & Sarkisian, 2014), that represent the sub-constructs (vigor, dedication, absorption) of engagement. Cronbach’s α for the three items was .88 (95% CI: .87; .89).

Organizational Commitment

Commitment was assessed by organizational commitment measurement survey items that were introduced by Marsden, Kalleberg, and Cook (1993). Organizational commitment is defined as “the relative strength of an individual's identification with and involvement in a particular organization” (Steers, 1977, p. 46). They found that the organizational commitment measurement items in the 1991 General Social Survey were consistent with the concept of organizational commitment in the Indianapolis/Tokyo Work Commitment Study (Lincoln & Kalleberg, 1990). Three commitment items were assessed with a 6-point Likert scale. Data for the three variables created from these items were analyzed: COM1, COM2, and COM3 (D1AD, D1DE, and D1AF; codebook in Pitt-Catsouphes & Sarkisian, 2014). Cronbach's α for these three items was .88 (95% CI: .81; .86).

Country

The variable that represented the country of the survey participants was analyzed (COUNTRY in codebook in Pitt-Catsoupes & Sarkisian, 2014). This variable indicates a country of the worksite location, but not ethnicity. Country variable included nine different countries: U.S., Netherlands, Spain, Brazil, Mexico, South Africa, India, China, and Japan.

Analysis

Research Question 1: What is the best-fitting Latent Class Analysis model of knowledge-sharing intention?

The statistical analysis technique applied to answer the research questions posed in this study was Latent Class Analysis (LCA). LCA is used to identify latent structures represented by classes, which are distinct subgroups, types, or categories of similar objects or individuals (Collins & Lanza, 2013). The probability of membership in a class is estimated by examining the similarity of participants' responses within classes. To analyze the data for this study, R statistical software, a programming language for data science applications (R Core Team, 2017), and the R package, poLCA, for Latent Class Analysis (Linzer & Lewis, 2011) were used. The R code used to perform this analysis is available in the Open Science Framework repository (<https://osf.io/aepuy/>).

In this study, Latent Class Analysis was conducted using the following three-step procedure. First, nine LCA models were estimated with increasing numbers of classes in each model. Second, the fit of these LCA models to the data was assessed using several versions of the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) as well as a measure of Entropy and a likelihood ratio. LCA model fit is treated in detail by Collins and Lanza (2013).

The AIC (Akaike, 1974) estimates the relative information lost when a particular model among the nine LCA models is used to represent the process that generated the data. The BIC (Schwarz, 1978) allows the choice of the least biased among the nine models by providing a model fit indicator that includes a penalty term that avoids over-fitting an LCA model by adding too many classes. The Entropy indicator measures “the ability of a mixture model [which an LCA model is] to provide well separated clusters [or classes]” (Celeux & Soromenho, 1996, p. 200). The likelihood ratio is a measure of the degree of fit of the model to the data—the lower the ratio, the better the fit. Third, the best-fitting LCA model was re-estimated with covariates.

Model fit indicators of different numbers of LCA models are compared to determine the best-fitting model. Once an optimal number of latent classes is determined based on comparison of latent class model-fit indicators, a membership probability table is provided containing information about the probability that a participant with a specific response pattern belongs to any of the latent classes.

Research Question 2: What are the characteristics of latent classes of knowledge-sharing intention patterns?

The probabilities of membership in classes based on survey response patterns are tabulated. This membership probability table displays the probability that a participant with a specific response pattern belongs to a particular class. The characteristics that define each latent class are evident in the dominant, or most probable, response to a survey item.

Research Question 3: What dominant latent class patterns characterize knowledge-sharing intention in the selected countries?

To answer research questions about the dominant latent class pattern that characterizes a country’s knowledge-sharing intention, the proportion of the latent classes in countries is

identified. In this process, the latent class with the highest percentage in the country is identified as the country's dominant knowledge-sharing pattern.

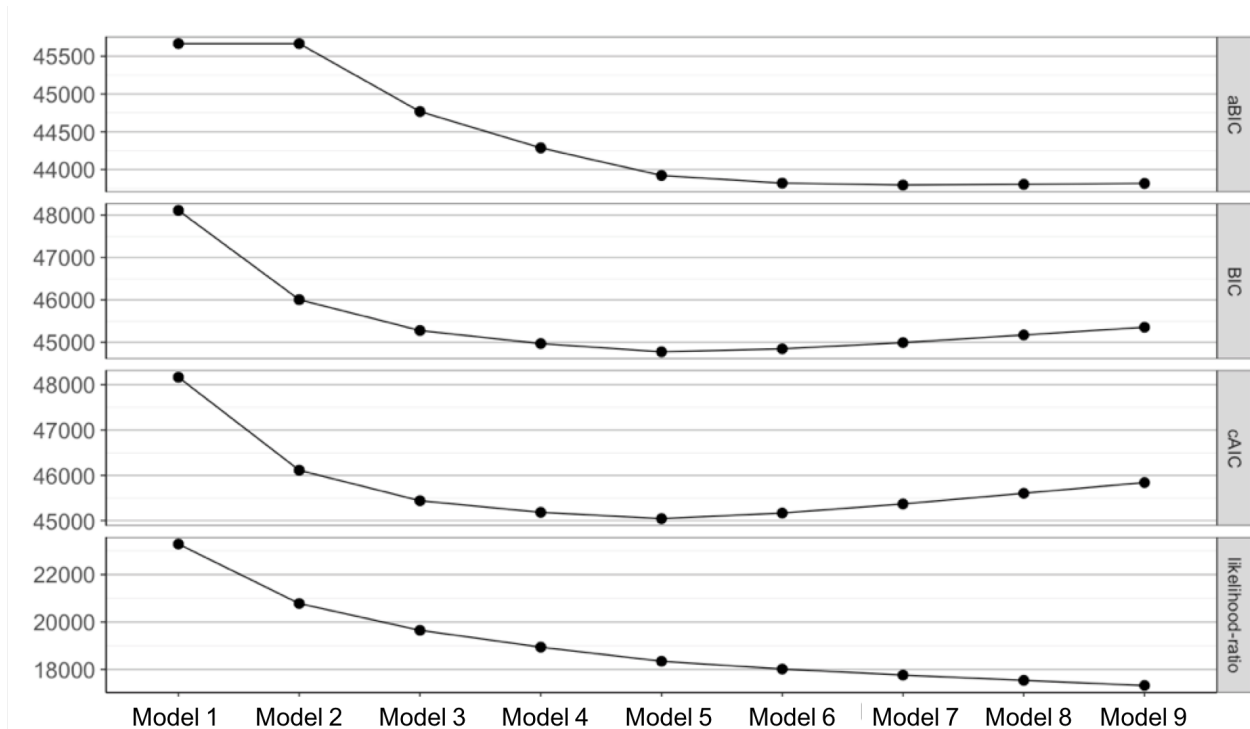
In the next chapter, the answers to each of the three research questions are reported. The finding section starts with a look at LCA model fit indicators. Findings are provided in order of the research questions: (a) What is the best-fitting LCA model of knowledge-sharing intention? (b) What are the characteristics of latent classes of knowledge-sharing intention patterns? (c) What dominant latent class patterns characterize knowledge-sharing intention in the selected countries?

Chapter 4

Findings

Provided in this chapter are findings from the LCA undertaken to answer the research questions. First, LCA model fit indicators are provided, and the number of classes selected is explained. The result of the LCA model is the probability of the association of certain response patterns to a latent class. Then, LCA findings are provided in the order of the research questions.

Research Question 1: What is the best-fitting LCA model of knowledge-sharing intention?



Source: Latent class analysis of *Generation of Talent Study* Survey Data (Pitt-Catsoupes & Sarkisian, 2014)

Notes: aBIC is a sample-size adjusted BIC. cAIC is an asymptotically consistent estimate of model order.

Figure 4.1. Plots of LCA model fit indicators for nine candidate models.

All of the model fit indicators in Figure 4.1 converge on a five-class model as the best-fitting LCA model for these data. As corroborating evidence, BIC, AIC, and Entropy indicators shown in Table 4.1 reveal that better model fit is not attained with greater than five classes.

Table 4.1
Latent class model fit indicators

Model	N of class	BIC	AIC	Entropy
Model1	1	48112.85	48165.85	-
Model2	2	46007.06	46114.06	.778
Model3	3	45278.78	45439.78	.785
Model4	4	44969.71	45184.71	.816
Model5	5	44775.48	45044.48	.816
Model6	6	44845.98	45168.98	.815
Model7	7	44992.58	45369.58	.821
Model8	8	45173.3	45604.3	.812
Model9	9	45356.53	45841.53	.845

Source: Latent class analysis of *Generation of Talent Study* Survey Data (Pitt-Catsoupes & Sarkisian, 2014)

A summary of the estimated model in Table 4.2 displays the probability of membership in five latent classes by survey item; Table 4.3 displays the response that showed highest membership probability only. Using entries in the first row of Table 4.2 as an example, the probability of membership in classes 1 through 5 is very low for respondents who “strongly disagree” with item M2_B1T. Yet, probabilities for membership in classes 1 through 5 was higher for respondents who “strongly agree”. In the previous example, specific membership probability value was suggested within Table 4.2. Shown in Table 4.3 is a summary of the contents of Table 4.2, leaving only the highest probability response in each class and item in order to identify the characteristics of the class.

Numeric LCA results from Table 4.2 are summarized qualitatively in Table 4.3, which contains the response alternatives with the dominant probabilities of membership in classes. For example, for KSN1, the dominant probability in Table 4.2 is “strongly agree” for class 1, which is the qualitative description for KSN1 for class 1 in Table 4.3. A complete mapping of

quantitative information from Table 4.2 to qualitative descriptions of class characteristics of items is shown in Table 4.3.

Table 4.2

Summary of latent class analysis: Probability of membership in five latent classes by survey item

Variable (Code Name)/Item	Response	Class 1	Class 2	Class 3	Class 4	Class 5
KSN1 (M2_B1T) Importance of opportunities to pass knowledge to the next generation	(1) Strongly disagree	.02	.00	.01	.00	.03
	(2) Moderately disagree	.05	.00	.02	.00	.01
	(3) Somewhat disagree	.07	.03	.08	.01	.00
	(4) Somewhat agree	.17	.26	.37	.10	.02
	(5) Moderately agree	.30	.55	.41	.34	.17
	(6) Strongly agree	.38	.15	.12	.54	.77
KSN2 (M2_B1U) I have opportunities to pass my knowledge to the next generation	(1) Strongly disagree	.19	.01	.05	.02	.04
	(2) Moderately disagree	.12	.05	.14	.06	.04
	(3) Somewhat disagree	.14	.05	.21	.10	.04
	(4) Somewhat agree	.25	.37	.39	.28	.15
	(5) Moderately agree	.16	.41	.20	.36	.32
	(6) Strongly agree	.15	.11	.02	.18	.41
WRIN1 (B1Q) Importance of positive working relationships with co-workers	(1) Strongly disagree	.01	.00	.01	.00	.02
	(2) Moderately disagree	.01	.00	.01	.00	.00
	(3) Somewhat disagree	.01	.00	.02	.00	.00
	(4) Somewhat agree	.10	.17	.16	.00	.01
	(5) Moderately agree	.24	.77	.52	.09	.04
	(6) Strongly agree	.63	.06	.28	.91	.91
WRIN2 (B1R) Importance of positive working relationships with immediate supervisors	(1) Strongly disagree	.00	.00	.01	.00	.02
	(2) Moderately disagree	.01	.01	.01	.00	.00
	(3) Somewhat disagree	.04	.00	.04	.00	.00
	(4) Somewhat agree	.09	.14	.14	.00	.00
	(5) Moderately agree	.23	.73	.47	.09	.03
	(6) Strongly agree	.63	.12	.33	.91	.94
COMM1 (D1AD) To help this organization succeed, I am willing to work harder than I have to	(1) Strongly disagree	.14	.00	.00	.01	.00
	(2) Moderately disagree	.10	.00	.02	.00	.00
	(3) Somewhat disagree	.18	.01	.08	.02	.00
	(4) Somewhat agree	.19	.17	.49	.17	.06
	(5) Moderately agree	.23	.53	.38	.42	.23
	(6) Strongly agree	.16	.29	.03	.38	.71
COMM2 (D1AE) I would take almost any job to keep working for this organization.	(1) Strongly disagree	.61	.05	.07	.11	.11
	(2) Moderately disagree	.14	.11	.22	.14	.09
	(3) Somewhat disagree	.11	.20	.37	.22	.13
	(4) Somewhat agree	.08	.33	.27	.27	.16
	(5) Moderately agree	.04	.24	.06	.18	.21
	(6) Strongly agree	.02	.08	.00	.08	.30
COMM3 (D1AF) I would turn down another job for more pay in order to stay with this organization	(1) Strongly disagree	.67	.04	.06	.08	.09
	(2) Moderately disagree	.12	.08	.19	.12	.04
	(3) Somewhat disagree	.08	.18	.38	.19	.16
	(4) Somewhat agree	.05	.36	.29	.31	.18
	(5) Moderately agree	.05	.29	.07	.23	.25
	(6) Strongly agree	.02	.05	.00	.07	.29

Variable (Code Name)/Item	Response	Class 1	Class 2	Class 3	Class 4	Class 5
ENG1 (D4A) At my work, I feel bursting with energy.	(1) Never	.12	.00	.00	.00	.00
	(2) Almost never	.29	.00	.00	.01	.01
	(3) Rarely - Once a month or less	.26	.02	.13	.01	.00
	(4) Sometimes - A few times a month	.19	.03	.34	.19	.00
	(5) Often - Once a week	.05	.12	.34	.30	.02
	(6) Very often - A few times a week	.06	.57	.16	.46	.31
	(7) Always - Every day you work	.03	.26	.03	.04	.65
ENG2 (D4C) I find the work that I do full of meaning and purpose.	(1) Never	.14	.00	.00	.00	.00
	(2) Almost never	.20	.00	.00	.00	.00
	(3) Rarely - Once a month or less	.19	.01	.16	.02	.00
	(4) Sometimes - A few times a month	.24	.03	.36	.10	.00
	(5) Often - Once a week	.06	.10	.38	.24	.00
	(6) Very often - A few times a week	.11	.54	.10	.52	.11
	(7) Always - Every day you work	.06	.32	.00	.11	.88
ENG3 (D4D) I am immersed in my work.	(1) Never	.11	.00	.00	.00	.01
	(2) Almost never	.10	.00	.00	.00	.00
	(3) Rarely - Once a month or less	.10	.00	.08	.01	.00
	(4) Sometimes - A few times a month	.25	.00	.24	.05	.00
	(5) Often - Once a week	.05	.04	.37	.18	.01
	(6) Very often - A few times a week	.21	.53	.28	.55	.12
	(7) Always - Every day you work	.18	.43	.04	.22	.85
Total percentage in sample		10%	19%	20%	31%	20%

Note. Total percentage in the sample indicates percentage of sample classified in a group.

Source: Latent class analysis of *Generation of Talent Study* Survey Data (Pitt-Catsouphe & Sarkisian, 2014)

Research Question 2: What are the characteristics of latent classes of knowledge-sharing intention patterns?

Research question 1 was developed to gather information on how organization members can be grouped into response classes and to identify the class characteristics of the group. Based on class and probability information, the five classes identified in the LCA model were named under Research Question 2 as follows: (a) bystanders who showed high knowledge-sharing intention and relationships, but were low engagement and commitment (class 1), (b) engagement- and commitment-oriented knowledge sharers who were medium and medium-high on knowledge-sharing intention and relationship, and medium-high on engagement and commitment (class 2), (c) the ordinary group of medium value across all indicators (class 3), (d)

relationship-oriented knowledge sharers high in knowledge-sharing intention, relationship, engagement and medium-high commitment (class 4), and (e) ideal knowledge sharers high in knowledge-sharing intention, relationship, engagement and commitment (see Table 4.3).

Bystanders

This class is characterized by high knowledge-sharing intention and perception of relationship but low engagement and commitment patterns on class association probability. This group was 10% of the sample population—approximately 175. This group showed a high probability of positive perceptions of knowledge-sharing (moderately agree .3, strongly agree .38), but a relatively low probability of perceptions on opportunity to pass knowledge to the next generation (highest in moderately agree, .25). Also, this group showed a high probability to engage in relationships. They also were moderately engaged and low commitment. For the two questions related to organization commitment, this class showed a high probability of strongly disagreeing (COMM2[.61], COMM3[.67]). Level of engagement was moderately low. For two questions related to work engagement, this class had a dominant probability to respond sometimes – a few times a month (ENG2[.24], ENG3[.25]) and moderately low engagement in ENG1 (almost never, .29). In sum, this class regarded knowledge-sharing as being important but those in this class had a relatively low opportunity to share knowledge with others (next generation). This group had relatively low work engagement and commitment levels.

Engagement- and commitment-oriented knowledge sharers

Engagement- and commitment-oriented knowledge sharers represented 19% of the sample population—approximately 312 employees. This group's class association probability pattern was medium and medium-high on knowledge-sharing intention and relationship, and medium-high on engagement and commitment. This group was medium and medium-high on

knowledge-sharing intention and relationships. All indicators were a little bit higher than for those in class 3. On the question of the importance of the opportunity to pass knowledge to the next generation, the dominant probability was to moderately agree (.55). For the question on the opportunity to pass on knowledge, the dominant probability was to moderately agree (.41). On engagement (all in very often, ENG1[.57]; ENG2[.54]; ENG3[.53]) and commitment (COMM1, moderately agree [.53]; COMM2, somewhat agree [.33]; COMM3, somewhat agree .36) levels were moderately high. In sum, this class was at a medium level of perception of knowledge-sharing as being important but relatively high opportunity to share knowledge with the other (next generation). Also, this group was at a medium-high level on work engagement and commitment.

Ordinary group

The ordinary group was characterized as being at medium levels on importance of knowledge-sharing and perceived opportunity to engage in knowledge-sharing, and relatively high levels on relationship. It was in the medium range on engagement and commitment. This group was 20% of the sample population—approximately 340 employees, which is the second largest group in the sample. The dominant response on importance of knowledge-sharing to the next generation was moderately agree (.41); this group somewhat agreed about the opportunity to engage in knowledge-sharing (.39). Dominant responses on work were the same as for class 2 (in both questions on relationship—somewhat agree, .59, .47). Major comparison between engagement- and commitment-oriented knowledge sharers and ordinary group seem lower royalty/commitment and engagement from ordinary group, yet their perception of knowledge sharing and relational aspects seem similar.

Relationship-oriented knowledge sharers

Classes 4 and 5 were highly motivated to engage in knowledge-sharing relationships. Compared to class 5, class 4 had relatively low levels of commitment and engagement but was higher than other groups. This class was the largest group in the sample (31%, approximately 515 employees). In sum, this group highly perceived knowledge-sharing and relationship as important but was relatively low on commitment and engagement compared to ideal knowledge sharers who represents the all-high membership association probability in the all indicators.

Ideal knowledge sharers

Class 5 showed a high probability of answering strongly agree or always across all indicators. This group was 20% of the sample population—approximately 333 employees.

Table 4.3
Summary of latent class characteristics

Variable (Codebook Name) Item	Class 1 - Bystanders	Class 2 - Engagement- and commitment- oriented knowledge sharers	Class 3 - Ordinary group	Class 4 - Relationship- oriented knowledge sharers	Class 5 - Ideal knowledge sharers
<i>Knowledge Sharing Intention</i>					
KSN1 (M2_B1T) Importance of opportunities to pass knowledge to the next generation	Strongly agree	Moderately agree	Moderately agree	Strongly agree	Strongly agree
KSN2 (M2_B1U) I have opportunities to pass my knowledge to the next generation	Somewhat agree	Moderately agree	Somewhat agree	Moderately agree	Strongly agree
<i>Relationship with Co-Workers & Supervisors</i>					
WRIN1 (B1Q) Importance of positive working relationships with co-workers	Strongly agree	Moderately agree	Moderately agree	Strongly agree	Strongly agree
WRIN2 (B1R) Importance of positive working relationships with immediate supervisors	Strongly agree	Moderately agree	Moderately agree	Strongly agree	Strongly agree
<i>Organizational Commitment</i>					

Variable (Codebook Name) Item	<i>Class 1 - Bystanders</i>	<i>Class 2 - Engagement- and commitment- oriented knowledge sharers</i>	<i>Class 3 - Ordinary group</i>	<i>Class 4 - Relationship- oriented knowledge sharers</i>	<i>Class 5 - Ideal knowledge sharers</i>
COMM1 (D1AD) To help this organization succeed, I am willing to work harder than I have to	Moderately agree	Moderately agree	Somewhat agree	Moderately agree	Strongly agree
COMM2 (D1AE) I would take almost any job to keep working for this organization.	Strongly disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly agree
COMM3 (D1AF) I would turn down another job for more pay in order to stay with this organization	Strongly disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly agree
<i>Work Engagement</i>					
ENG1 (D4A) At my work, I feel bursting with energy.	Almost never	Very often - A few times a week	Sometimes - A few times a month	Very often - A few times a week	Always - Every day you work
ENG2 (D4C) I find the work that I do full of meaning and purpose.	Sometimes - A few times a month	Very often - A few times a week	Often - Once a week	Very often - A few times a week	Always - Every day you work
ENG3 (D4D) I am immersed in my work.	Sometimes - A few times a month	Very often - A few times a week	Often - Once a week	Very often - A few times a week	Always - Every day you work

Source: Latent class analysis of *Generation of Talent Study* Survey Data (Pitt-Catsoupes & Sarkisian, 2014)

Research Question 3: What dominant latent class patterns characterize knowledge-sharing intention in the selected countries?

Research question 3 was developed to determine which class was dominant in selected countries. In order to understand how the proportion of classes differ in different countries, the proportion of each class in countries was calculated (see Table 4.4). Dominant class means a class that has dominant population in the country. The proportion of each class in the country were identified and sorted by in order. Bystanders (class 1) was dominant in the Mexico sample. The Mexico sample had the highest percentage in class 1 compared to other countries (41%). Engagement- and commitment-oriented knowledge sharers (class 2) were dominant in the India

sample (41%), The ordinary group (class 3) was dominant in the Brazil sample. Relationship-oriented knowledge sharers (class 4) were dominant in the Spain sample. Ideal knowledge sharers (class 5) were dominant in the Netherlands. In the China sample, engagement- and commitment-oriented knowledge sharers (29%) and ideal knowledge sharers (29%) were dominant classes. In the Japan sample, ideal knowledge sharer was the dominant class. In the U.S. sample, engagement- and commitment-oriented knowledge sharers formed the most dominant class.

Table 4.4
Proportion of latent classes in each country

Country	<i>Class1-</i> Bystanders	<i>Class2-</i> Engagement- and commitment- oriented knowledge sharers	<i>Class3-</i> Ordinary group	<i>Class4-</i> Relationship- oriented knowledge sharers	<i>Class5-</i> Ideal knowledge sharers
U.S.	11%	38%	14%	14%	22%
Netherlands	15%	30%	7%	11%	37%
Spain	27%	24%	6%	34%	9%
Brazil	21%	39%	20%	10%	10%
Mexico	41%	22%	4%	24%	8%
South Africa	24%	33%	24%	9%	9%
India	16%	41%	13%	18%	12%
China	13%	29%	4%	25%	29%
Japan	11%	28%	8%	19%	34%

Source: Latent class analysis of *Generation of Talent Study* Survey Data (Pitt-Catsoupes & Sarkisian, 2014)

Summary of Findings

In order to answer the research questions posed for this study, LCA was conducted with data from the *Generation of Talent Study* survey—findings were provided in this chapter. A five-class model was identified based on mathematical LCA model fit indicators as the final research model. A probability of membership table was provided as the summary of the findings from the

latent class analysis. Each class was labeled by identifying dominant probability of membership in a response.

The five classes identified in the LCA analysis were: (a) bystanders, (b) engagement- and commitment-oriented knowledge sharers, (c) ordinary group, (d) relationship-oriented knowledge sharers, and (e) ideal knowledge sharers. Bystanders regarded knowledge-sharing as being important but had relatively low opportunity to share knowledge with the next generation. Engagement- and commitment-oriented knowledge sharers felt that knowledge-sharing was important but had relatively high opportunity to share knowledge with others at a medium-high level of engagement and commitment. The ordinary group was characterized as being at medium levels across variables. Relationship-oriented knowledge sharers had a relatively high level of agreement on the importance of relationships with co-workers and immediate supervisors. Ideal knowledge sharers evidenced a high probability of strongly agreeing on all other indicators. Finally, a proportion of these classes was found in the dominant class in each nation's sample.

Proportion of each class in countries that included in this study was investigated. There were dominant knowledge-sharing intention classes in each country. Bystanders (class 1) was dominant in the Mexico sample. Engagement- and commitment-oriented knowledge sharers (class 2) were dominant in the India, China, and the United States samples. The ordinary group (class 3) was dominant in the Brazil sample. Ideal knowledge sharers (class 5) were dominant in the Netherlands and Japan samples.

In the next chapter, a summary, discussion, and recommendations are provided.

Chapter 5

Summary, Discussion, and Recommendations

Summary

The purpose of this study was to reveal hidden grouping preferences and patterns that represent knowledge-sharing intention, and the psychological factors closely related to knowledge-sharing, such as commitment and work engagement. Findings are summarized here to answer this study's research questions: (a) what is the best-fitting LCA model of knowledge-sharing intention? (b) what are the characteristics of latent classes of knowledge sharing intention patterns? (c) what dominant latent class patterns characterize knowledge-sharing intention in the countries?

Literature related to knowledge-sharing and cultural, social, and organizational psychological factors was reviewed. The conceptual structure suggested knowledge-sharing as an interactive behavior influenced by organization members' psychological factors such as work engagement and organizational commitment that reflects an exchange of socially constructed intellectual capital in the cultural context. Most of the knowledge-sharing literature has focused on relations between variables. Knowledge-sharing is an interactive behavior between organizational members, exchanging intellectual capital throughout social relationships. In short, knowledge-sharing intention is the immediate indicator of knowledge-sharing behavior. Social structure influences knowledge-sharing intention and behavior. Since national culture also influences knowledge-sharing intention and behavior, it might be expected that different nations might have different dominant knowledge-sharing characteristics. Since knowledge-sharing intention and behavior are voluntary self-motivated interactions, it is difficult to expect

sustainable knowledge-sharing behavior without engaging in psychological sustainability activities, such as commitment and engagement.

LCA is used to identify latent structures represented by classes, which are distinct subgroups, types, or categories of similar objects or individuals. In other words, use of Latent Class Analysis (LCA) enables statistical classification by homogenous response patterns. Different types of knowledge-sharing strategies or preferences were identified via LCA. The probability of membership in a class was estimated by examining the similarity of participants' responses within classes. In this study, LCA was conducted using the following procedure. First, nine LCA models were estimated with increasing numbers of classes in each model. Second, the fit of these LCA models to the data was assessed using several versions of the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) as well as a measure of Entropy and a likelihood ratio.

Knowledge-sharing intention and perception of relationships with co-workers were high in the following groups: bystanders, engagement- and commitment-oriented knowledge sharers, relationship-oriented knowledge sharers, and ideal knowledge sharers. Each class represents different knowledge-sharing strategies and tendencies. Bystanders regarded knowledge-sharing as being important but had relatively low opportunity to share knowledge with the next generation. Engagement- and commitment-oriented knowledge sharers felt that knowledge-sharing was important but had relatively high opportunity to share knowledge with others at a medium-high level of engagement and commitment. The ordinary group was characterized as being at medium levels across variables. Relationship-oriented knowledge sharers had a relatively high level of agreement on the importance of relationships with co-worker and immediate supervisors. Ideal knowledge sharers evidenced a high probability of strongly

agreeing on all other indicators. Major comparison between engagement- and commitment-oriented knowledge sharers and ordinary group seem lower royalty/commitment and engagement from ordinary group, yet their perception of knowledge sharing, and relational aspects seem similar. Major comparison between Relationship-oriented knowledge sharers and engagement- and commitment-oriented knowledge sharers seem similar commitment and engagement, but different level of perceiving KS and relational aspects as important. Ideal knowledge sharers seem that if extremely committed and engaged, KS and relationship seem to be taken care of. Finally, a proportion of these classes was found in the dominant class in each nation's sample.

Different nations have different dominant knowledge-sharing characteristics. This indicates that different cultural factors influence the organizational knowledge-sharing culture. In more developed countries such as the Netherlands and Japan, the ideal knowledge sharer class was dominant. The proportion of each class in countries included in this study was investigated. Bystanders (class 1) were dominant in the Mexico sample. Engagement- and commitment-oriented knowledge sharers (class 2) were dominant in the India, China, and United States samples. The ordinary group (class 3) was dominant in the Brazil sample. Ideal knowledge sharers (class 5) were dominant in the Netherlands and Japan samples.

Relationship to Existing Literature

This study followed a person-centered approach in evaluating knowledge-sharing, and revealed homogenous groups based on intention, relationship, attitude, and psychological factors. Knowledge-sharing is regarded as the important factor in an organization's competitive advantage (Kogut & Zander, 1992).

The knowledge-sharing patterns that reflect perceptions of their psychological and relational dimensions were diverse in this study. Five different knowledge-sharing intention

patterns were identified: bystander, engagement- and commitment-based, motivated knowledge-sharing, ordinary, and ideal knowledge. This finding shows that knowledge-sharing intention has diverse dimensions. Except for the groups with the lowest and highest knowledge-sharing intention patterns, psychological and relational factors revealed the characteristics of the last of the classes. These two group's knowledge-sharing patterns were the result of organization members' psychological factors (Chang, Liao, Lee, & Lo, 2015) as represented in socially constructed intellectual capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Study findings indicated a preference for knowledge-sharing strategies like those followed by organizations with different applied innovation strategies in the Jensen et al. (2007) study.

This study's findings agree with the discussion on social dimensions. The group with a high probability of perceiving a relationship with other workers was more likely to engage in knowledge-sharing, organizational commitment, and work engagement—that is, the ideal knowledge sharer group. Organization psychological factors in the classes indicated different motivations for engaging in knowledge-sharing. This result agrees with Bakker and Leiter (2010), “Collegial relationships hold the potential for knowledge-sharing in which employees not only respond similarly to work environment but also influence one another's experience of engagement” (p. 5).

Literature related to knowledge-sharing and cross-cultural studies focused mainly on Western countries' knowledge-sharing patterns (Peltokorpi, 2006; Wang & Noe, 2010). This study found that the dominant knowledge-sharing preference in each country reflected national cultural aspects. Although the comparison with Hofstede (1980)'s taxonomy was not in the scope of this study, various dominant classes in each country hinted that the knowledge-sharing

strategy reflected different social and cultural preferences or motivational mechanisms of knowledge-sharing.

Therefore, this study contributes to the knowledge-sharing literature by revealing the homogenous group characteristics of knowledge-sharing and by identifying group characteristics using a comparative cross-sectional approach. In practice, organizations and HR professionals should consider their own employees' differently constructed knowledge-sharing intention as derived from psychological and relational factors when designing, implementing, and evaluating interventions to enhance a level of knowledge-sharing.

Limitations in the Study Findings

This study had some limitations. First, although it had a relatively large sample and utilized a theoretically purposeful sampling approach, sampling followed a convenience sampling approach. It should be noted that the ability to generalize study results is limited. Second, due to the limitations of publicly available secondary data, there were restrictions on measurement and variable selection. Knowledge-sharing intention and perception, and importance of relationships should be considered as proxies for the proper measurement of constructs. Even measurements validated by other research were selectively blind or suggested by some worksites and countries. Testing relationships with other covariates is one limitation of this study. Considering the group differences, relationships with other covariates should be tested in future research. Finally, the multi-group approach in measuring invariance was not implemented. To obtain proper comparisons, variance in groups should be controlled in future research. In spite of the limitations, this study identified grouping preferences in knowledge-sharing patterns, following factors identified from the knowledge-sharing literature.

Recommendations for Further Research

Many organizations are striving to facilitate knowledge-sharing with resources and systems. However, such initiatives will not work properly unless organizations and managers recognize that knowledge-sharing is a dynamic cognitive and behavioral interaction with social, cultural, and psychological dimensions. This study's findings indicate that there are different types of knowledge-sharing practices. Further, the type of knowledge-sharing is formed by social and psychological factors. For example, the bystander class is characterized as having high knowledge-sharing intention and perceptions of relationships but low engagement and commitment patterns. Those in this group would receive from managers a greater chance to share knowledge by extending knowledge-sharing channels and opportunities. They also were moderately engaged and low commitment. An effective leader who identified this type of group would consider enhancing organization members' work engagement and organizational commitment level. Additionally, in different countries and cultures, the dominant style of knowledge-sharing reflected cultural factors. It would be useful for international organizations to design cross-cultural training. Also, this study's findings would help expatriates who need to create a bridge between a host country and a local country's business. This study's results suggest that organizations should look carefully at the hidden structures of knowledge-sharing. Since this study showed that different psychological factors define the characteristics of knowledge-sharing motivation, organizations should pay more attention to stimulating knowledge-sharing activities when designing interventions.

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