THE INTERACTION EFFECT OF ORGANIZATIONAL AND INDIVIDUAL FACTORS ON KNOWLEDGE SHARING BEHAVIOR: THE CASE OF KAZAKHSTAN

SANAT KOZHAKHMET

FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR

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THE INTERACTION EFFECT OF ORGANIZATIONAL AND INDIVIDUAL FACTORS ON KNOWLEDGE SHARING BEHAVIOR: THE CASE OF KAZAKHSTAN

ABSTRACT

One of the key challenges for contemporary organizations is finding methods of motivating employees to share their knowledge and expertise with their peers. A number of firms try to deal with this challenge by implementing different knowledge management systems. However, despite investments in knowledge management systems, knowledge sharing often does not simply occur. Research findings report that a significant reason for this is that individuals are often reluctant or uneager to share their personal knowledge. Consequently, it is important to understand the factors that might influence employees' behavior in this arena. Previous studies have attempted to understand knowledge sharing behavior from different perspectives; however, only a few of them have pursued both an organizational and a psychological perspective on how knowledge sharing behavior is instigated. The aim of this study is to fill that gap by investigating how investment in employee development and psychological capital influence knowledge sharing behavior. In addition, this research seeks to explore how organizational identification moderates the investment in employee development-psychological capital and psychological capital-knowledge sharing behavior links. From a critical review of the literature, a research model was proposed to address the answers to the research questions. Data was collected through questionnaires completed by 240 employees of large companies operating in Kazakhstan, and Partial Least Squares Path Modeling was used to analyze the data. The research findings support four out of the six hypotheses. The results revealed that the influence of investment in employee development on knowledge sharing behavior was mediated by psychological capital. Moreover, it was found that organizational identification moderates the relationship

between employees' psychological capital and knowledge sharing behavior. However, the same variable did not modify the relationship between investment in employee development and psychological capital. The results of this research can help companies by allowing them to better understand how to foster knowledge sharing behavior in a more effective way. In addition, the study provides theoretical and practical contributions to knowledge management studies.

Keywords: Knowledge sharing, psychological capital, perceived investment in employee development, organizational identification.

KESAN INTERAKSI ORGANISASI DAN FAKTOR-FAKTOR INDIVIDU TERHADAP PERKONGSIAN PENGETAHUAN: KASUS KAZAKHSTAN

ABSTRAK

Salah satu cabaran penting bagi organisasi kontemporari adalah bagaimana mendorong individu untuk berkongsi pengetahuan dan kepakaran mereka dengan orang lain. Beberapa firma cuba menangani cabaran ini dengan melaksanakan sistem pengurusan pengetahuan yang berbeza. Walau bagaimanapun, walaupun pelaburan dalam sistem pengurusan pengetahuan, perkongsian pengetahuan sering tidak berlaku. Penemuan penyelidikan melaporkan bahawa sebab yang penting ialah individu sering enggan atau tidak ingin berkongsi pengetahuan peribadi mereka. Oleh itu, adalah penting untuk memahami faktor-faktor yang mungkin mempengaruhi tingkah laku pekerja untuk berkongsi pengetahuan atau kepakaran. Kajian terdahulu telah cuba memahami perilaku perkongsian pengetahuan dari perspektif yang berbeza. Walau bagaimanapun, hanya beberapa kajian yang telah mencetuskan tingkah laku perkongsian pengetahuan dari perspektif organisasi dan psikologi. Tujuan kajian ini adalah untuk mengisi jurang dengan menyiasat bagaimana faktor organisasi dan psikologi mempengaruhi tingkah laku perkongsian pengetahuan. Dari tinjauan kritikal terhadap kesusasteraan, satu model penyelidikan dicadangkan untuk menjawab jawapan kepada soalan penyelidikan. Data dikumpul melalui soal selidik yang diselesaikan oleh pekerja syarikat besar yang beroperasi di Kazakhstan dan and 'Partial Least Squares Path Modeling' digunakan untuk menganalisis data. Penemuan penyelidikan menyokong lima daripada enam hipotesis. Hasil kajian menunjukkan bahawa pengaruh pelaburan dalam pembangunan pekerja terhadap tingkah laku perkongsian ilmu diantara modal psikologi. Selain itu, didapati bahawa pengenalpastian organisasi menyederhanakan hubungan antara modal psikologi pekerja dan tingkah laku perkongsian pengetahuan. Walau bagaimanapun, pembolehubah yang sama tidak mengubah suai hubungan antara pelaburan dalam

pembangunan pekerja dan modal psikologi. Hasil kajian ini dapat membantu syarikat-syarikat dengan membenarkan mereka memahami dengan lebih baik bagaimana memupuk tingkah laku perkongsian pengetahuan dengan cara yang lebih berkesan. Di samping itu, kajian ini memberi sumbangan teori dan praktikal kepada kajian pengurusan pengetahuan.

Kata kunci: perkongsian pengetahuan, modal psikologi, perceived investment dalam pembangunan pekerja, identifikasi organisasi.

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LIST OF SYMBOLS AND ABBREVIATIONS

AVE	:	Average Variance Extracted
CB-SEM	:	Covariance-Based Structural Equation Modeling
CFI	:	Confirmatory Factor Analysis
CR	:	Composite Reliability
EFA	:	Exploratory Factor Analysis
F^2	:	Effects Size
GFI	:	Goodness-of-fit Index
HRD	:	Human Resource Development
HRM	:	Human Resource Management
HTMT	:	Heterotrait-Monotrait Ratio of Correlations
IPMA	:	Importance Performance-Matrix Analysis
IS	:	Information System
KM	:	Knowledge Management
KS	:	Knowledge Sharing
KSB	:	Knowledge Sharing Behaviour
OB	:	Organizational Behaviour
OCB	:	Organizational Citizenship Behaviour
OID	:	Organizational Identification
PIED	:	Perceived Investment in Employee Development
PLS	:	Partial Least Square
PLS-SEM	:	Partial Least Square Structural Equation Modelling
POB	:	Positive Organizational Behaviour
POS	:	Positive Organizational Scholarship
PsyCap	:	Psychological Capital

RO	:	Research Objective
RQ	:	Research Question
SEM	:	Structural Equation Modelling
SET	:	Social Exchange Theory
SIT	:	Social Identity Theory
SPSS	:	Statistical Package for Social Science
TI	:	Tolerance Index
TPB	:	Theory of Planned Behaviour
TRA	:	Theory of Reasoned Action
VIF	:	Variance Inflation Factor

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CHAPTER 1. INTRODUCTION

1.1. Introduction

In today's human capital-driven economy, knowledge is regarded as a critical strategic resource of any organization (Gagné, 2009). The competitive nature of business is based largely in intellectual capital, which is mainly reflected as the knowledge possessed by individuals (Kaplan & Norton, 2004). During last three decades, there has been a gradual shift towards knowledge intensive work, which requires high levels of cognitive and intellectual abilities. Such terms as 'tacit knowledge', 'competence', 'capability' and 'intangible assets' now go beyond the usual disciplinary boundaries. These knowledge assets are complex social processes and not easily imitated, and therefore they can provide companies with a competitive advantage (Alavi & Leaner, 2001). It has been shown that companies that manage knowledge effectively are more likely to be innovative (Argote, 2013).

Within the growing role of the organizational knowledge, knowledge management becomes a key organizational issue for maintaining long-term success. A number of companies have made significant investments in knowledge management (KM) systems and activities to promote transferring knowledge across organizational subunits (Alavi & Leidner, 2001). A review of the relevant literature highlights that some organizations have benefited from established KM systems. These benefits are (1) preventing the potential loss of intellectual capital that results from employees leaving, (2) enhancing performance by allowing all organizational members to easily obtain knowledge when necessary, (3) improving employee satisfaction by enabling them to gain knowledge from others and (4) delivering products and services in a better way (Hislop et al., 2018). Consequently, the field of KM has attracted interest from both scholars and practitioners. The major KM activities include such processes as: knowledge creation, knowledge acquisition, knowledge capture, knowledge assembly, sharing, integration

and exploitation (Nielsen, 2006). In this stream, KM pertains to the capability of an organization to manage these processes effectively so that the organization will create valuable, unique, and inimitable assets to reach long-term objectives (Gupta & Sharma, 2004).

In KM, an essential idea is that knowledge can be shared (Nonaka, 1995). Previous researchers have pointed out that knowledge sharing (KS) is a major component of KM (Alavi & Leidner, 2001). This view might be supported by the evidence that KS has a positive impact on KM results (Bock, Zmud, Kim & Lee, 2005; Earl, 2001). More specifically, from an organizational perspective, it has potential to affect sales growth and revenue for goods or services that are newly introduced to the market (Wang et al., 2016). In addition, from an individual perspective, knowledge sharing behavior (KSB) contributes to lower employee turnover rate, which is a great positive (Reychav & Weisberg, 2009). Other researchers have reported another important feature of KSB, it transfers knowledge that resides in individuals to the organizational level, where it is translated into economic and competitive gains (Hendriks, 1999). As a result, there is a well-established understanding that KSB is related to various performance outcomes (Bartol & Srivastava, 2002, Aboelmaged, 2018, Allameh, 2018).

However, knowledge sharing behavior does not happen on their own, since specific and unique features of knowledge (namely, its personal and tacit nature, its initiation cost, and the inherent fuzziness of the concept) can create extra obstacles for this process (Szulanski, 2000). Many people believe that their knowledge resource is highly valuable and intangible. When they share that knowledge, they may harbor fear of losing power. This is one of the likely causes of individuals' reluctance to share their knowledge (Caspi & Blau, 2011; Soojin Lee, Yoo, & Yun, 2015). Moreover, despite managers' best efforts, individuals tend to hoard knowledge (Sveiby & Simons, 2002). As a result, extensive KSB within organizations is often an issue of great concern.

Therefore, a fundamental challenge for organizations is how to facilitate KSB among employees. Similarly, firms operating in Kazakhstan face many difficulties in promoting KSB (Kozhakhmet and Nazri, 2017). Particularly, such peculiarities of post-Soviet Kazakhstani firms culture as low-trust level, propensity to suspicion (Minbaeva and Muratbekova-Touron, 2013), and hostile environment to knowledge sharing (Holden and Michailova, 2014) may act as additional obstacles to KM efforts. In this regard, identifying factors that may foster individuals' KSB has attracted the interest of both KM scholars and practitioners. The literature review has suggested that possible antecedents of KSB might range from the individual to the organizational level (Wang & Noe, 2010, Al-Kurdi, et al., 2018). One reason for this is that KSB is a complex social phenomena which requires integrating multiple factors and clarifying the relationships among them by combining different theories (Li, Zhang, Zhang & Zhou, 2017; Yen, Tseng & Wang, 2015, Andreeva & Sergeeva, 2016,).

Recent studies have begun to focus on integrating organizational and psychological factors to better understand effective methods of promoting individuals' pro-social organizational behavior – e.g., knowledge sharing (Llopis & Foss, 2016; Wu, Lee, & Tetrick, 2016). Organizational factors are factors that are related to the organization that may influence individuals' KSB. More specifically, in a KM context, organizational factors may include a variety of human resource management (HRM) practices which are designed to enhance employees' KSB (Wang & Noe, 2010). Perhaps one of the most important elements of HRM practices is employee development. This notion can be supported by the evidence that in today's dynamic and turbulent environments, companies are concerned whether the competency level of employees is sufficient enough to stay at competitive edge (Jung and Takeuchi, 2012). Therefore, it is in companies' interest to train and develop their employees to become more competitive. However, a company's actual investment in HRs can be effectively only when

employees understand that their organization is investing in them (Bowen and Ostroff, 2004, Nerstad et al., 2018). Therefore, in this study, the concept of perceived investment in employee development was chosen as an organizational factor that may affect KSB.

Psychological factors are factors derived from an individual's personality traits and psychological state. That means that it comes from the person's internal being. These factors are significant in understanding KSB because they are able to shape the way employees behave in the workplace (Robbins and Judge, 2014). For companies to compete in a turbulent marketplace, capabilities other than human capital have become increasingly important (Luthans and Youssef 2004). The same authors further argued that psychological capital has emerged as such a competitive resource that goes beyond the traditional concept of human capital. Psychological capital (PsyCap) refers to the positive personal resource comprising the four psychological states of hope, self-efficacy, resilience, and optimism (Luthans et al., 2015). Following these arguments, this work aims to analyze PsyCap as a psychological factor that may enhance KSB.

Another psychological factor that may play a significant role in understanding organization–employee relationship is organizational identification. This concept is a psychological factor pertaining to the degree to which individual perceives oneness with or belongingness to a firm (Ashforth & Mael, 1989). This concept can help to build a positive working atmosphere and interpersonal relationships in the workplace (Hinde, 1997), which can, in turn, may alleviate the negative consequences of "knowledge sharing hostile" environment of post-Soviet Kazakhstani context (Husted et al., 2012). These arguments motivate the author to include this psychological factor in the current study.

As discussed earlier, integrating organizational and psychological factors are important to effectively encourage employees' KSB. Considering this research direction, this work

addresses the influence of organizational and psychological factors on individuals' KSB by integrating two theories (social exchange theory and social identity theory).

1.2. Problem Statement

In today's knowledge- and innovation-driven economy, organizations consider knowledge and its management as key strategic resources for sustaining competitive advantage (Woods & Cortada, 2013). Consequently, a growing number of companies have introduced KM systems in order to manage knowledge more efficiently. As discussed before, KM involves several activities, the first of which is KSB. This argument can be supported by the findings that KSB is critical to a company's financial performance (Wang & Wang, 2012). Also, it has been found that it is crucial for sustaining competitive advantage and improving productivity (Foss, Husted & Michailova, 2010; Garcia, Cegarra & Jahantab, 2018, Ali et al, 2018).

As it was discussed above, in order to foster KSB, number of companies has heavily invested in KM initiatives. Despite these initiatives, employees are still reluctant to share their knowledge (Connelly & Zweig, 2014). This lack of KSB may impede or inhibit KM initiatives (Ipe, 2003, Alshamsi & Ajmal, 2018).

A significant part of the research considers the success of KM initiatives dependent on individuals' positive attitudes towards KSB and their actual involvement in KSB as a voluntary act (Ipe, 2003). However, even the supporters of the idea of voluntary KSB agree that individuals view their knowledge as an intangible personal asset and prefer to withhold it instead of sharing it (Tsay, Lin, Yoon & Huang, 2014; Anaza & Novlin 2017). Therefore, perhaps one of the major challenges for contemporary organizations is how to encourage employees to share their expertise and knowledge (Amayah, 2013; Dasí, Pedersen, Gooderham, Elter & Hildrum, 2017, Abbas et al., 2018).

Similarly, many companies operating in Kazakhstan have faced difficulties in motivating employees to engage in KSB (Kozhakhmet & Nazri, 2017). More specifically, strong vertical structures and a "knowledge sharing hostile" environment remain dominant in Kazakhstani organizational realities (Kozhakhmet et al., 2017). Moreover, Kazakhstan is a very hierarchical society where employees are expected to show high level of respect for those in authority. These peculiarities reflected in Kazakhstani management culture, which characterized as high uncertainty avoidance and a short-term orientation (Minbaeva and Muratbekova-Touron, 2013) which potentially may lead to such counter-productive behavior as knowledge-hoarding (May & Stewart, 2013). This issue has been especially difficult to overcome in post-Soviet context, since knowledge hoarding was viewed as a normal behavior in a Soviet culture (May & Stewart, 2013).

Up to now, not much has been observed about factors that may affect KSB in post-Soviet Kazakhstan. Accordingly, there is considerable interest in identifying factors that may facilitate KSB in this country. Extensive research in this field has led to a broad recognition that KSB is a complex phenomenon influenced by a wide variety of elements. Consequently, KSB should be examined from various perspectives.

Previous research suggests that KSB cannot be forced but it can only be fostered or promoted (Henttonen, Kianto & Ritala, 2016). Following this direction, different human resource management practices (Benson, Finegold & Mohrman, 2004) were designed to promote employees' KSB (Minbaeva, Pedersen, Björkman & Fey, 2013; Nien & Min, 2011). Our literature search has highlighted the emergence of a key human resource management practice that may directly affect KSB: investment in employee development. In the current research, the term of perceived investment in employee development (PIED) was selected as an organizational factor that may enhance individuals' KSB. PIED defined as employees' assessment of their companies'

dedication to employees' professional development by assisting them learn and acquire up-to-date skills and expertise (Lee and Bruvold, 2003). PIED may act as a key organizational factor that may effectively promote KSB in post-Soviet Kazakhstani context, where knowledge hoarding is prevalent. This idea can be supported by the argument that in post-Soviet economies, number of employees are working in fields for which they have no formal qualification (Fey et al, 2009). So, investment in employee development could reap especially high benefits in post-Soviet states (as well Kazakhstan), where people usually lack formal training required for their jobs (Fey et al, 2009) even it is dominated by "knowledge hostile" environments.

However, some scholars have challenged the straightforward relationship between human resource development practices (e.g., PIED) and pro-organizational behaviors (e.g., KSB). In other words, they have argued that this relationship might be mediated or/and moderated by a variety of factors (Buch, Dysvik, Kuvaas & Nerstad, 2015; Jung & Takeuchi, 2012). This argument can be supported by the fact that today's working environment (with increasing task complexity, stress and workload) creates additional challenges for employees to engage in KSB, which requires them to devote their own energy, time and other scarce resources; it demands that they demonstrate sufficient psychological strength to engage in such voluntary behavior as knowledge sharing (Huang & Luthans, 2015). Consequently, individuals' psychological resources (e.g., psychological capital) may play a crucial role in understanding KSB. Also, these findings can be supported by the argument that PsyCap is a personal resource that enables individuals to respond positively to challenges they face at work (Luthans et al., 2015). Taking this into account, the current study considers PsyCap as a mediating variable via which PIED might influence KSB.

Given the complex nature of KSB, the literature review has highlighted that the human resource development (HRD) practices (e.g., PIED) that link psychological

capital and desired employee behaviors (e.g., KS) are contingent on some moderating factors. Past studies which have examined HRM – employee outcomes relationship have mainly built on the theory of social exchange. This theory postulates that people tend to reciprocate to the favorable treatment with positive attitudes and behaviors (Blau, 1964). However, more recent research shows that organizational members may not follow the norm of reciprocity in the straightforward way, due to that fact that it is more complex process than it was originally assumed to be (Trybou, Gemmel, Pauwels, Henninck & Clays, 2014). More specifically, the sense of 'belongingness' are appear to have significant effect on how employees perceive and react to HRM practices and could be an important concept to understand reciprocity dynamic (Riketta, 2005). The organizational identification (OID) appears to be a key term in the organizational behavior (OB) and HRM literature that has attracted growing research interest. One of the reasons for this is that personal identification with one's organization is regarded as an important psychological state that can influence link, or bond, between employees and their companies. Therefore, OID has the capability to explain pro-organizational attitudes and behaviors (e.g.,KSB) (Suk Lee, Park & Koo, 2015). In addition, OID as a feeling of psychological inclusion to a specific company (Mael & Ashforth, 1992) has a potential to buffer negative effects of "knowledge hostile" environment of post-Soviet Kazakhstani context. Taking all of the above arguments into account, it seems reasonable to examine the moderating role of OID in the path between PIED, PsyCap and employees' KSB.

On the whole, this work examines combined or joint effect of PIED and PsyCap on employees' KS behavior. Furthermore, the research attempts to understand how the organizational identity moderates the influence of these factors. In sum, this research work provides a broader view of how these factors interact and affect individuals' KSB.

1.2.1. Research Gaps

An extensive survey of existing works has revealed several gaps in the current literature. Summary of those research gaps are presented in the following sections.

Numerous empirical works have identified various factors that directly or indirectly affect KSB, showing the complex, multidimensional nature of this behavior (Amayah, 2013; Tangaraja, Mohd Rasdi, Ismail, Abu Samah & Chase, 2015; Tohidinia & Mosakhani, 2010; Witherspoon, Bergner, Cockrell & Stone, 2013). More recently, organizational factors have attracted increasing attention because of their potential to influence employees' KSB. More specifically, such organizational factors as human resource management (Benson et al., 2004; Minbaeva, Mäkelä & Rabbiosi, 2012), reward system (Lee & Ahn, 2007), management support (Lin, 2006), organizational structure (Willem & Buelens, 2009), information system (Hislop et al., 2018), knowledge governance mechanisms (Foss et al., 2010) and more have received more research attention. In addition, different human resource development practices (e.g., PIED) are able to influence individuals' KSB (Rahman, Haski-Leventhal, Pournader, & Rendtorff, 2016).

However, more recent research has revealed that HRD practices (e.g., PIED) cannot sufficiently explain KSB unless they are translated into some other variables. Some authors have examined several indirect paths between different HRD practices (e.g., PIED) and KSB via variables such as autonomous motivation (Gagné, 2009), cooperation (Jiang & Liu, 2015), absorptive capacity (Minbaeva et al., 2013), employees' abilities (Ożgo & Brewster, 2015) and interpersonal relations (Kaše, Paauwe & Zupan, 2009).

In the last few decades, psychological factors have received increasing research attention in different disciplines for their potential to influence KSB. Psychological factors include intrinsic motivation (Lin, 2007), self-efficacy (Hsu, Ju, Yen & Chang,

2007), personality traits (Matzler, Renzl, Müller, Herting & Mooradian, 2008), psychological ownership (Tzu-Shian, Hsu-Hsin & Aihwa, 2010), intellectual capital (Radaelli, Mura, Spiller & Lettieri, 2011) and more. Recently, scholars have started to examine the role of positive psychological capacities in such fields as HRD and OB. Particularly, the concept of psychological capital (PsyCap) has attracted attention, due to its capability to produce positive individual outcomes (Avey, Reichard, Luthans & Mhatre, 2011; Luthans, Youssef & Avolio, 2015, Alessandri et al, 2018).

PsyCap is a construct that incorporates positive psychological capacities such as self-efficacy, and three other concepts. PsyCap is intended to supplement the existing concepts such as social or human capital. Moreover, a distinguishing feature of this concept is the manageability or changeability of it (Luthans, Youssef & Avolio, 2007). Relying on this feature, a bundle of studies have begun to examine various antecedents of PsyCap. For example, past studies have identified that various HR systems such as high-performance work system (Miao, Zhou, Xie & Wang, 2014), learning climate (Heled, Somech & Waters, 2015), high-performance work practices (Sarikwal & Gupta, 2014) and HR flexibility (Wojtczuk & Turek, 2015) play a significant role in predicting employees' PsyCap. However, further research is needed to improve our limited knowledge about the antecedents of PsyCap (Avey, 2014). It should be noted also that despite the value of this concept, it has been ignored in HRM research; as promising predictors of PsyCap, perhaps HRD practices should receive more research attention (Luthans et al., 2015).

Past studies have explored different determinants and consequences of PsyCap (Luthans et al., 2015). However, there is still a clear need to conduct further examination of organizational factors which may affect PsyCap and which lead to positive individual outcomes (e.g., KSB). Recent conceptual-review papers show specifically that there is a lack of studies treating HRD practices as antecedents of

PsyCap and KSB as an outcome of PsyCap (Luthans & Youssef, 2017; Newman, Ucbasaran, Zhu & Hirst, 2014). Overall, it can be concluded that existing literature overlooked the mediating effect of PsyCap on the association between HRD practices and KSB. Drawing on these arguments, new and current research proposes PsyCap as a variable, which may mediate the relationship between PIED and KSB.

While previous research investigated the mediating effect of PsyCap on the path between organizational practices (e.g., PIED) and pro-organizational behaviors such as KSB (Newman et al., 2014), recent conceptual-review studies have reported that there is a lack of studies analyzing these relationships from a contingency perspective (Luthans et al., 2015; Luthans & Youssef, 2017). Namely, a perspective, that focuses on those variables that can moderate the links between organizational practices (e.g., PIED), PsyCap and desired employee behaviors (e.g., KSB). This gap in the literature can be explained by the fact that available evidence provides inconsistent relationships between PsyCap and pro-organizations behaviors (Newman et al., 2014). In addition, the relations between PsyCap and its antecedents and outcomes are still not well understood (Luthans et al., 2015). Therefore, a complete understanding of the antecedents/ consequences of PsyCap requires that scholars identify potential moderators of these relationships. This research has tried to solve these limitations by considering OID as a potential moderator in these relationships.

Apart from the arguments discussed above, the selection of OID was relied on the following arguments. First, a theoretical perspective was taken into account. Past studies have revealed that social exchange and social identity theories are most frequently used when trying to understand the psychological relationship between employees and their organizations (Shore, Coyle-Shapiro & Tetrick, 2012). Despite the fact that these theories have been widely applied in isolation from each other, recently several researchers have suggested integrating these theories to better understand employer-

employee link in various organizations (Avanzi, Fraccaroli, Sarchielli, Ullrich & Van Dick, 2014; Tavares, van Knippenberg & van Dick, 2016). Second, the selection of the OID was based on the evidence that it became a 'root' variable in HRM research (Humberd & Rouse, 2016). More specifically, Norman, Avey, Nimnicht & Pigeon, (2010) have utilized OID to get broader understanding of positive organizational behavior from a contingency view. Hence, it seems rational to examine the moderating role of this variable in the aforementioned links.

1.3. Research Questions

First goal of this dissertation work is to investigate the link between PIED and KSB through the mediating role of PsyCap. Next aim is to determine the moderating effect of organizational identification in the links between PIED and PsyCap and between PsyCap and individuals' KSB. Overall, the research questions of this work are related to the complex relationship between investment in staff development, psychological capital, OID and employees' KSB, all within the context of Kazakhstani organizations. More specifically, the following questions are posed:

RQ1: What is the relationship between PIED and KSB?

RQ2: Does PsyCap mediate the link between PIED and KSB?

RQ3: How will OID moderate the relation between PsyCap and KSB?

RQ4: How will OID moderate the relation between PIED and PsyCap?

1.4. Research Objectives

The general and specific objectives of this work have been generated based on the formation of the abovementioned problem statement and research questions. The research objectives of this work are outlined below.

RO1: To investigate the relationship between PIED and KSB

RO2: To determine the meditating role of PsyCap between PIED and KSB

RO3: To examine how OID can moderate the influence of PsyCap on KSB

RO4: To assess how OID can moderate the influence of PIED on PsyCap

1.5. Significance of the research

The theoretical framework has been designed to evaluate the combined impact of organizational factors/practices (PIED) and individual factors (PsyCap and OID) on individuals' KSB in a Kazakhstani post-Soviet organizational context. Outcomes of the current study are concerned mainly with those KS behaviors that have an effect on KSB behavior, through the mediating role of PsyCap. The findings also make theoretical, methodological and practical implications for HR professionals. Researchers and HR professionals can implement these outcomes to promote KSB more effectively.

1.6. Scope of the Study

The design of the study focuses on the process of examining whether a link exists between predetermined variables such as dependent, independent, mediating and moderating. The independent variable is perceived investment in staff development; the dependent variable, KSB. The framework includes the mediating variable of PsyCap and the moderating variable of OID. The focus rests on examining organizational and psychological factors that interactively affect employees' KSB in Kazakhstani organizations.

Our target population was composed from organizational members from large-scale firms working in different sectors of Kazakhstan's economy. Therefore, the research findings and conclusions are, to some extent, generalizable to all private organizations in aforementioned country. The full list of the firms was taken from Business Journal, a

professional magazine that yearly made ranks of 'Top 300' firms of Kazakhstan based on their market capitalization or revenue. Chosen business enterprises represented a wide range of sectors and were located in three-biggest cities of Kazakhstan to avoid selection biases.

Around 300 of those companies were contacted for data collection purposes and the respondents were employees. Although there is a common consent between researchers that self-administered surveys do not produce a high response rate, the response rate in this study was relatively high due to the anonymity and confidentiality that the participants were guaranteed. Moreover, they were reminded by telephone calls and follow-up emails.

The pilot study was performed from September 2015 until November 2015. The main research began at the beginning of January 2016 with the distribution of an electronic copy of the survey via email to 900 participants in different organizations located in three main cities in Kazakhstan. Overall, it took around six months to collect the necessary data.

1.7. Organization of the Thesis

This thesis is divided into six chapters.

Chapter 1: discusses the background of the study, problem statement, gap in the literature, research questions/objectives and the significance and scope of the study.

Chapter 2: reviews the literature and explores the variables involved in this research. Chapter 2 starts with the key definitions: knowledge, data and knowledge management and knowledge sharing followed by an explication of the focal construct and other

constructs. It examines underpinning theories and identifies psychological and organizational antecedents of KSB; reviews the major theories explaining KSB; and discusses research framework and hypothesis development. Finally, the chapter presents critical discussion of the literature and presentation of the evidence of the existence of a knowledge gap in this field.

Chapter 3: addresses the research methodology. The chapter begins by clarifying research design and process and then discusses research approach, research strategy and research method. The chapter also presents the data analysis techniques for quantitative research and the Partial Least Squares (PLS) for testing the hypotheses and model fit are discussed.

Chapter 4: provides the analysis of the data and results. Initially, we outlined the demographic analysis of respondents. The data analysis was carried out by using PLS, including the relevant tests for the data. Measurement and structural models were used to analyze data of this work.

Chapter 5: reports key results of this empirical research. The outcomes are compared with the past works. The managerial/theoretical contributions are offered and several limitations of the current work are discussed. Finally, some recommendations for future studies were proposed.

CHAPTER 2. LITERATURE REVIEW

2.1. Introduction

The goal of this part is to form systematic review of the literature related to the study variables. Specifically, the chapter explores how perceived investment in staff development, psychological capital (PsyCap), and organizational identification (OID) can contribute to knowledge sharing behavior (KSB). A comprehensive examination of the literature helps to identify research gaps.

The literature review begins with a general overview of such concepts as knowledge, knowledge management (KM), KSB and predictors of KSB. Then follow critical examinations of different well-established theories and views, in order to identify relevant facilitators of KSB. In addition, this part presents the theoretical approaches that lie under the hypotheses of this study. The structure of the last section is as follows: the first part consists of the development of the conceptual framework; the second part includes the discussion of research hypotheses and research model; and finally, a chapter summary is provided.

2.2. Knowledge

2.2.1. Understanding the Term

Knowledge is a comprehensive term which has various definitions and therefore is a controversial concept (Nonaka & Von Krogh, 2009) of which there is no universally recognized definition (Alfeis & Van der Spek, 2002). The significance of this concept has been recognized for centuries; however, the systematic study of knowledge as a discipline began to emerge during the 1990s. The increasing importance of this complex concept is obvious, as the prosperity of any company depends on its human and intellectual capital. Knowledge is widely considered as an essential resource, since it

contributes to the grasping and retaining competitive advantage (Ahmad, Bosua & Scheepers, 2014).

It is argued that knowledge within organization is not only captured in the form of documentations or some forms of papers but also in minds of individuals (Nonaka & Konno, 1998). Consequently, some scholars define knowledge as something which is entirely human (Galliers & Newell, 2003). Other researchers define knowledge as 'a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information' (Davenport & Prusak, 1998, p. 5). The same authors also argued that the concept both originates and is applied in the mind of the knower. Also, it should be noted that, in companies, it build into organizational routines, processes and cultures as well as repositories. Consequently, it is important to explore this concept and its taxonomies.

2.3. Knowledge, Data and Information

Initially, it is important to differentiate between such concepts as knowledge, data and information. The attempt to differentiate is justified by the fact that these terms are often used interchangeably and their definitions differ from author to author. Some commonly accepted definitions are: data is simply numbers and facts without processing; information is processed data; and knowledge is authenticated information (Maglitta, 1995; Nonaka, Byosiere, Borucki & Konno, 1994). A classical definition of data, information and knowledge is provided by Ackoff (2010) below.

Table 2.1: Ackoff's definitions of data, information and knowledge

Category	Definition
Data	Symbols
Information	Data that are processed to be useful, providing answers to 'who', 'what', 'where', and 'when' questions
Knowledge	Application of data and information, providing answers to 'how' questions

Ackoff et al (2019) argued that the contents of the human mind can be divided into following categories:

- Data – Symbols used out of context and are without meaning
- Information – Data which has some meaning
- Knowledge – One or more pieces of information that in aggregate have some value

It is significant to point out that differentiation between information and knowledge is often not clear. Such notable scholars as Alavi & Leidner (2001) have claimed that the answer may lie in the similarities between these terms. On another hand, the difference between knowledge and information is still open for refinement and discussion. More specifically, it has been asserted that all information can be considered as knowledge, but not all knowledge can be considered as information (Bourdieu et al., 1980). Particularly in Information System (IS) studies, scholars have been using the term 'knowledge' to recognize the value and significance of knowledge management systems in comparison with conventional IS (Alavi & Leidner, 2001). At the same time, other KM researchers use the two terms as synonyms and argue that information and knowledge are not radically different (Bartol & Srivastava, 2002; Wang & Noe, 2010).

2.4. Types of Knowledge

Organizational knowledge is possessed in the minds of many people and is developed through personal experience, interpretation and interaction. Past research has explored different types of knowledge. Polanyi (1962) has divided organizational knowledge into two: explicit and tacit. The first one is expressed in formal language, such as mathematical terms and statements in the text, and it can be stored in database that allows it to be smoothly moved within the firm (Nonaka, 1991). Take for example the most important source of corporate information: a firm's annual report. The second one is included in documents, publications, etc. 'Tacit' knowledge is mainly personal, not easily codified or transferred and not easy shared with others (Nonaka, 1994; Polanyi, 1967). Tacit knowledge is not only rooted in people's everyday practices and expertise but it also resides in person's minds, behavior and perceptions (Duffy, 2000). It should be also noted that this type of knowledge is gained through experience in a specific context and can be transferred and demonstrated by observing. Other authors argued that tacit knowledge can't be expressed in words, sentences, formulas or in any tangible forms (Patel, Arocha, & Kaufman, 1999).

Initially, the concept of tacit knowledge was not a different type of knowledge – rather it was considered an integral part of all knowing (Polanyi, 1967). However, some studies criticize Polanyi's views by asserting that tacit and explicit knowledge are two different types of knowledge (Tsoukas et al., 2017). Taking Polanyi's ideas as basis, Tsoukas (1996) asserted that these two types of knowledge are mutually constituted and therefore, they may not be treated as two distinct forms of knowledge. At this point in research, it can be pointed out that both types of knowledge are complementary and vital for creation of new knowledge. The construction of new knowledge happens through a continuous process of interaction between the two types (Nonaka, 1994).

Therefore, knowledge transfer (both tacit and explicit) is essential for creation of new knowledge.

The Nonaka & Takeuchi (1995, 2018) model named as SECI is one of the most valuable models representing the dialectical relationship between the aforementioned types of knowledge. This model consists of four phases of knowledge conversion (socialization, externalization, combination and internalization) and provides relationship between the two types of knowledge. In socialization, knowledge is transferred into tacit form through social interaction in the work environment. In externalization, tacit knowledge is converted into explicit form codified in a knowledge representation. In combination, explicit knowledge is transferred into a more comprehensive set of explicit knowledge. Finally, in internalization, explicit knowledge is converted into organizational tacit knowledge through learning by doing. Knowledge is critically important to an organization when employees share it through socialization, combination, externalization and internalization. Therefore, both explicit and tacit knowledge should be taken into account to establish effective KM system (Edwards, 2009).

2.5. The Concept of Knowledge Management

One of the vital conditions facilitating the rise of KM is a global change from labor-based to knowledge-based systems where knowledge is recognized as the key economic asset (Drucker & Drucker, 1993). We are moving to a future where knowledge will become the fundamental resource of production while sidelining capital and labor. Following this trend, many organizations have started to recognize that their competitive advantage is mainly dependent upon the intellectual capital of their employees and their capability to manage it (Liebowitz, 1999). Since knowledge is an essential resource for gaining and retaining a competitive edge (Bock & Kim, 2002;

Grant, 1996), the concept of KM was established to assist organizations develop, share, and utilize knowledge in a more efficient way (Davenport & Prusak, 1998).

This system become increasingly important in business due to the potential benefits it can bring to individuals and organizations (Dalkir & Liebowitz, 2011). KM benefits individuals by assisting them in their work performance and saving their time by enhancing decision-making processes and problem-solving capabilities. It helps organization members develop a sense of community bond within their organizations and assists individuals in keeping up to date with their teams. KM can also add value to entire organizations: driving strategy, solving problems quickly, spreading the best practices, fostering opportunity for innovations and enabling the organization to remain at the competitive edge (Dalkir & Liebowitz, 2011).

KM is a relatively new field of study arisen in the early 1990s. The main ideas of KM have been developed based on concepts borrowed from other disciplines, such as organizational behavior and information technology. There is no shortage of definitions of the term 'knowledge management'. For example, according to Holsapple and Joshi (2004), KM refers to a systematic and purposeful effort of companies to widen, develop and use existing knowledge in ways that give value to a company. Another definition of KM was proposed by O'Dell and Hubert (2011) as a bundle of approaches that allow knowledge to develop, transfer, and add value. In other words, KM includes attempts to integrate the right knowledge with right person, right time and right format (Nonaka, 1991). A more precise or clear definition of this concept was provided by Davenport and Prusak (1998): organizational practices that promote the generation transfer and use of knowledge.

On the another hand, according to current literature on this topic, there is a broader list of processes that can be included in KM, such as knowledge identification, knowledge acquiring, knowledge creation, knowledge sharing/transfer and distribution,

knowledge usage and keeping knowledge. In sum, almost every definition of KM entails such knowledge processes as acquisition, creation, sharing, and application.

Along with these studies, which mentioned that the KS process is a part of KM, several authors asserted that KS is nothing less than a primary component of KM systems (Alavi & Leidner, 2001). It might be explained by the logic that the potential value of acquiring and storing knowledge is realized when it is shared and used. Likewise, KS has the potential to influence the level of knowledge generation (Ipe, 2003).

2.6. Knowledge Sharing Behavior

Knowledge has been seen as a source of competitive advantage for people who possess it. Some individuals see sharing their expertise or information with others as lose of their competitive advantages or credibility in the firm. Therefore, individuals are usually hesitate to share their knowledge with others. This attitude stands in contrast with other views on the topic that suggest that the usefulness of knowledge increases when it is shared rather than hoarded (Styhre, 2002).

The literature review confirms that there is no universal definition of the KS, considering the variety of scholarly perspectives. For instance, Van den Hooff and De Ridder (2004) describe KS as a social situations in which people reciprocally exchange their knowledge or expertise and together develop new knowledge. In this vein, other authors view KS as the action in which organization members spread their knowledge or expertise to others across the organization (Bartol & Srivastava, 2002); as a result of this process, individual knowledge is transformed into organizational knowledge. Other scholars define KS more succinctly as the transfer of both explicit and implicit knowledge between individuals (Foss et al., 2010).

Past studies has see KS a social events in which at least two person must be involved. Based on this approach, the notable scholars have distinguished KS as a social process that includes exchange of knowledge between organizational members and group members (Davenport and Prusak, 1998). Consequently, it can be assumed that this behavior can be explained by the desire of people to share their knowledge when somebody request it (Nonaka, 1995).

2.7. Importance of Knowledge Sharing Behavior

Recently, the notion of KS has attracted the interest of organizations as they see knowledge as their vital source of competitive power. Past research has revealed that it may bring a lot of advantages for employers and employees as well. For example, at the individual level, prior studies have observed a significant effect that KSB has on employees' work performance (Henttonen et al., 2016). At the organizational level, if KS is managed in a correct way, it can affect firm-level innovation performance (Ritala, Olander, Michailova & Husted, 2014). At the group level, this process can influence team effectiveness as well (Pangil & Moi, 2014). By the same token, KS has been observed to be related with a several workplace outcomes such as improved productivity (Noaman & Fouad, 2014), individuals' innovative behavior (Kim & Lee, 2013) and more. It may also positively influence decreasing production costs, revenue growth, and workforce performance and innovation capability (Hansen, 2002), as well as operational performance (Wang, Wang, & Liang, 2014). In addition, this pro-social behavior may improve such workplace outcomes as work performance and satisfaction with work (Tong, Tak, & Wong, 2015), hence boost firm competitive power (Yun & Lee, 2017). However, it is important to point out that there is an ongoing debate on whether KS in any given situation will bring real, tangible results (Marleen & Dirk De, 2002).

2.8. Distinction between Knowledge Sharing and Knowledge Transfer

An increasing amount of research has targeted the concept of KSB from different perspectives and under different terminologies (Wang & Noe, 2010). In these contexts, several scholars view KS as knowledge transfer (Levin & Cross, 2004; Mowery, Oxley, & Silverman, 1996), knowledge flows (Hislop et al., 2018; Mudambi & Navarra, 2004) and knowledge diffusion (Szulanski, 2000). Some researchers have tried to find a real distinction between KS and knowledge transfer – it can be said that KS is social processes, which involve at least two actors and multiple directionality without a particular goal, while knowledge transfer means focus, precise goals and unidirectionality (Argote, Ingram, Levine, & Moreland, 2000; Rhodes, Lok, Hung, & Fang, 2008). Also, one might claim that knowledge transfer typically refers to the flow of knowledge between different units, departments, or companies rather than individuals (Wang & Noe, 2010). On the other hand, KS is more than simple exchange of knowledge or information; rather, it is a process of giving and receiving knowledge, expertise and feedback (Cummings, 2004). More recent studies revealed that KS is a social activity where people may exchange their knowledge or expertise through discussions to develop new knowledge (Abdullah, Hassim, & Chik, 2009). Van den Hooff and de Leeuw van Weenen (2004) assert that KS includes collecting, organizing, and discussing knowledge between people, during which process the value of knowledge is increased while it is shared.

2.9. Theories related to Knowledge Sharing Behavior

This part presents the key theories which explain individuals' KSB. These theories should be discussed in details because each predicts the others' performance effects. Several theories will be discussed in the following subsections.

2.9.1. Theory of Reasoned Action

One theory that has been widely utilized to explain factors that affect KSB is the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980). It mainly posits that people's intention to act in a particular way is a function of an individual's attitude toward the performance of the behavior and the individual's subjective norms (see Figure 2.1). More specifically, TRA assumes that actual behavior can be predicted by attitudes, beliefs, norms and behavioral intentions.

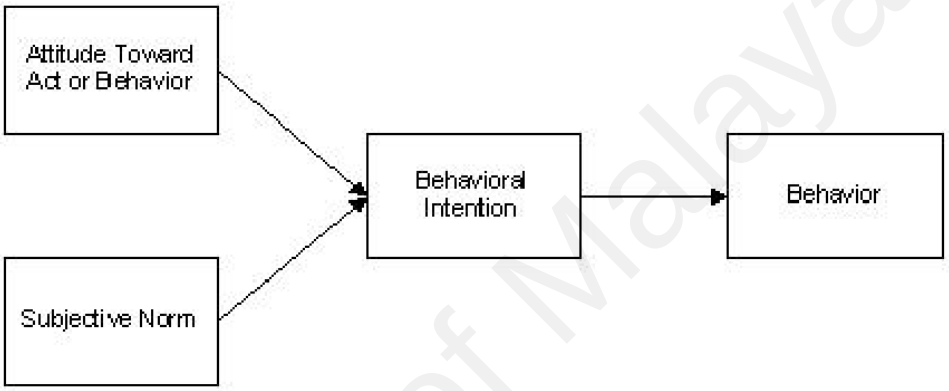

Figure 2.1: Theory of Reasoned Action

Source: Ajzen and Fishbein (1980)

In Figure 2.1 it can be observed that intentional behavior is affected by both peoples' attitudes towards performing the action, and by what other individuals will think (social norms) if individuals perform this action. TRA has proven to be very successful in predicting and explaining a number of behavioral outcomes. Consequently, it has been widely used to examine individuals' behavioral intention and their actual behavior. Some scholars employed TRA to predict KS intention (Bock & Kim, 2002). They drew upon TRA and linked it with external motivators, social-psychological factors, and organizational climate to formulate an integrative model of factors that have impact on KS intentions. Other research based on TRA constructed a theoretical model to explain KS intention. The results revealed that the anticipated reciprocal relationships,

perception of ethics and organizational culture collaboratively influence intention to share knowledge (Tsai, Chen, & Chien, 2012).

However, TRA is not without its critics. One of the limitations of this theory is correspondence between measurements (Ajzen, 1985). In order to predict a particular individual's behavior, measures of attitudes and behavior must match one another. Other weaknesses of this theory derive from its assumption that peoples' behavior is under a cognitive control. In other words, TRA can only predict behaviors that are consciously and rationally executed; however, behaviors that are performed not consciously (e.g., non-rational and habitual actions) cannot be explained by this theory (Ajzen, 1985). Specifically, it assumes that people will adopt a behavior only if they have the intention to do so, and that they will not perform a behavior if it is not voluntary or within their own control.

2.9.2. Theory of Planned Behavior

Desiring to enhance the power of prediction of TRA, Ajzen (1985) extended it by including individuals' perception of intrinsic and extrinsic restrictions on actual behavior. In other words, this extension involved adding one major predictor to the model, which was then called 'perceived behavioral control'. This revised model is named as the theory of planned behavior (TPB).

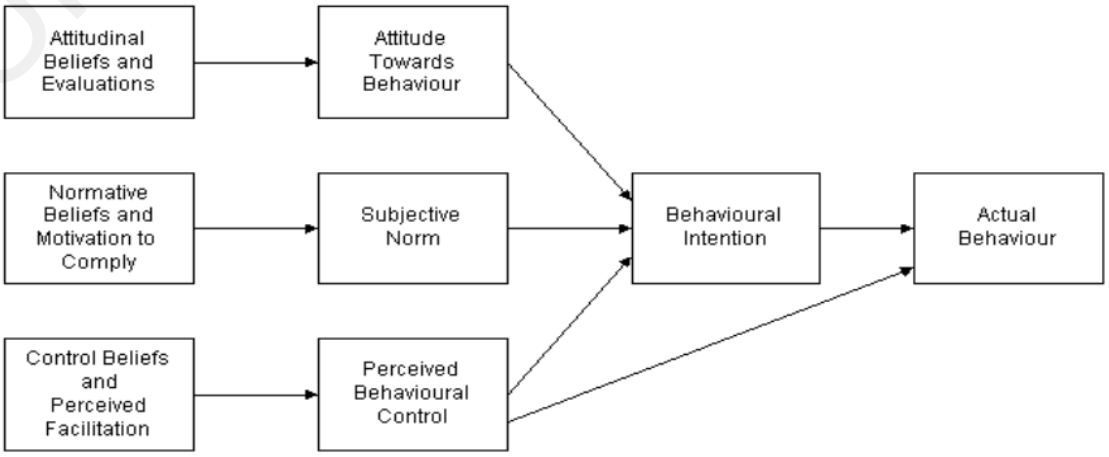

Figure 2.2: Theory of Planned Behavior

Figure 2.2 suggests that people's behavior can be explained by behavioral intention. This behavioral intention is in turn influenced by perceived behavioral control (control beliefs and perceived facilitation), subjective norms (normative beliefs and motivation to comply) and attitudes towards behavior (attitudinal beliefs and evaluations). Perceived behavioral control as a new factor is assumed to influence actual behavior in a direct manner. Indeed, perceived behavioral control indicates a person's perceived ease or difficulty of conducting the specific behavior. TPB is based on the notion that behavior is controlled to a greater or lesser degree by the availability of resources and the existence of outside restrictions. Consequently, people's perceptions of the resources or opportunities available to them are necessary for performing a specific behavior (Madden, Ellen & Ajzen, 1992).

The aforementioned theory is one of widely utilized to predict individuals' attitudes or beliefs toward behaviors. Past research has shown that TPB have a high explanatory power to predict behaviors of people (Armitage & Conner, 2001; Hagger, Chatzisarantis & Biddle, 2002). Similarly, several scholars have revealed that this theory has high capability explain KS intention. Particularly, subjective norm has an ability to affect intention to KS through attitude towards KS and perceived behavioral control (Ryu, Ho & Han, 2003). Similarly, other research has explored the factors that influence encouragement of KS intention and behavior by senior staff members (Lin & Lee, 2004).

As with all perspectives, TPB is not without its limitations. For example, the TPB model requires a person to be motivated in order to execute a certain behavior. While this may be a limitation, Taylor and Todd (1995) claimed that when we want to examine technology adoption behavior, for example, it is desirable to for a study to be limited by the environment. The same authors claimed that the TPB model has added only perceived behavioral control to answer all non-controllable aspects of human behavior.

Other studies of this theory have reported no predictive role of perceived behavioral control (Ogden, 2003). However, the initial author of this theory has addressed this criticism by presenting strong arguments that these constructs can easily vary based on the situation, population and behavior (Ajzen & Fishbein, 2004).

2.9.3. Social Exchange Theory

The Social Exchange Theory (SET) is well-recognized theory to predict behavior of individuals (Settoon et al., 1996). The basic concept of SET has been derived from such social science fields as anthropology (Sahlins, 1972), applied psychology (Gouldner, 1960) and overall sociology (Blau, 1964). There are number of views on social exchange. However, great numbers of scholars agree with the view that social exchange involves a series of interactions which further develops some obligations (Cropanzano & Mitchell, 2005; Emerson, 1976). In addition, SET also claims that these reciprocal transactions with the capability to 'create high quality relationships' (Cropanzano & Mitchell, 2005, p. 875). According to Blau, this theory refers to the not obligatory actions of people that are encouraged by the 'returns they are expected to bring and typically do in fact bring from others' (1964, p. 91). Namely, SET relied on premise that gesture of goodwill will be paid back at some future time (Settoon et al., 1996).

SET was initially proposed to predict the establishment and support of interpersonal relationships. Afterwards, SET has been used to examine workplace relationships or employment relationships (Hom et al., 2009; Lynn, Shore & Barksdale, 1998). A number of social science scholars are concerned with differences in the parties engaged in the relationship. The main assumption is that employees can develop social exchange relationships with their supervisors (Liden, Sparrowe, & Wayne, 1997), co-workers (Golden & Veiga, 2015) and organizations (Wayne, Shore, & Liden, 1997). These social exchange relationships have important implications for employees' behavior.

More specifically, in the organizational settings, the perspective of exchange relationship was discussed via inducement-contribution of employees and employers relations (March & Simon, 1958). The idea of this model is that employees reciprocate the favorable treatment they receive from their company. Furthermore, this perspective regards the organization-employee relationship as a combination of social and economic exchange (Aryee, Budhwar & Chen, 2002; Cropanzano, Rupp & Byrne, 2003). More specifically, economic exchange relationships include the exchange of economic resources such as rewards (e.g., salary, etc.), in return for employees' efforts and are usually based on written agreements which are legally binding. From another perspective, social exchange is the form of employer-employee relationship, which may be initiated by an organization's good treatment of its members, anticipating that these actions would be reciprocated, respectively. Compared to economic exchange, social exchange does not require any regulations or formal mechanisms that govern these interactions (Blau, 1964; Gould-Williams & Davies, 2005).

The exchange approach posits that people tend to involve in pro-organizational behaviors when they see favorable treatment from their employers. In another words, from the aforementioned relation perspective, employees are more willing to reciprocate favorable treatment they received with the pro-organizational behaviors (Aryee et al., 2002). For example, several studies have shown the positive association between organization members' perceptions of their workplace conditions and desired workplace attitudes such as organization citizenship behavior, workplace commitment and work satisfaction (Crede, Chernyshenko, Stark, Dalal & Bashshur, 2007; Cropanzano et al., 2003). Similarly, other research has used SET to understand the relations between external/internal factors and KSB (Yan, Wang, Chen & Zhang, 2016). On the other hand, employees reciprocate unfavorable treatment by engaging in harmful or

counterproductive work behaviors, such as absenteeism, lateness and turnover (Crede et al., 2007; Haar, 2006; Mount, Ilies & Johnson, 2006).

This basic tenet of SET is named as the reciprocity norm. The main principle of this norm is based on the two main assumptions which are: (1) help me and I will help you and more different one is (2) I will not hurt or harm you, if you help me (Gouldner, 1960). Several well-known researchers have proposed that this norm be viewed as a moral obligation that is internalized by both employer and employees. Namely, whoever receives a favor, feels obligated to reciprocate (Gouldner, 1960; Liden, Wayne, Kraimer & Sparrowe, 2003).

However, social exchange theory is not without its critics. SET has been criticized by several scholars for its inability to elucidate the processes of relationship dissolution (Dwyer, Schurr & Oh, 1987). Also, Meglino & Korsgaard, (2004) have criticized the theory for its reliance on the postulate of solely cost-benefit approach and asserted that peoples' perception of favorable treatment not only produces a felt obligation to help their company, but also serves as a critical aspect of socio-emotional process (Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002). Perhaps additional theories should be integrated into SET to better understand employee-organization relationships.

2.9.4. Social Identity Theory

The Social identity Theory (SIT) is one of the most prominent approaches of social psychology of intergroup relations, according to Abrams & Hogg (2006). The same authors further argued that SIT provides a broader evaluation of group processes, relations within groups, and the self-concept. In the past decades, SIT has been used to study a number of phenomena, from prejudice and discrimination to group cohesiveness (Hogg, 2006). This theory was first developed by British social scholars Henri Tajfel

and his colleagues at the end of 1960s and the beginning of 1970s. SIT is a social-psychological framework that emerged from a number of laboratory studies performed by Tajfel and his colleagues (Brown, 1978; Tajfel, Billig, Bundy & Flament, 1971). The aim of their work was to find out some terms that might lead team members to discriminate in favor of the in-group to which they were assigned (Tajfel et al., 1971). The findings of this experiment showed that only assigning people to a different groups is more than enough to induce favoritism to the in-group and discrimination against an out-group. For instance, it was identified that in-group members distributed more money to in-group members than members from outside the group. Overall, people tended to be concerned more about their group's interests rather than other groups in order to maximize personal gain.

The Haslam (2004) has noted that the core idea behind SIT is that people strive for membership in a group that positively contributes to their self-esteem. In accordance to Henri Tajfel, recognizing oneself as a member of a group is enough to induce behavior that favors one's own group (Tajfel, 1978). In this way, SIT entails a certain process of depersonalization whereby individuals come to see themselves more as the group member of some sort of social class, rather than unique individuals (Roccas & Brewer, 2002). Namely, people tend to identify themselves as not only individuals (i.e., 'I' or 'me') but also according to their psychological attachment to a collective entity (i.e., 'we' or 'us').

Thus, they may be prone to compromise their personal interest for the sake of their group's welfare. To gain positive self-esteem, people tend to view their group (i.e., 'we' or 'us') as different to other groups (i.e., 'them') (Haslam, 2004). As a result, social identity will motivate individuals to attain their group's goals because they see the goals of the group as their own. Drawing on SIT, it was anticipated that if the person has

positive feeling of identity with their group, he/she are more willing to work hard towards achievement of their group's goals (Tajfel, 1978).

Over the last few decades, various empirical studies have analyzed the effect of social identity on different work-related outcomes. For instance, several works have shown that social identities can reduce stress level (Haslam et al., 2005), lower level of job burnout (Haslam, Jetten & Waghorn, 2009), enhance group loyalty (Ellemers, Kortekaas & Ouwerkerk, 1999), and improve collective efficacy (Reicher & Haslam, 2006). Moreover, social identification significantly impact employees' satisfaction with their jobs (Johnson et al, 2006; Van Dick et al., 2004), job engagement (Anaza & Rutherford, 2012) and continuous improvement (Lee, 2004). Other works have found that social identity affects negative employee outcomes such as turnover intention (Van Dick et al., 2004) and cynicism (Ashforth and Humphrey, 1993). Social identification has also been shown to improve such prosocial behaviors as organization citizenship behavior (Van Der Vegt, Van De Vliert & Oosterhof, 2003; Van Dick, Grojean, Christ & Wieseke, 2006), helping behavior (Johnson, Massiah & Allan, 2013), voice behavior (Liu, Zhu & Yang, 2010) cooperative behavior (Tyler & Blader, 2001) and KS behavior (Kuo & Lin, 2012). Social identification may promote KSB, since identification acts as a resource, influencing the inclination to share or exchange knowledge (Nahapiet & Ghoshal, 1998). This argument can be supported by the findings of Tyler and Blader (2001), who found that group identity, enhances an individual's motivation to voluntarily cooperate with the groups to which they belong, and this requires KS among individuals.

Despite the important contribution of this theory, it has some limitations as well. Several researchers have criticized SIT for its assumption that people take over a social identity due to a desire to widen understanding of their attitudes and behaviors (Rabbie, Schot & Visser, 1989). The same researchers also noted that social identification is

more of a conscious instrumental process. Furthermore, they argued that perceived interdependence between group-members, as a result of experiencing common goals, is an important pre-term for the development of social groups, from which other processes may occur. For example, appearance of particular team values, 'interpersonal attraction, in-group and out-group differentiation' (Rabbie et al., 1989, p. 175) and team identification and common social identities.

2.9.5. Positive Psychology

Positive psychology is a discipline that seeks to elucidate positive subjective experience, positive personality traits, and positive institutions that has a potential to enhance life quality. The main aim of positive psychology is to develop organized systems that realize human potential (Seligman & Csikszentmihalyi, 2014). Since its conception the positive psychology view has increasingly attracted research attention for its ability in explain and predict individuals' attitudes, behaviors and performance (Snyder & Lopez, 2009). Particularly, positive emotions help people broaden their perspectives and let them find new solutions that lead to positive results. On the other side, negative emotions drive individuals to lower their expectations and narrow action tendencies that lead to negative results. For instance, some empirical research has indicated that positive emotions have a greater influence on employee-related outcomes (Fredrickson, 2017; Garland et al., 2010). Moreover, the importance of positive psychology has been supported by several studies for its critical role in developing individuals in different organizational contexts such as schools, hospitals and other work places (Huffman et al., 2014; Kaplan et al., 2014; Shoshani & Steinmetz, 2014).

Several paradigms have been developed over the past decades to extend our understanding of positive psychology including Positive Organizational Scholarship (POS) (Cameron & Dutton, 2003) and Positive Organizational Behavior (POB)

(Luthans, 2002). It should be noted that these approaches do not declare an entirely new concept regarding the importance of positivity; rather, they propose alternate perspectives on behavior in organizations (Avey, Luthans & Youssef, 2010). However, some scholars have criticized these approaches, claiming that they are simply a 'rebranding' of already-existing perspectives (Hackman, 2009). The critics of these paradigms also argue that such perspectives can be naive (Peterson, 1999). They have noted that extreme positivity in all aspect of life may bring to overconfidence, illusory optimism and wishful thinking between organizational members (Diener & Biswas, 2011). Consequently, these misperceptions could lead to not properly identifying intervention strategies, which may negatively affect organizational and employee-related outcomes even further. Despite these criticisms, however, these approaches have inspired scholars and practitioners to develop novel perspectives based on organizational interventions. These may include PsyCap interventions and appreciative inquiry interventions (Luthans et al., 2015; Whitney & Cooperrider, 2011). For this reasons, HR professionals may invest in and develop the employees' PsyCap, which in turn can affect a variety of performance outcomes.

This psychological concept mainly derived from the positive organizational behavior (POB) perspective (Luthans et al., 2007; Luthans et al., 2015; Peterson & Seligman, 2004). According to Luthans, the main role of POB is to emphasize on promoting positive psychological capacities that may improve individual performance (Luthans, et al., 2015). POB refers to the research and implication of positively oriented HR strengths and psychological resources (e.g., PsyCap) that can be evaluated, assessed and effectively managed to improve different workplace outcomes (Luthans et al., 2015). Thus, to be recognized as a POB, the variable or factor must meet several key conditions. These conditions are (1) supported by theory- and research, (2) measurable,

(3) specific to OB and (4) 'state-like' (contrary to more fixed or 'trait-like' and thus more open to change or improvement.

In past studies, the authors of POB have examined a bundle of different capacities that may potentially fulfill the POB definitional terms. Initially, subjective well-being (or happiness) was also considered fitting POB criteria. However, researchers expected to find capacities that would be entirely new to the Organizational Behavior (OB) discipline. In the end, only four dimensions were chosen, based on fitting the POB inclusion criteria: hope, confidence, optimism and resilience. These four positive states combined together form the core construct of PsyCap.

However, there are some criticisms of this construct. It is argued for the expansion of the PsyCap construct to include more variables that fit the criteria of being state-like, measureable and open to development. For example, the constructs that meet these criteria can be divided into the following categories: cognitive (creativity), affective (flow), social (gratitude), and higher-order strengths (authenticity) (Dawkins, Martin, Scott & Sanderson, 2013).

Lastly, it should be mentioned that a recent review-paper shows that this positive concept has gained interest from both researchers and HR practitioners for its capability to influence employees' performance and behaviors (Luthans & Youssef, 2017). In particular, researchers and practitioners have emphasized on the malleable components of PsyCap in the organizational settings and have tried to implement it to enhance work-related outcomes (e.g., KSB) (Newman et al., 2014).

2.10. Factors of Knowledge Sharing Behavior

Why do individuals share their knowledge with others? Or, conversely, why don't individuals share their knowledge? These are the two important questions to ask, because knowledge, and the crucial aspect of sharing it, is one of the most valuable

resources of organizations, as we have discussed (Ipe, 2003). There are various reasons as to why people do not share their knowledge with others, even when the benefits of doing so are obvious. The KS process takes time and often is considered from a loss-competitive position. In an organizational context, employees may receive insufficient support from management to implement their knowledge and expertise in the workplace (Jung Lee, Shiue & Chen, 2016). In short, the sharing of knowledge is a behavior that can be affected by a number of factors, and therefore, scholars have made efforts to identify the determinants of KSB through different perspectives.

Similarly, Von Krogh, Ichijo, and Nonaka (2000) have argued that KS can be facilitated by acting on particular contextual and organizational factors that may affect knowledge transfer. KS factors (or determinants) can be defined as the mechanism for promoting individual learning and KS within or across teams or work units. Moreover, a wide range of factors can influence the success of KM initiatives, i.e., an organization's ability to share knowledge (Pan & Scarbrough, 1998).

Based on the review of the past investigations, it was found that determinants of KS can be grouped into two categories: individual determinants (Riege, 2005; Wang & Noe, 2010) and organizational determinants (Connelly & Kelloway, 2003; Lin, Kwok, & Koch, 2006). The next sections review the literature on the two determinants of KSB.

2.11. The Individual Factors of KSB

Some researchers have asserted that KSB is individuals' sharing of information relevant to organization, ideas, recommendations and expertise with one another (K. Bartol & Srivastava, 2002). In line with this argument, it is also can be noted that knowledge does not exist without people. Therefore, sharing of this individually-held knowledge mainly depends on voluntary behavior and should be discussed from a human factor point of view. Psychological factors have been recognized as important

predictors of KSB (Cabrera, Collins & Salgado, 2006). A review of the psychological determinants of KSB follows in the section below.

Psychological factors of KSB

KS is a voluntary act; people may prefer not to share their knowledge, especially if they consider their personal knowledge valuable, useful and unique (Davenport & Prusak, 1998; Dixon, 2002). That is, they are not likely to share their knowledge unless they are intrinsically motivated to do so. Consequently, previous research has focused on psychological factors as powerful predictors of KSB. The psychological factors that might affect KS are discussed below.

(a) ***Personality Traits***

From the beginning of the 1990s, research in personality has emerged across various disciplines (Funder, 2001; Teng, Huang & Tsai, 2007). One of the most commonly used models that describe personality is the 'Five-Factor Model' or the 'Big Five' (Goldberg, 1990; McCrae & Costa, 1987). These traits are neuroticism, extraversion, agreeableness, openness to experience and conscientiousness. This Big Five model has been widely used in various research areas such as personnel psychology (Sheldon, Ryan, Rawsthorne & Ilardi, 1997), higher education (Busato, Prins, Elshout & Hamaker, 1998), organizational behavior (De Hoogh, Den Hartog & Koopman, 2005), human resource management (Lounsbury, Steel, Gibson & Drost, 2008) and more.

Neuroticism and extraversion are the two dimensions of personality which have received the most research attention (Canli et al., 2001; Watson, 2000). Despite the fact that all five dimensions are emphasized in general models of personality traits, causal theories emphasize neuroticism and extraversion in particular (Rogers & Revelle, 1998).

Far less research has been devoted to the dimensions of agreeableness and openness to experience.

During the last few decades, number of research has analyzed the link between personality traits and work-related outcomes (Judge et al., 2002; Ones, Dilchert, Viswesvaran & Judge, 2007). For example, Wang, Noe, and Wang (2011) discover a relationship between extraversion and overall KS. Other scholars also confirm the positive impact of personality variables (openness to experience, agreeableness and conscientiousness) on people's KSB (Cabrera et al., 2006).

Furthermore, it has been already proven that Big Five personality traits are stable over time (McCrae & Costa, 1994), situations (Fleeson, 2001), demographical differences (John & Srivastava, 1999) and across diverse cultures (McCrae & Costa, 1997). In addition, it has been argued by McCrae & Costa, (1999) that traits are structured from broader variables (e.g., Big Five) to narrower one (e.g., part of small constructs). Other authors have found that Big Five personality traits have been analyzed in a broad range of occupational groups (Barrick & Mount, 1991). All this evidence goes to suggest the strong reliability of the instrument.

However, in nowadays' competitive economy, which is characterized by high turnover rates and a focus on continuous improvement and learning, it is not cost effective for organizations to create a number of initiatives for facilitating character strengths, virtues, and other relatively stable personality traits. The importance of coming to the workplace already equipped with talents, strengths and personality traits as well as a relatively young age, has led such preparatory and nurturing efforts mainly to be shifted to educational institutions. Thereby, organizations only focus on personality traits in the process of recruitment, selection, and placement 'fit' initiatives (Luthans et al., 2007). The consistency of personality traits constrains their power in the organizational context. Despite the fact that stable traits are valuable to the organization,

the value of malleable states such as PsyCap has been somehow overlooked in the past. By focusing on states rather traits, POB proposed that PsyCap that have been apparently shown to be state-like, and thus are open to development.

As illustrated in Figure 2.3, PsyCap constructs are distinguished from pure traits which are relatively fixed and not easy to change (e.g., intelligence) (Schmidt & Hunter, 2000). Trait-like constructs are more stable across time, like the Big Five personality traits (Barrick & Mount, 1991) and Core Self Evaluation (Judge & Bono, 2001). Lastly, impure states, as opposed to pure traits, are not stable and are volatile and easily changeable (e.g., moods or emotions).

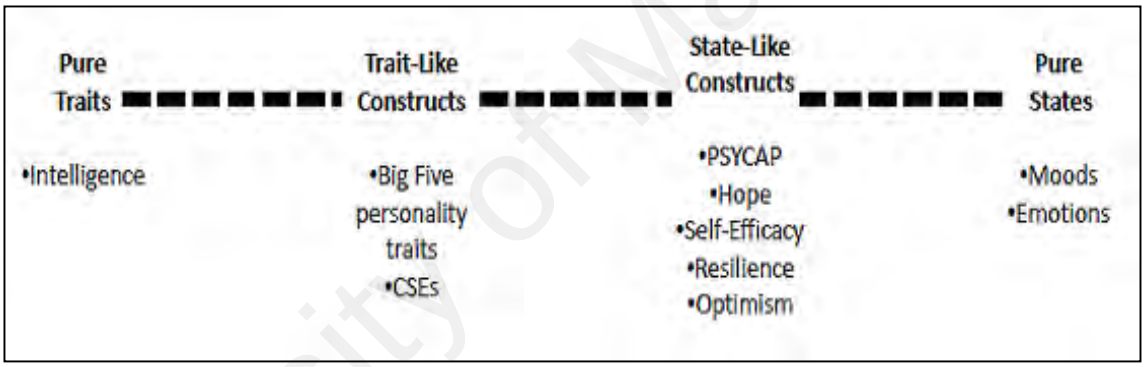

Figure 2.3: The trait-state continuum

Source: Lutans et al. (2004)

(b) ***Positive Psychological Capital***

Given the importance of KSB to organizational and individual performance, it is important to examine determinants of this behavior, such as PsyCap, that could have a positive effect on KSB. Organizations might find it a good idea to provide valuable assistance to organization members in navigating the ever-changing landscape of work. The POB studies are increasingly being used for this purpose.

(c) ***Arguments that Psychological Capital Differs from Personal Resources***

As discussed before, PsyCap mainly derives from the POB (Luthans, 2002; Luthans & Youssef, 2007; Peterson & Seligman, 2004). As discussed before, the variable should match four conditions: (1) supported by theory & research, (2) assessable, (3) unique to OB and (4) 'state-like' (contrary to 'trait-like') to be recognized as POB. Following this direction, Luthans and his colleagues have analyzed a variety of different capacities that may fulfill the POB definitional fourth conditions. Finally, only four dimensions were chosen based on fitting the POB conditions or terms, namely hope, self-efficacy, resilience and optimism, which can be abbreviated as HERO. These four positive states combine together to form the core construct of PsyCap.

According to Luthans (2004), positive PysCap has been determined as the new construct that goes beyond 'what you know' (human capital), 'who you know' (social capital), and basically answered to question 'who you are'. The term PsyCap can be defined as a positive psychological capacity that composed from: '(1) (self-efficacy) to make all required effort to deal with various difficulties or challenges; (2) (optimism) to be successful now and have positive future outlook; (3) attaining all settled aims and, when it is required to redirect paths to aims (hope) to be successful; and (4) having capability to bounce back against various problems and adversities to reach or achive success in his/her work-related outcomes (Luthans & Youssef, 2007). The same authors conceptualized and proposed positive PsyCap in order to respond to the challenges of the 'War for Talents'. They asserted that business executives were investing serious efforts in selecting and hiring personnel but usually underscored the importance of developing existing staff and nurturing talents. In this situation, employees' PsyCap can be viewed as a valuable resource to build sustainable competitive advantage. More specifically, some theoretical and empirical studies provide support for the positive impact of PsyCap on pro-social attitudes and behaviors (Avey et al., 2011; Luthans et

al., 2015). For instance, several studies have shown a positive link between PsyCap and extra-role behavior (Norman et al., 2010). More importantly, PsyCap has been determined as a key factor that has potential to affect KSB (Wu et al., 2016).

In sum, it has been conceptually (Youssef & Luthans, 2007) and empirically (Avey, Luthans, & Mhatre, 2008) proven that PsyCap appears to be a key construct of POB and higher-order constructs with four distinct dimensions (Luthans et al., 2007) which are able to influence desirable workplace outcomes. The following subsections will describe each of these dimensions of PsyCap and their impact on positive work-related behaviors or performance outcomes.

(d) ***Self-efficacy***

Firstly, this variable fits the specific POB terms and conditions. Initially, self-efficacy or confidence originated from the powerful and well-known social cognitive theory developed by Bandura (1986). The main idea of this POB construct is based on the assumption that people are proactive agents rather than reactive agents. The author further defined perceived self-efficacy as the confidence in one's abilities to organize and perform some action required to conduct or achieve these actions (Bandura, 1997). This definition of self-efficacy can be interpreted as follows: the ability to perform tasks does not only depend on one' skills, but also on the individuals' confidence with which they can apply these competencies to finish various job-related tasks (Stajkovic & Luthans, 1998). The same authors further argued that PsyCap efficacy, i.e., confidence, refers to individuals' belief to his or her potential to effectively deploy various personal resources such as psychological and courses of action required to perform and accomplish specific tasks in various settings (Stajkovic & Luthans, 1998). Next, self-efficacy also meets the POB second inclusion criteria, because it can be effectively analyzed by using different valid instruments. Such valid instruments or measurements

as a generalized self-efficacy scale (Schwarzer, Schroder & Zhang, 1997), behavioral implications of self-efficacy scale (Sherer et al., 1982) and new general efficacy-scale (Chen, Gully & Eden, 2001) were developed by different researchers. Thirdly, in a meta-analytical review, some scholars have discovered a number of relationships between self-efficacy and different jobs-related outcomes (Judge, Jackson, Shaw, Scott & Rich, 2007). A more contemporary study confirms the positive link between self-efficacy and different work-related performance (or behaviors) (Judge et al., 2007; Wang & Hall, 2015). Bandura (1995) claimed that employees with high self-efficacy are more likely to set higher goals and choose to perform more challenging tasks, and also noted that people with high-level of self-efficacy tend to show higher-levels of effort and dedications when they face various work challenges. In addition, they display high levels of self-motivation and are usually able to work independently for long periods of time (Luthans, Youssef, & Avolio, 2007). Consequently, highly self-efficacious individuals are more motivated to perform their job well.

The concept of self-efficacy has been linked to other desirable behaviors as well. For example, a positive relation has been established between self-efficacy and extra-role job behaviors (e.g., organizational citizenship behavior). These results may be due to the fact that people with high self-efficacy are more eager to be engaged in organizational citizenship behavior (OCB), since they are confident in their skills and abilities (Walumbwa, Hartnell & Oke, 2010). Lastly, past empirical studies have shown that self-efficacy is a crucial construct that predicts KSB (Hsu et al., 2007; Runhaar & Sanders, 2015; Tamjidyamcholo, Tamjid & Gholipour, 2013).

(e) ***Optimism***

Another significant dimension of PsyCap is optimism, which also fits POB inclusion criteria. Initially this construct was developed by Lionel Tiger (1979), who defined

optimism as an attitude related with an expectation about the future outlook of – 'one which the evaluator regards as socially desirable, to his advantage' (p. 18). On the other hand, PsyCap optimism mainly draws from attribution theory (Abramson, Seligman & Teasdale, 1978) and positive expectancies (Scheier & Carver, 1985). Positive expectancy theory claims that optimistic people have a high expectation that only good or positive things happen to them, at the same time pessimistic people tend to anticipate negative adversaries or scenarios. It is important to note that PsyCap's optimism is supposed to be realistic, it involves accurate evaluation of the motives and outcomes of different life situations, attributing life-success internally and life-failure externally (Nelson & Cooper, 2007). In addition, POB optimism has different precise and valid measurements such as occupational attritional style questionnaire (Furnham & Brewin, 1992), expanded attributional style (Peterson & Villanova, 1988), children's attributional style questionnaire (Thompson, Kaslow, Weiss & Nolen-Hoeksema, 1998) and internal personal situational attributions questionnaire (Kinderman & Bentall, 1996). Thirdly, POB optimism has been viewed as state-like and can be learned and promoted by using different approaches (Seligman, 2002, 2011; Seligman & Csikszentmihalyi, 2014). Finally, several studies show that optimism has also been associated with various work-related outcomes such as workplace performance (Luthans, Lebsack & Lebsack, 2008; Seligman, 2011), job performance (Youssef & Luthans, 2007), psychological well-being (Scheier, Carver & Bridges, 2001), coping and long-term recovery (King, Rowe, Kimble & Zerwic, 1998). Another line of evidence suggests a direct link between optimism and employees' outcomes such as job satisfaction, psychological distress symptoms, job burnout, affective commitment, task performance and employee engagement (Bressler, 2010; Hayes & Weathington, 2007; Kluemper, Little & Degroot, 2009; Medlin & Green, 2009). Previous studies have also demonstrated a negative link between optimism and unwanted job or work results, such

as intention to quit and cynicism and other negative outcomes (Avey, et al., 2008). Overall, optimistic workers who are more likely to deal with the unexpected changes or adversaries are more valuable to the organization rather than pessimistic employees (Luthans et al., 2015).

(f) ***Hope***

PsyCap hope satisfies all POB inclusion criteria. Firstly, PsyCap hope concept has a strong theoretical and research basis. This construct is based on well-grounded 'hope theory' (Snyder et al., 1991). Hope refers to the positive psychological state that is relying on joint 'sense of (1) agency and (2) pathways' (Snyder et al., 1991, p. 287). In addition, Snyder and colleagues have postulate that this psychological capacity is a cognitive personality state in which people are able to establish realistic but ambitious aims and achieve them through self-directed determination, motivation, and internalized state of control. The same authors further refer to it as 'agency' or 'willpower'. Another integral and essential component of hope is known as 'pathways' or 'waypower'. Namely, in these facets of hope, individuals are able to create alternative paths to their original goals if the primary ones become unavailable (Adams et al., 2002; Snyder, 2000; Snyder, Rand & Sigmon, 2002). Accordingly, hope consists of both waypower and willpower. Secondly, this concept also meet the POB conditions of reliable and valid assessment, as it has been measured using many different valid measurements, such as the hope scale (Snyder, 1995) and community-based hope for older adults (Farran & McCann, 1989). Thirdly, some studies have noted that hope can be promoted through goal-setting training (Snyder, 2000). Finally, hope is positively related to different job-related outcomes (Adams et al., 2002; Youssef & Luthans, 2007). For instance, past empirical work has reported that individuals with higher-levels of hope are more able to reach their goals (Snyder, 1995).

Other empirical research has observed a positive association between businessmen's hope and their levels of satisfaction with having business (Luthans & Jensen, 2002). Similarly, Suzanne Peterson and Luthans (2003) demonstrated a postive association between leaders' hope and financial performance of unit level, employee loyalty to their organization and job satisfaction. Hopeful people are more apt to be independent thinkers and had a significantly more internal locus of control (Luthans et al., 2007). Other organizational studies have shown that hope has been positively associated with different domains, such as academic and sport achievement, survival and adaptive beliefs and other measurements of well-being (Curry, Snyder, Cook, Ruby & Rehm, 1997; Range & Penton, 1994). Previous research has also concluded that hope has a direct positive influence on employee-related outcomes. For instance, a positive correlation has been well-established between hope and various positive job-related outcomes such as work or job satisfaction, happiness in the workplace or with organization, commitment to the organization, employee engagement to work and OCB (Avey et al., 2011; Ouweneel, Le Blanc, Schaufeli & van Wijhe, 2012; Peterson et al., 2011; Youssef & Luthans, 2007).

(g) ***Resilience***

Increased job insecurity, work overload and the rapidly changing nature of work creates stressful working environments. The last construct that fits the POB criteria discussed above is resilience. The concept of 'resilience' originated from child development research (Werner, 1990), but recently it has been recognized as a key component of work environment (Avey, Luthans, & Jensen, 2009; Luthans, Vogelgesang & Lester, 2006). This concept can be defined as the ability to move toward settled goals despite challenges and difficulties (Youssef & Luthans, 2007). Resilient employees have a solid understanding of their reality and capacity to adjust themselves

to changes. In addition, they have a strong belief that everything in life – problems as well – is not meaningless and pointless (Avey, Patera & West, 2006). This statement means that employees with high resilience tend to recover more quickly from challenges and to be more motivated to learn from these obstacles (Youssef & Luthans, 2007). In addition, valid and reliable measures were developed to evaluate resilience, such as the Connor-Davidson resilience scale (Connor & Davidson, 2003), the resiliency scale (Wagnild, 1993), ego-resiliency (Klohnen, 1996) and the resilience scale for adults (Friborg, Hjemdal, Rosenvinge & Martinussen, 2003).

Resilience can be promoted by using such practices as helping organization members to proactively prevent risk (compliance with deadlines) and by improving their job resources (i.e., more opportunities for engaging in training). Moreover, different initiatives directed at changing employees' behaviors or reactions to different situations can improve resilience (Luthans et al., 2006). For instance, a company could facilitate its employees' beliefs that they have control over their environment, which may increase employees' persistence to attain their objectives.

Finally, resilience fulfils the POB performance criterion. Previous studies have found association between resilience and a number of work-related outcomes (Avey et al., 2010; Luthans et al., 2015). In particular, resilience is correlated with improved employee performance (Luthans, Avolio, Avey & Norman, 2007), employee engagement (Cooke, Cooper, Bartram, Wang & Mei, 2016), job satisfaction (Matos, Neushotz, Griffin & Fitzpatrick, 2010), work well-being (Siu, Chow, Phillips & Lin, 2006), psychosocial adaptation (Wagnild & Young, 1993), work happiness (Youssef & Luthans, 2007), organizational commitment (Çetin, 2011), retention of employees in high-risk job positions (e.g., nurses) (Keeley & Grier, 2005) and organizational learning (Caniels & Baaten, 2018). Researchers have also suggested that companies that have managed to develop employees' resilience will be more adaptive and will show higher

performance over time (Luthans, Avolio, Walumbwa & Li, 2005). In addition, a leadership approach that focuses on developing open communication and trust-building has a significant impact on employee resilience (Luthans et al., 2007). Finally, resilience has also been found to influence extra-role behaviors such as OCB (Avey et al., 2010), innovative behavior (Jafri, 2012) and altruistic behavior (Amstadter, Moscati, Maes, Myers & Kendler, 2016).

(h) ***Psychological Capital: A Higher-Order Construct***

It is reported that that PsyCap is formed by integrating four positive PsyCap that match all conditions to be accepted as a POB and that, when joined together, have been shown to be a higher-order construct (Luthans al., 2015). Combination of the PsyCap HERO components have been displayed to have a synergetic effect whereby the whole (PsyCap) exceeds the sum of its parts. Particularly, the major theoretical assumption for these four HERO is an assessment of 'circumstances and probability for success based on motivated effort' (Luthans et al., 2007, p. 550).

These four psychological dimensions grouped together to form an overall PsyCap construct. For instance, hopeful people who have agency and pathways to reach their aims will be more capable to deal with difficulties in life and thus will be more resilient. Similarly, individuals with high self-efficacy will be more able to implement their hope, optimism, and resilience to particular work-related tasks within specific situation in their life. Individuals with high levels of resilience will be experts in employing the adaptive behaviors required for realistic optimism. In turn, self-efficacy, hope, and resilience may contribute to the development of positive attribution style through internalized feelings of being in control (Luthans et al., 2007). These are only some representative examples of the number of positive results that may derive from the interaction among the PsyCap components.

From an analytical perspective, empirical results provide evidence of discriminant validity across the four components of PsyCap (Alarcon, Bowling, & Khazon, 2013; Feldman & Kubota, 2015) and each of the four capacities of PsyCap adds significant unique variance and contributes to the construct as a whole (Luthans et al., 2007).

Conceptual and empirical studies confirm the convergent validity of the four positive resources of HERO that meet all criteria and conditions to be recognized as a POB (Alessandri, Borgogni, Consiglio & Mitidieri, 2015; Harms & Luthans, 2012; Kyle Luthans, Luthans & Palmer, 2016; Youssef & Luthans, 2013). These works support the underlying core construct of PsyCap to which the individual psychological capacities synergistically contribute. Substantially, the multidimensional nature of the PsyCap offers that it is a second-order formative construct.

2.12. The Organizational Factors of Knowledge Sharing Behavior

Davenport and Prusak (1998) highlighted that KSB does not exist in a vacuum, claiming that various organizational factors might affect an individual's KSB. Consequently, identifying these organizational factors is an important task. In the context of KS, previous studies examined various organizational factors that are likely to promote KSB, such as top management support (Lin & Lee, 2004), organizational culture (Adel Ismail, Nayla Yousif & Yasmeen Fraidoon, 2007; McDermott & O'Dell, 2001), reward systems (Bartol & Srivastava, 2002), job design (Foss, Pedersen, Reinholt, Fosgaard & Stea, 2014; Foss, Minbaeva, Pedersen & Reinholt, 2009), HRM practices (Camelo-Ordaz et al., 2011; Nielsen et al., 2011) and more. Among these organizational factors, the role of HRM practices appears to be particularly important because they serve as a tool which helps to better integrate knowledge in the organization (Edvardsson, 2008). HRM practices has been increasingly recognized as an important mechanisms for promoting KS within an organization (Kim & Ko, 2014;

Minbaeva et al., 2013); these practices include recruitment, selection, performance appraisal, incentives, training, and development (Kaše et al., 2009; Nielsen et al., 2011), as well as compensation (Bock & Kim, 2002; Fey & Furu, 2008), autonomy, task identity and feedback (Foss et al., 2009).

(a) **PIED as an Organizational Factor of knowledge sharing behavior**

Another important component of HRM is HRD (Weil & Woodall, 2005). In today's changing world, HRD is considered a key element to the evolution of a flexible, efficient labor force (Knowles, Holton & Swanson, 2014). As Mankin indicated, HRD is a concept that covers a number of activities and processes (Mankin, 2001). While many understand the importance of HRD to organizations, there is still academic debate on what exactly constitutes HRD, both in the meaning of the term and the impact of the concept in practice (Boxall, 2018, McGoldrick, Stewart & Watson, 2002). Although there is no commonly accepted definition, several authors have attempted to identify its major components. For example, Swanson and Holton (2001) asserted that HRD encompass such activities as training & development, career development and organization development. Other scholars argued that HRD is not only concerned with training and development but with other activities such as employee career planning, development initiatives, performance appraisal and organizational development (Haslinda, 2009; Mankin, 2001; Swanson, 1995).

One of the core noteworthy activities of HRD (Costen, Johanson, & Poisson, 2010) and HRM (Jawahar, 2012) is employee development. Several studies highlighted the importance of studying the employee development as organizational intervention that is likely to influence an employee's performance in the workplace (Benson et al., 2004; Grawitch, Trares & Kohler, 2007; Knowles et al., 2014; Werner & DeSimone, 2011). Investment in human development is considered synonymous with organizational care

and support for employees (McAllister & Bigley, 2002; Rousseau, 1998). From the literature, there are different definitions of employee development. According to Rahman and Nas (2013), employee development is aimed to improve overall effectiveness of employees and their organizations by enhancing employees' knowledge, skills, and competencies. Employee development efforts send a strong signal to employees that organizations care about them. In return, employees reciprocate with positive behavioral outcomes (Antonacopoulou, 2000; Tansky & Cohen, 2001). This study continued this line of research by introducing another facet of training and development in the form of perceived investment in employee development. The basic principle of PIED is that it is supposed to 'creates conditions in which employees believe that their organization values their contribution and cares about employability' (Lee & Bruvold, 2003, p. 981). In exchange, organization members may feel obligated to engage in KSB. In addition, this new variable refers to employees' appraisal of their company's dedication to personal and professional development and growth of their staff (Lee & Bruvold, 2003) which also may signal to individuals that participating in professional development programs is the 'norm' of the company, which in turn may internalize norms for KSB. In this research, investment in employee development is expected to be a predictor of employees' KSB.

2.13. Integrated Factors of Knowledge Sharing Behavior

Despite the great research efforts in recent years, KSB is still an emerging area of investigation, because it is a complex social phenomenon (Yen et al., 2015). Thus, in order to better understand it, prior studies have incorporated multiple factors and clarified the relationships among them by integrating various theories. Table 2.2 presents a summary of previous studies on the relationships between the proposed variables of this research.

Firstly, this review shows that previous research has indicated that different HRD practices has an impact on KS. Next, several studies have explored that such HRD practice as investment in employee development has a potential to promote employees' extra-role behavior. Namely, Table 2.2 shows that PIED directly influences OCB and KS. However, other studies have considered various constructs as mediating variables in the proposed relationship. For example, it was found that PIED has an indirect effect on work effort, level of work quality and OCB through its direct effect on the psychological climate for cooperation in the workplace. Other empirical work shows that PIED can affect employees' intention to stay through job satisfaction. Thereby these findings propose that different concepts can play a mediating role between PIED and pro-social behaviors (e.g., KSB).

In the past decade, PsyCap has attracted considerable research interest due to its potential to influence positive individual outcomes. In addition, a distinctive feature of this concept is that it can be managed and developed (Luthans et al., 2015). Therefore, PsyCap can play a mediating role between organizational variable and relevant outcomes (e.g., KSB). This argument can be supported by the review paper, which concluded that there is a lack of research incorporating HRD practices as antecedents and workplace behaviors (e.g., KSB) as an outcome of PsyCap (Newman, et al., 2014). After reviewing the literature, it seems that there is no research examining the mediating effect of PsyCap in the direct path between PIED and KSB.

Secondly, literature review suggests that there is a need to examine the aforementioned relationships from a contingency perspective. Thus, there is a need for studies that explore factors that might moderate PIED-PsyCap-KSB links. This research gap can be explained by previous studies, which have found inconsistent relationships between PsyCap and pro-organizational behaviors (e.g., KSB). Namely, one stream of empirical studies have found that PsyCap has an influence on such employee outcomes

as OCB (Norman et al., 2010) and KSB (Wu & Lee, 2017). However, another stream of studies could not find any significant association between PsyCap and employees' pro-social behaviors such as OCB (Shahnawaz & Jafri, 2009). It should be granted that these mixed results could be due to possible methodological or contextual moderators but it should be noted also that there is a lack of empirical research on examining factors that may moderate the link between PsyCap and positive workplace behaviors (Newman et al., 2014). Therefore, potential moderating variables need to be introduced, to get a more holistic picture of the various determinants of KSB.

Recent research suggests that the relationships between PsyCap and its antecedents are not fully understood (Luthans & Youssef, 2017). Namely, different possible boundary conditions should be considered for these relationships. Therefore, potential moderating variables may help us to better understand factors that may influence PsyCap interactively. From the summary of empirical studies in the Table 2.2, it can be observed that several studies have investigated the interaction effect of different factors on PsyCap (Huang & Luthans, 2015; Nielsen, Newman, Smyth, Hirst & Heilemann, 2016; Wu et al., 2016). Consequently, other moderating factors should be taken into account when relations between PsyCap and its antecedents are examined.

The next section presents Table 2.3, a summary of the moderators between organizational and individual factors and KSB.

Table 2.2: Summary of the Empirical Studies

#	Author (Year)	Aim of the study	Main Constructs			
			Independent Variables	Mediators	Moderators	Dependent Variables
1	Dana Minbaeva, Pedersen, Björkman, Fey, & Park, 2014	This work aims to analyze the relationship between HRM practices, absorptive capacity and knowledge transfer.	some HRD practices	absorptive capacity		knowledge transfer
2	Kuvaas & Dysvik, 2010	The aim of this work is to examine relationships between PIED, perceived supervisor support and employee outcomes.	perceived supervisor support	PIED		work effort, work quality and organizational citizenship behavior
3	Kuvaas, Buch, & Dysvik, 2012	This research explores the link between PIED and KS and also includes the moderating effect of intrinsic motivation and social and economic exchange perceptions.	PIED		intrinsic motivation, social and economic exchange	knowledge sharing
4	Kuvaas, Buch, & Dysvik, 2013	The study explores the link between PIED and employee outcomes.	PIED			work effort, work quality and organizational citizenship behavior

Table 2.2 continued

#	Author (Year)	Aim of the study	Main Constructs			
			Independent Variables	Mediators	Moderators	Dependent Variables
5	Kuvaas & Dysvik, 2011	This work tests the mediating effect of the psychological climate for cooperation on the link between temporary employees' PIED and pro-social behaviors.	PIED	Psychology-cal climate for cooperation		work effort, work quality and organizational citizenship behavior
6	Fallon & Rice, 2015	The goal of this research is to examine the mediating effect of work satisfaction between PIED and intention to stay.	PIED	satisfaction from job		intention to stay
7	Norman et al., 2010	The target of this study is to analyze the impact of PsyCap on organizational citizenship behavior.	PsyCap			organizational citizenship behavior
8	Wu & Lee, 2017	One of the goals of this research work is to identify how PsyCap affects KS.	PsyCap			knowledge sharing
9	Shahnawaz & Jafri, 2009	This research attempts to analyze the link between PsyCap and organizational citizenship behavior.	PsyCap			organizational citizenship behavior
10	Huang & Luthans, 2015	One of the aims of this research is to identify how learning goal orientation interacts with team learning behavior to predict PsyCap.	learning goal orientation	PsyCap	team learning behavior	employee creativity

Table 2.2 continued

#	Author (Year)	Aim of the study	Main Constructs			
			Independent Variables	Mediators	Moderators	Dependent Variables
11	Wu et al., 2016	One of the purposes of this empirical work is to examine how group trust moderates the link between abusive supervision and PsyCap.	abusive supervision	PsyCap	group trust	knowledge sharing

2.14. A Review of Moderators

This section examines the predictive role of moderating variables in enhancing KSB. Previous research studies have identified the impact of moderator variables on the organizational/ individual factors-KSB link. A summary of the moderator variables tested in different studies is shown in Table 2.3 below.

Table 2.3: Summary of Moderators Examined in Prior Studies

Moderating Variables	Author	Research Link
Trust in Supervisors/Colleagues	Kim and Ko (2014), Gian Casimir (2012)	Organizational determinants / Individual factors - KSB
Affective Trust	Shirazi (2014)	Individual factors – KSB
Trust Propensity	Peralta and Saldanha (2014)	Organizational factors – KSB
Cooperative Norms, Norms	Shen, Tang, and D'Netto (2014), Quigley, Tesluk, Locke, and Bartol (2007)	Organizational factors / Individual factors - KSB
Organizational Culture	Durmusoglu, Jacobs, Zamantili Nayir, Khilji, and Wang (2014)	Organizational factors – KSB
Supportive Climate	Foss et al. (2014)	Organizational factors / Individual factors - KSB
Organizational Type	Vong, Zo, and Ciganek (2014)	Organizational factors – KSB
Intrinsic Motivation, Social Exchange, Economic Exchange	Kuvaas et al. (2012)	Organizational factors - KSB
Job Autonomy	Buch et al. (2015)	Organizational factors - KSB
Job Security	K. M. Bartol, Liu, Zeng, and Wu (2009)	Organizational factors - KSB
Participant Involvement	Chang and Chuang (2011)	Individual factors - KSB
Cultural Dimensions	Hwang (2012)	Individual factors - KSB
Staffing	Gagné (2009)	Organizational factors - Individual factors - KSB
Organizational Support	Toh and Srinivas (2012)	Organizational factors - Individual factors - KSB

As can be seen in Table 2.3, Kim and Ko (2014) reported the moderating role of trust in supervisors in the relation between HR practices and KSB. Similarly, Casimir et al., (2012) has shown that affective trust in colleagues has a moderating effect on the impact of affective commitment on KSB. The academic work of Peralta and Saldanha (2014) has also demonstrated the significance of trust propensity as a moderator in the link between knowledge-centered culture and KS. Another group of variables were found to moderate organizational and individual factors of KSB: for example, cooperative norms moderate the influence of HR diversity management on KSB (Shen et al., 2014). In the similar vein, organizational culture (Durmusoglu et al., 2014) and supportive climate (Foss et al., 2014) have been identified as a moderators that might change the relation between organizational rewards and KS. Again, in this context several researchers have explored such moderating variables as organizational type, intrinsic motivation, social exchange, economic exchange, job autonomy and job security in influencing the organizational factors-KS link (Bartol et al., 2009; Buch et al., 2015; Kuvaas et al., 2012; Vong et al., 2014). The next two variables that strengthen the direct link between individual factors and KSB are participation involvement (Chang & Chuang, 2011) and cultural dimensions (Hwang, 2012). Lastly, such factors as staffing and organizational support are identified as moderating variables in an organizational factors- individual factors-KSB link (Gagné, 2009; Toh & Srinivas, 2012).

In sum, this review of empirical studies suggests that different moderating variables should be considered to better explain the interactive relationship between organizational factors/ individual factors and KSB. This might be explained by the fact that previous studies relating organizational/individual factors to KSB produced mixed results (Witherspoon et al., 2013). Therefore, various potential moderating variables should be taken into account in predicting KSB. From these arguments, it is clear that there is a need to further examine these relationships from a contingency perspective.

The next section discusses the significance of using OID as a moderating variable in the proposed model.

(a) ***Organizational Identification as a Moderator***

In the current research, it is proposed that OID plays a significant moderating role in the PIED-PsyCap- KSB relationship. In the following section, the importance of using OID as a moderating variable will be discussed.

When trying to understand employee-organization relationship, two conceptual paradigms have been widely applied: social exchange theory and social identity theory. However, both perspectives have developed mainly in isolation from each other; recently some scholars have considered the integration of the two theoretical perspectives in the prediction of individuals' behavior (Tavares et al., 2016). This approach can be supported by the following arguments.

Previous works have mainly built on the SET, which has been recognized as an important framework to explain employee- employer exchange links. As mentioned before, SET postulates that organization members tend to respond to the fair treatment with various pro-organizational behaviors. However, employees may not follow the norm of reciprocity in the direct manner or way, due to that fact that it is more complex process than it was originally anticipated (Trybou, Gemmel, Pauwels, Henninck & Clays, 2014). These findings point to the need to further understand reciprocity in the organization-employee relationships from a contingency perspective. Following this line of research, several studies have demonstrated that OID positioned to play a significant role in the organization-employee relationship. More specifically, this sense of 'belongingness' are seems to impact significantly on how organization members see organizational actions or practices (Riketta, 2005) and it is vital factor to comprehend dynamics of reciprocity. These arguments provide strong justifications to our rationale

to expect OID to have a contingency (moderating) effect on the link between organization and employees.

A short-review of SIT and identification is necessary for better understanding the importance of this concept. Organizational identification was originally was proposed by Ashforth and Mael (1989) as key components of social identification. Past research has noted that firms constitute a main source of an employee's identity (Riketta & Van Dick, 2005). SIT assumes that people in organization classify themselves into social groups based on different factors such as professional membership, profession, and sex (Tajfel & Turner, 2004). The same authors further argued that employees took some portion of their self-concept from being a member of some groups. Hence, they identify themselves with the all positive or negative events of the team or firm. More specifically, failures of their companies are seen as personal one. Also, OID is recognized as some sort of feeling of belongingness with the team.

This concept offers can bring some benefits. For instance, it appears to satisfy social needs such as social belongingness, and hence, identification may develop and enhance self-perception (Ashforth & Mael, 1989). This variable has a positive impact on a perceptions, attitudes, and behaviors of individuals which belongs to the group. Indeed, social identity motivates employees to behave in a manner that are congruent with the values and goals of the group. In addition, the more identity is obtained from belonging to a team, the more individual's behaviors will be shaped by what is good for their firm (Mael & Ashforth, 1992).

In application to organization behavior research, social identity should be combined with a social exchange theory in order to better understand the factors of KSB from a contingency perspective. Furthermore, the proposed relationship of this study can be supported from an empirical standpoint. As was shown in Table 2.3, the relationship between PsyCap and its antecedents and consequences (e.g., KSB) are not consistent.

Therefore, different boundary conditions should be considered as well. Some previous studies have analyzed the moderating effect of OID on the association between individual factors and pro-organizational behaviors. For example, one of the studies conducted by Norman and colleagues have demonstrated that OID moderates the link between individuals' PsyCap and their OCB (Norman et al., 2010). Similarly, other research has identified that OID moderates the influence of servant leadership on OCB (Vondey, 2010). Previous studies have also explored the moderating role OID to explain the effect of proactive personality on entrepreneurial leadership (Prieto, 2010) and have identified the moderating role of OID between perceived organizational support and OCB (Trybou et al., 2014). In sum, OID play a significant moderating role in predicting positive individual outcomes.

At the time of this review, to our knowledge, there is a lack of empirical studies examining the moderating role of OID in the PIED-PsyCap- KSB relationship.

2.15. Summary of Knowledge Sharing Behavior Literature

This section provides a short summary of literature review with a special focus on the research gaps mentioned in Chapter 1.

In the past decades, a number of research works have been devoted to examining various predictors of KSB. The literature review focuses on individual and organizational factors that affect individuals' KSB. Among the individual factors of KSB, such psychological factors as personality (Matzler et al., 2008) and psychological capital (Luthans et al., 2015) have attracted recent interest. Specifically, the notion of PsyCap has attracted much academic and industrial interest because of its huge potential to promote desirable employees' behavior (Avey et al., 2011; Luthans et al., 2015).

Another stream of research has focused on identifying organizational factors that foster KSB. These include HRM (Minbaeva et al., 2012), reward systems (Lee & Ahn,

2007), management support (Lin, 2006), organizational structure (Willem & Buelens, 2009), information system (Hislop et al., 2018) and knowledge governance mechanisms (Foss et al., 2010), all of which are elaborated in the literature review. Along this line, other studies have focused on analyzing various HRD practices that have a capacity to influence KSB (D. Minbaeva et al., 2013). Investment in employee development in particular, as a desirable HRD practice, seems to be a potential predictor of individuals' KSB.

The literature review reveals that only few studies have attempted to explore how organizational and individual factors work together to predict KSB. Consequently, there is clear need to do more research on examining HRD practices which may affect PsyCap that further leads to individuals' KSB. Relying on these arguments, this study proposes that PsyCap may mediate the link between such HRD practices as investment in employee development and employees' KSB.

The review of the studies also suggests that there is a need to examine PIED-PsyCap-KSB relationships from a contingency perspective. The review provides a summary of moderating variables used in previous studies. By systematically analyzing moderating factors and taking into account the fact that the relationship between individuals' PsyCap and its antecedents and consequences are not fully understood, this research uses organizational identification as a moderating variable.

Based on the literature review, several strengths and weaknesses of each theory are critically discussed above. It can be concluded that due to the fact that KSB is a complex social phenomenon, no theory alone can sufficiently explain it. Research shows that emerging views should be taken into consideration to fully elucidate this prosocial behavior. In sum, various theories should be integrated in order to develop a more holistic view of how KSB can be enhanced. By discussing various theories related

to KSB, this study attempts to integrate social exchange and social identity in order to explain employees' KSB.

2.16. Theoretical Framework and Hypotheses Development

The following sections discuss the theoretical background that leads to development of research hypotheses. This comprises a discussion of underpinning theories and research hypotheses.

2.17. Underpinning Theories

This section explains the need to integrate the four constructs (i.e., perceived investment in employee development, PsyCap, organizational identification and KSB) in a conceptual framework to determine how KSB in the post-Soviet Kazakhstan context can be enhanced. The structure of the conceptual framework is based on the social exchange theory, social identity theory and positive psychology view. The wide review for these theories was reported in the previous sections. The following section gives a brief explanation to the theories applied to the theoretical framework leading to the development of the research hypotheses. A discussion follows.

2.17.1. Social Exchange Theory

The SET is used as a guide in developing the conceptual framework of this research. This theory assumes that people consider the expected benefits in relation to the costs (Blau, 1964; Homans, 1958). The SET also posits that individuals engage in a social exchange process when they perceive that the expected benefits exceed the perceived costs. In other words, when perceived benefits outweigh costs, individuals will sacrifice their time and effort to share their knowledge with others. This theory views KSB as a product of reciprocal arrangements. This study, specifically, proposes that as a result of

investment in employee development, employees may feel the need to reciprocate favorable treatment by engaging in KSB.

2.17.2. Social Identity Theory

The second theory that applied in this research for developing a conceptual framework is social identity theory. The SIT assumes that individuals categorize themselves and others in order to derive their social identities (Turner, Hogg, Oakes, Reicher & Wetherell, 1987). The theory also posits that a people's self-concept is based not only on a personal identity, but also on a social identity. Previous sections in this study provide several strong justifications that OID has the potential to be a moderating variable.

2.18. Research Framework

This chapter discusses in details a research framework and hypotheses as well. Also, it covers the research questions mentioned in the first chapter. Despite the fact that several empirical research has proposed that PIED promotes pro-social behavior (e.g., KSB) (Kuvaas et al., 2012), there is clear need to improve our understanding of mediating and moderating variables that might influence this relationship. This statement can be supported by the recent conceptual paper that calls for research to identify possible moderating and mediating variables that may affect the relationship between aforementioned variables (Newman et al., 2014).

In the current study, a theoretical framework is built to analyze the relationships between (1) perceived investments in staff/employee development, (2) KSB, (3) the intervening effect of PsyCap and (4) the moderating effect of organizational identification. More specifically, the conceptual framework proposes that the organizational factor (PIED) would affect the psychological factor (PsyCaP), which, in

turn, affects KSB. In other words, PsyCap is supposed to mediated the effect of PIED on KSB. In addition, this indirect link (PIED-PsyCap-KSB) tends to be moderated by psychological factor (OID) as well. Figure 2.4 reports the theoretical framework of this research work.

A novel research framework was established on the basis of two theories (SET and SIT) and empirical findings as discussed before. These theories help us understand the nature of the linkage between the constructs investigated in this study, which has been built through the theoretical support from prior research. For instance, past studies have proposed to integrated SET and SIT to explain employees' behavior in organizations (Avanzi et al., 2014). This view was reinforced by other study which suggested that integration of these theories increase our understanding of factors that facilitate KSB (Chiang, Hang & Chuang, 2018).

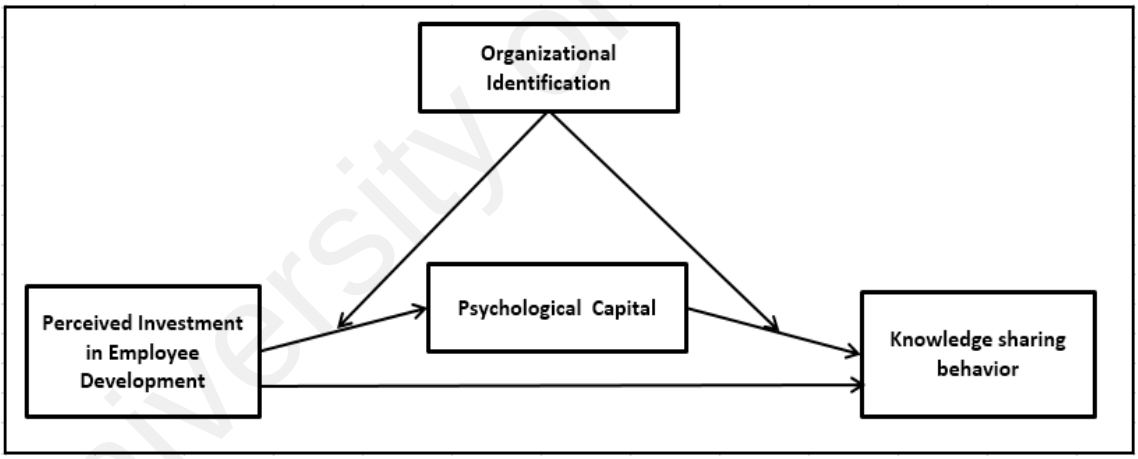

Figure 2.4: Research Model

2.19. Hypotheses Development

(a) ***Relationship between Perceived Investment in Employee Development and Knowledge Sharing Behavior***

Several researchers found that HRM practices play a key role in facilitating KSB (Gagné, 2009; Minbaeva et al., 2012). More detailed studies showed that work design (Kaše et al., 2009), work autonomy (Foss et al., 2014), organizational reward system

(Bartol & Srivastava, 2002) and other HR practices may effectively promote KSB. It has also been reported that HRD practices can be good facilitators of learning processes (Garavan et al, 2016). HRD is a relatively young concept (Knowles et al., 2014) that encompasses such activities as: training & development, career development and organization development (Swanson & Holton, 2001). One of the major targets of HRD professionals is to provide learning opportunities for realizing human potential (Shari Peterson, 2004). In another words, they are facilitating development of an organization's human potential. This study intends to expand this knowledge base by using a related, type of training and development in the facet of PIED. Furthermore, this new construct can be defined as an employees' appraisal of their employer's dedication to professional development of their staff. According to SET, investment in employee development practices can be interpret by employees as a signal that they are appreciated and valued by their employer. Consequently, they are more likely to respond positively through showing positive workplace attitudes and behaviors. A review of literature has demonstrated that PIED is positively associated with improving individual and organizational performance (Kuvaas & Dysvik, 2009b; Kuvaas, Dysvik & Buch, 2014). For instance, Fallon and Rice (2015) asserted that investment in staff development will enhance job satisfaction, which may in turn, lead to lower employee turnover. Other authors have found that PIED are significantly related to such positive employee outcomes as organizational commitment (Lee & Bruvold, 2003), employee engagement (Shuck, Twyford, Reio & Shuck, 2014), organizational identification (He, Pham, Baruch & Zhu, 2014) and employee competence (Choi & Yoon, 2015).

PIED might also motivate employees to share their knowledge and expertise. As was mentioned before, SET is well suited to explore the effects of PIED on employees' KSB. Based on this theoretical framework, when organizations invest in their staff, they, in turn, are more likely to reciprocate with desirable work attitudes (Blau, 1964).

In another words, individuals tend to reciprocate the treatment they receive. Also it had been found that employees are generally motivated to maintain fair and balanced exchange relationship with the organization at which they work (Conway & Briner, 2005). Consequently, employees may reciprocate PIED by working hard, doing extra tasks and exhibiting extra-role performance, which in turn influences the desire of organizational members to share their knowledge or expertise with their colleagues. We adhere to this theoretical assumption while developing our hypothesis. Consequently, the following statement is formulated:

Hypothesis 1: Perceived investment in employee development has a positive effect on employee KSB.

(b) ***Relationship between Perceived Investment in Employee Development and Psychological Capital***

PsyCap represents another positive outcome that may be associated with PIED. In recent years, POB research has emphasized the examination of antecedents and consequences of PsyCap (Luthans et al., 2015; Newman, et al., 2014). Understanding critical factors that positively impact PsyCap can assist organizations to build effective strategies aimed at developing and leveraging employees' PsyCap (Avey, 2014).

As was discussed previously, the term POB was firstly coined by Luthans (2002). He revealed that PsyCap is determined to be more stable than mental states like postures or emotions, but more flexible than individual personality. Thus, it may help employees to maximize their motivation toward attaining aims and has capability to influence work-outcome behaviors.

POB research has addressed the antecedents of PsyCap, which include supportive climate (Luthans, Norman, Avolio & Avey, 2008), organizational socialization practices (Gruman et al., 2013), transformational leadership (Rebelo, Dimas, Laurencio &

Palacio, 2018), high-performance work system (Miao et al., 2014), learning climate (Heled et al., 2015), ethical leadership style (Bouckenooghe, Zafar & Raja, 2014) and organizational justice (Hur, Rhee & Ahn, 2015). Consequently, these studies suggest that a number of factors may influence PsyCap development. In this study, PIED is examined as a possible predictor of PsyCap. These motivational practices may affect PsyCap for several reasons.

First, on the basis of SET (Blau, 1964), employees who perceive the company as caring about their long-term professional development are more likely to reciprocate with emotional dedication. This may allow employees to feel more confident, optimistic, hopeful and resilient. Second, these development practices provide organization members a greater feeling of control over their work life due to the opportunities to improve their knowledge, skills and competencies (Lee & Bruvold, 2003). Hence, it may lead to the enhancement of psychological states such as hope, optimism, resiliency and self-efficacy. Finally, HRD practices may provide the necessary conditions for PsyCap to be developed. For instance, when organization members feel that their organization cares about their development, they will be more eager to use the pathway generation characteristic of hope to try new approaches or tactics to solve organizational problems. Similarly, an investment in employee development may help employees to 'bounce back' after hardships. Based upon the arguments stated above we expect PIED to be directly related to employees' PsyCap. Therefore, the following hypothesis is formulated:

Hypothesis 2: Perceived investment in employee development has a significant positive impact on employee PsyCap.

(c) ***Relationship between Psychological Capital and Knowledge Sharing Behavior***

For the last two decades, a number of studies have been made to better understand a wide variety of factors that have potential to influence KSB (Witherspoon et al., 2013). Previous research on individual-level KS identifies psychological factors as significant antecedents of KSB. Consequently, it seems rational to view positive PsyCap as a potential predictor of KSB. The concept of PsyCap is relatively new in the area of positive psychology. This concept can be formally defined as 'an individual's positive psychological state of development' (Luthans, et al., 2007 p. 3). One of the key features of this concept is that it is state-like and therefore relatively opens to change and development (Luthans, Avey & Patera, 2008). As it was discussed before, PsyCap comprised from HERO components.

Several authors have found that this concept has a potential to influence desirable behaviors and work-related outcomes (Luthans et al., 2015) such as satisfaction with their jobs (Luthans et al., 2007), dedication to mission or vision (Kyle, Luthans & Jensen, 2005), desire to leave the organization (Avey et al., 2009), overall well-being of staff (Avey, Luthans, Smith & Palmer, 2010), work related engagement (Paek, Schuckert, Kim & Lee, 2015; Sweetman & Luthans, 2010) and work-related performance (Luthans, et al, 2015).

In this work, we assume that employees with higher-levels of PsyCap are more inclined to be involved in KSB, for the next plausible justifications. Firstly, researchers find that organization members with a high level of PsyCap tend to exhibit more proactive behavior, (Frese & Fay, 2001) which requires people to be involved in KS processes. Second, individuals with higher PsyCap are more inclined to participate in behaviors like new idea creation, due to the fact that they may feel less fear of making mistakes or failure comparing with those individuals who are less inclined to risk-taking behavior (Luthans, et al., 2015). By way of illustration, hope as a psychological strength

may assist individuals to perceive failures and problems as a normal part of life, and make them believe that they will be resolved in the end (Larson & Luthans, 2006). Furthermore, organizational members with higher level of self-efficacy are more inclined to show pro-organizational attitudes and behaviors in their workplace (Luthans et al, 2015). Hence, they are more open to new ideas and more eager to share their knowledge. Finally, existing psychological research works provide additional evidence for the proposed link between PsyCap and KSB. For example, Fredrickson (2003) has examined employees' positive emotions through voluntary attitudes or behaviors such as KS or voluntary assisting their colleagues. Overall, there can be logical links between these factors and KSB. Accordingly, we may hypothesize that:

Hypothesis 3: Psychological capital will positively affect knowledge sharing behavior.

(d) ***Organizational Identification as a Moderator between Perceived Investment in Employee Development and Psychological Capital***

In addition to the moderating role of OID in the PsyCap-KSB link, OID is likely to play a significant moderating role in the PIED-PsyCap relationship. Despite a number of detailed empirical investigations in support of the norm of reciprocity, it has been suggested that organization members do not follow the reciprocity norms in a straightforward way. Some recent studies have reported that social exchange may be more comprehensive that initially assumed. Furthermore, it is suggested that reciprocity can be influenced by different moderating factors (Trybou et al., 2014). Namely, it has been proven that OID has a powerful impact on how organization members perceive or react to organizational actions (Hekman, Bigley, Steensma & Hereford, 2009). Consequently, the moderating role of OID on the link between organizational practices and employees' PsyCap cannot be undervalued. The major issue here is whether

organizational practices (e.g., PIED) are enough to develop employees' PsyCap. Several scholars have argued that organizational practices do not always have a beneficial effect on building employees' PsyCap (Nielsen et al., 2016; Wu et al., 2016).

Different factors may affect the PIED-PsyCap link. Specifically in this study, our main interest is to examine the moderating impact of OID on the aforementioned relationship. It seems reasonable that employees who perceive their organization's failures and successes as their own (high on OID) are more appreciative of organizational effort (e.g., PIED) and hence have a high level of psychological strength. More specifically, organization members are more likely to reciprocate favor treatment (e.g., PIED) when they feel a higher sense of indebtedness to their organization. The proposed relationship could be justified by the argument that individuals have a strong tendency to reciprocate good treatment as their sense of obligation or responsibility to the provider grows (Cartwright & Zander, 1953). Individuals are eager to instill benefits with extra symbolic value when they feel relationally closer to the provider (Hatfield, Utne & Traupmann, 1979). For instance, beneficial organizational actions represent caring on the part of the provider (Molm, Schaefer & Collett, 2007). Moreover, according to Parry (1986), the feeling of obligation can be so uncomfortable and the idea of repaying something back so satisfying that people usually tend to overcompensate for the favorable treatment they got from others.

On the other side, for individuals who do not view their values and goals as congruent with those of the organization, investments in employee development may not necessarily mean a strong sense of indebtedness towards their organization. Therefore, based on the reasons mentioned above, it is clear that OID has a potential to moderate the association between PIED and PsyCap, and so this following hypothesis is formulated:

Hypothesis 4: Organizational Identification positively moderates the relationship between perceived investment in employee development and psychological capital.

(e) ***Organizational Identification as a Moderator between Psychological Capital and Knowledge Sharing Behavior***

Effective management of PsyCap may enhance competitive advantage through improved performance (Luthans et al., 2007). As discussed before, some research has indicated that PsyCap has an impact on positive behaviors such as OCB (Norman et al., 2010), in-role job performance (Bouckenooghe et al., 2014) and creative performance (Lin, Kao, Chen & Lu, 2015). In the similar vein, some other scholars have found that individuals' PsyCap is a key predictors of processes related to KS. It is supported by studies which demonstrate that PsyCap plays a vital role in promoting employees' knowledge integration processes (Gruman et al., 2013) as well as KS behavior (Qiu, Yan & Lv, 2015).

However, another stream of research did not report any significant association between PsyCap and work-related outcomes of employees. More specifically, Shahnawaz and Jafri (2009) in their research could not find any significant link between PsyCap and employees' OCB. Another study has found that such dimensions of PsyCap as confidence and optimism were not positively correlated with job satisfaction (Larson & Luthans, 2006). Furthermore, one other study has also reported that PsyCap was more strongly associated with employee performance in service industries rather than in manufacturing industries (Avey et al., 2011). In addition, the findings of Abbas, Raja, Darr, and Bouckenooghe (2014) could not support the hypothesis that PsyCap decreases intention turnover. Chang, Lin, Chia, and Yang (2013) demonstrated that PsyCap of individuals is not correlated with their research performance. Finally, Zhu and Wang

(2011) found that entrepreneur PsyCap did not significantly relate to innovative behavior. Based on this brief literature review, we may conclude that the impact of PsyCap on desirable employee attitudes is mixed. Therefore, to get a better picture of the full spectrum of benefits that PsyCap can contribute to extra-role behaviors, it is clear that different moderating factors should be explored.

Relying on the evidence brought above, it is postulated that PsyCap might have positive impact on KSB under some terms. Particularly, it has been posed that OID will moderate the aforementioned relationships. OID is one of the forms of social identification. In accordance with Ashforth and Mael (1989), this social term refers to the employees' perception of belongingness to their firm. In the case when organizational member has higher level of OID, they are more inclined to show pro-organizational behaviors or attitudes. Simply, OID motivates employees to behave in more positive manners. More specifically, workers high on OID are tending to show more extra-duty behaviors (e.g., KSB) towards achieving their overall outcomes (Ashforth, Harrison, & Corley, 2008). Indeed, employees are more likely to obey various rules of their organizations and behave for the good sake of their firm. Extra-role performance means 'being not required by the organization' or, not being formally rewarded or punished if the job is not executed (Van Dyne & LePine, 1998). That is why employees should make extra efforts to share knowledge or expertise with their colleagues or subordinates. Consequently, we assume that individuals with higher level of OID will be more motivated to deal with organizational issues from the perspective of group interest (Van Dick et al., 2006). In this situation, such individuals will recognize themselves within the frames of the shared group identity, and will choose to behave like a 'good citizen' (Flynn, 2005). Hence, it is posed that OID may make stronger (or moderate) link between PsyCap and employees' KSB. Contrary, in the lack

of OID, employees are not likely to be engaged in KS behaviors. Thus, the following hypothesis is formulated:

Hypothesis 5: The positive relationship between psychological capital and knowledge sharing behavior will be stronger at higher levels of organizational identification and weaker at lower levels of organizational identification.

(f) ***The Mediating Relationship between Perceived Investment in Employee Development and Knowledge Sharing Behavior***

As stated before, one of the goals of this work is to investigate the indirect effect of PIED on employees' KSB through PsyCap. It is postulated that PsyCap mediates the PIED-KSB link.

A theoretical support for this proposition can be found in the job characteristics model of work motivation, input-process-outcomes (J. R. Hackman & Oldham, 1976). The model gives more insight into how HR practices may influence employee's work outcomes through the mediation of psychological states. Thereby, for instance, in the first stage (input), implementation of different HR practices expected to improve psychological states of employees (process) in the second stage. Outcomes (outputs) are achieved in the third stage, in terms of positive work-related behaviors. Accordingly, the current study assumes that PIED (input) will be positively associated with individuals' PsyCap (process), which, in turn, encourages KSB (output). Moreover, as mentioned before, SET can be used to explain how PsyCap mediates the link between PIED and KS. This theory assumes that when organizations invest in their employees, they are more likely to reciprocate in positive ways. In another words, PIED reflects a perceived work climate which might be conductive to the development of PsyCap of individuals. Employees reciprocate favorable treatment by engaging more in KSB. Another path, which may indirectly link PIED and KSB, is related to a sense of

belonging and identification with organization. Investment in employee development might be perceived as a message to employees that their employers value them and that the organization cares about their development and professional growth. Consequently, it has a positive effect on employees' sense of belonging to the organization, which in turn may affect employees' confidence, self-efficacy and optimistic outlook. Further, these positive psychological capacities may help individuals become more open and willing to share their knowledge or expertise. It can be concluded that PIED may generate positive conditions required for PsyCap and KSB to flourish. Based on brief literature review of PsyCap construct and PIED, we offer the following hypothesis:

Hypothesis 6: Psychological capital mediates the relationship between perceived investment in employee development and knowledge sharing behavior.

2.20. Research Questions, Research Objectives and Hypotheses

In order to analyze the proposed relationships between the different factors included in the research model, the following research questions, research objectives and hypotheses are presented in Table 2.4.

Table 2.4: Research Questions-Research Objectives-Hypothesis

Research Questions	Research Objectives	Hypotheses
RQ1: What is the relationship between PIED and KSB?	RO1: To examine the relationship between PIED and KSB.	Hypothesis 1: PIED has positive effect on employees' KSB.
RQ2: Does PsyCap mediate the relationship between PIED and KSB?	RO2: To examine the mediating role of PsyCap between PIED and KSB.	Hypothesis 2: PIED has a significant impact on employees' PsyCap. Hypothesis 3: PsyCap will positively affect employees' KSB. Hypothesis 6: PsyCap mediates the relationship between PIED and KSB.

Table 2.4 continued

RQ3: What is the role of OID on the relationship between PsyCap and KSB?	RO3: To examine how OID can moderate the influence of PsyCap on KSB.	Hypothesis 5: The positive relationship between PsyCap and KSB will be stronger at higher levels of OID and weaker at lower levels of OID.
RQ4: What is the role of OID on the relationship between PIED and PsyCap?	RO4: To examine how OID can moderate the influence of PIED on PsyCap.	Hypothesis 4: OID moderates the relationship between PIED and PsyCap.

2.21. Research Model

The current research model is based on six hypotheses. The research model with hypotheses is illustrated in Figure 2.5.

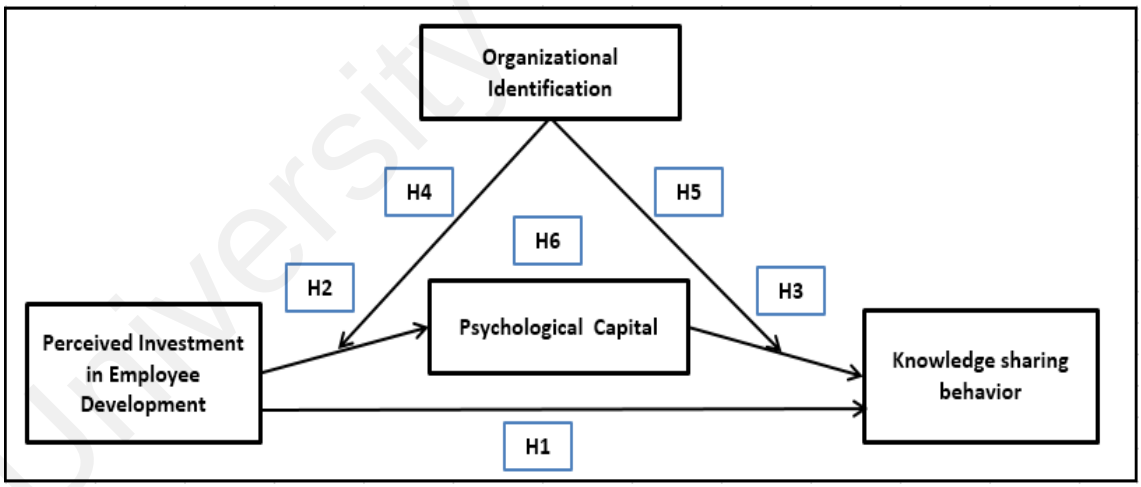

Figure 2.5: Research Model with Hypotheses

2.22. Chapter Summary

This chapter has discussed the literature review-related to this study. It began with a discussion of such terms as knowledge, KM and KSB. Next, the main theories related to KS were discussed critically. Next, this chapter highlighted different factors that may affect KSB. It also reveals several gaps in the literature that indicate the need for a comprehensive study of KSB from various viewpoints. Then, the research model and the hypotheses developed for this work were shown to be based in social exchange theory, social identity theory and positive psychology view. Two predictors of KSB were included in the research model of this research work. They are (1) perceived investment in employee development and (2) psychological capital. In addition, organizational identification is included as a moderating variable for the PIED-PsyCap-KSB relationship. In the following chapter, the research methodology will be elaborated.

CHAPTER 3. METHODOLOGY

3. 1. Introduction

Chapter 3 covers the bulk of research methodology and design which is conducted in this dissertation. Next, it provides information about the population, sample size, data collection and research instruments. Further, it continues to explain the data preparation, validity and reliability of measurement and procedures of data analysis.

3. 2. Research Design and Process

A research design is a framework, or simply a schema, for performing any research project. It includes all processes and procedures required for acquiring the data needed to solve research problems. In addition, it specifies research philosophies, appropriate strategies of inquiry and particular research methods. One of the notable research methodology scholars Malhotra (2008) asserted that good research design will guarantee that any business research is performed in an effective and efficient way. The following sections describe the three components of research design: research paradigms, research approach and research strategy.

3.2.1. Research Paradigm

Scholars like Teddlie and Tashakkori (2009) defined paradigm as 'a worldview, together with the different philosophical views associated with that point of view' (p. 84). Another author has used the concept 'mental model' in more or less similar way as a worldview (Greene, 2007). A worldview includes four concepts: epistemology, ontology, methodology and axiology (Creswell & Clark, 2007).

In philosophy, the term epistemology related to the investigation of knowledge, or how we come to know the world (Broom & Willis, 2007). Epistemology addresses the next questions: What is the relationship between the knower and what is known? How

do we know what we know? What counts as knowledge? (Erlandson, 1993; Guba & Lincoln, 1994; Klenke, 2008; Krauss, 2005).

Ontology refers to the examination of the nature of being, existence or reality in general, as well as of the basic categories of being and their relations (Davies, Fensel, & Van Harmelen, 2003; Gruber, 1993).

Methodology was specified by scholars like Somekh and Lewin (2005) as combination of methods, principles and theories by which specific research is conducted.

Lastly, axiology refers to the psychological study of values (Flew, 1999). Scholars have also argued that axiology refers more specifically 'to the role of values in inquiry' (Teddlie & Tashakkori, 2009, p. 86). By using these dimensions, these authors come up with five dominant paradigms, namely, positivism, post-positivism, constructivism, transformative, and pragmatism.

Pollock and Cruz (1999) argued that there is no perfect research paradigm. In other words, none of them could be claimed as the universal one. The quality of social research depends on using an approach that is relevant for the topic investigated (Denscombe, 2009). The more practical way in selecting the research paradigm heavily depends on what needs to be accomplished and what kinds of data are necessary to reach the goal of the research (Bryman, 2015; Denscombe, 2009).

This study takes a stance on the positivist paradigm. Arguments favoring the stance of this study are discussed next. Positivism is an epistemological perspective that supports bringing the principles and approaches of the natural sciences to the social sciences (Bryman & Bell, 2015). The selection of this view can be better understood from the perspective of Alvesson and Sköldberg (2009), Creswell (2013) and Orlikowski and Baroudi (1991). These authors have argued that specific research can be categorized if there is evidence of identifying variables and relationships, quantifiable

measures of variables, hypothesis testing and obtain reasonable conclusions regarding a phenomenon from the sample to an assured population. Further, several methods can be grouped under positivism: observations, measurements, surveys, questionnaires and case studies (Choudrie & Dwivedi, 2005).

One of the important aims of this research work is to examine the mediating role of PsyCap on the association between PIED and KSB. In order to achieve this goal, specific variables and relationships were identified. Also, hypotheses were posed and statistical analysis was used for testing hypotheses so that results would be valid and generalizable. Moreover, the structured research processes can suggest possible directions for future studies which are statistically reliable (Malhotra & Birks, 2007). This reliability can be attained with large sample size that represents the general population. Given these, the positivist paradigm seems to suits this study.

3.2.2. Research Approach

The successful accomplishment of any research project is directly linked to the choice of research method (Bryman & Bell, 2018; Saunders, 2011). The method chosen by the researcher(s) can guide the conduct of the study. Despite this, according to Mark Saunders (2011), choosing the proper methodology can be challenging due to the presence of complex approaches, techniques and procedures. The same author further reveals that deductive (more than inductive) approaches are the generally used in different research works. Some several plausible reasons why the deductive approach is more appropriate for this study are provided next. Firstly, a key feature of this approach is that concepts need to be operationalized so that data can be measured quantitatively. Secondly, the deductive approach focuses on causality, generalization, and concern for measurement and replication (Bryman & Bell, 2018). In this way, our use of a deductive approach helps us to develop a theory and propose hypotheses. The main goal of using

deductive approach is to test postulated research hypotheses through a formulation of proper research strategy. The current research work aims to test the research model and research hypotheses. Consequently, the deductive approach was used to build a final research framework for linking the organizational factors and the psychological factors with KSB.

3.2.3. Research Strategy

As mentioned before, there is no perfect research strategy. Instead, the major issues are whether the specific strategy addresses the research questions and goals and whether it meets the assumptions of selected philosophy (Saunders & Lewis, 2003). Research strategy is a detailed plan of action, which helps researchers to address the specific research questions, according to Saunders, Lewis and Thornhill (2009). The same authors further asserted that research strategies mainly consist of experiment, case study, survey, action theory, grounded theory and ethnography. Each of them has its own strengths and weaknesses.

When choosing appropriate research strategies, three conditions should be taken into account: formulated type of research question, degree of control over behavior, and extent of focus on contemporary events (Yin, 2017). However, Mark Saunders and his colleagues noted that the most critical aspect in choosing research strategy is whether it is appropriate for answering research questions (2009). The key objective of the current dissertation is to explore factors that interactively affect employees' KSB. Therefore, the survey method (along with questionnaire technique), is particularly suitable for this research. This method of data collection has been recognized as a valuable strategy in the deductive approach. Furthermore, survey method helps to answer such questions as who, what, where and how much (Saunders et al., 2009). Considering these, a survey

method was chosen due to its ability to answer the research questions. Some additional arguments why survey method is being applied are presented below.

This approach permits us to gather data from wide range of respondents in a very cost-effective way and apply the collected data to test possible relationships among variables (Saunders et al., 2009). The inclusion of standardized questions in the survey allows researchers to easily aggregate and analyze data by using quantitative methods. Together with suitable sampling technique, the obtained research results can be generalized to a broader population (Neuman & Robson, 2012). In addition, the survey approach allows the researchers to examine and identify factors and is not directly observable. Taking into account all the arguments mentioned above, the survey method was adopted for this work.

3.3. Population and Sample of Study

A sampling frame is a list or map of all population from where your sample will be obtained (Malhotra, 2008). Sampling plays a significant role in quantitative research. In order to perform statistical analysis, scholars must use an adequate number of units. Consequently, it is necessary to guarantee that the sample represents larger population (Saunders, 2011). In the current research work, the study population consists of organizational members of large business enterprises working in Kazakhstan. Companies list was obtained from the 'National Business' is the reputable magazine that yearly publishes the 'Top 300' firms of Kazakhstan (by market capitalization or turnover). The unit of analysis in this research is employees who represent these organizations. The participants were selected based on the nature of their job. Namely, the employees working in the chosen companies were knowledge workers. Knowledge workers can be defined as employee critical for generating new knowledge or developing innovation within your organization (Wang et al., 2016). Before distributing

survey, we derived from the past studies main occupations or professions recognized in the developing and developed country context as knowledge work, such as qualified-managers, engineers, information technology, etc (Jayasingam and Yong, 2013). This list was used as a common guideline in choosing research participants. However, it did not restrict as in choosing only those professions appeared in the list. In sum, the participants of this research were knowledge workers who mainly deal with information or require knowledge in their work.

Sampling techniques can be subdivided into two categories: probability and non-probability sampling. These two techniques differ in terms of whether all units in the population have the same probability of being selected or not. The probability sampling is often taken to be the 'gold standard' mainly due to the fact that it guarantees the chosen participants are representative of the population (Lee & Lings, 2008). However, this method is usually impractical to perform because of time, cost and difficulty in obtaining the sample (Babbie, 2015; Malhotra, 2008).

In line with this notion, a number of research works is based on non-probability sampling convenience methods, which means that participants are selected based on ease of accessibility (Bryman et al, 2018). This method has strengths in terms of efficiency and cost. However, generalizability of the results to the general population is limited. Therefore, it is required to ensure that the chosen population can give valuable information about the research question (Lee & Lings, 2008).

Given that, the number of large industrial companies operating in Kazakhstan is very large and there are time and cost limitations. Thus, carry out a survey on all large organizations in Kazakhstan would not be feasible. In an attempt to address these limitations, a convenient sampling method was proposed by several scholars (Bryman, 2015; Zikmund, Babin, Carr & Griffin, 2013). Finally, a significantly higher response rate can be achieved by applying convenient sampling technique.

3.4. Sample Size

Sample size is another important consideration. An adequate sample size is crucial to ensure statistical significance of results (Wolf, Harrington, Clark & Miller, 2013). On another hand, too small of a sample size may have an effect on outcomes of exploratory and confirmatory factor analysis (Tabachnick & Fidell, 2007). Large sample size may help to eliminate sample specific problem (Schwab, 1978), potential sampling error and more accurately reflect population values. On another hand, a large sample size is usually time-intensive and expensive (Stone, 1978). As a result of above discussion, it can be asserted that 'using an adequate sample will result in more reliable, valid, and generalizable result' (Barlett, Kotrlik, & Higgins, 2001, p. 50).

For applying SEM method, it is generally accepted to have a sample size of about 100 to 150 respondents (Anderson & Gerbing, 1988). However, the same authors further argued that large sample size might increase the precision of estimates of the model. Other researchers claimed that sample size should be at least 100 (Barlett et al., 2001). A numerous notable researchers have advised that the minimum necessary sample size for SEM should be within the range of 100 and 150 (Kline, 2015; Schumacker & Lomax, 2004). Some scholars have also noted that 100 is the minimum sample size for models having five or less variables (Hair et al. 2012). The similar researchers further confirmed that the variables should have more than three items. In the case of seven or less variable in the model, the minimum sample size should be 150 in the case when communalities are moderate at 0.5.

Other generally recognized method to define the right sample size is item to-response ratios. More specifically, general suggestions for item-to-response ratios have varied from 1:4 (Rummel, 1970) to at least 1:10 (Schwab, 1980), but mostly recognized is the ratio of 1:5 (Hair et al., 2012). In the current research, the research model has four

variables: two independent variables involving nineteen items; 12 for PsyCap, 7 for PIED and 6 for one moderating variable (OID). Hence, there are 25 items (25 x 5 = 125), namely, 125 samples are more than enough to perform the SEM. In this study, with 240 responses, the sample of the current research is evidently above all suggested threshold size and hence these respondents are accepted sufficient or worth enough by the power estimation.

3.5. Research Instruments Development

(a) ***Development of Research Instruments***

In this research, systematic method was used to design and develop constructs of the study. An extensieve and thorough literature review helped to build foundation for the operationalization of the study or variables. All instruments of this study obtained from well-established and validated measurement instruments. Particularly, all measurement items of this study were adopted from the scales which are properly validated in such social fields as HRM and KM.

Some scholars have advised to utilize hierarchical latent variable models rather than models solely comprised from lower-order variables (Johnson, Rosen, Djurdjevic & Taing, 2012). The advocates of using higher-order constructs have asserted that it enables us to get more theoretical parsimony and reduce comprehensiveness of the (Wetzels, Odekerken & Van Oppen, 2009). Also, it is worthwhile to state that theory should be used as criteria for defining and operationalizing multidimensional concepts (Johnson et al., 2012). However, some scholars have emphasized more on the structural model, rather than focus on the link between measures and their respective latent factors (Jarvis, MacKenzie, & Podsakoff, 2003). Jarvis and colleagues further argued that this narrow view has pushed researchers to assess all constructs equally, without taking in consideration their formative or reflective nature. In reality, the links between the

constructs and their indicators should be regarded as hypotheses that need assessment along with structural paths. Therefore, the misspecification of the formative and reflective constructs can increase type I and type II errors, which further inhibit theory building (Jeffrey Edwards & Bagozzi, 2000). In order to deal with these issues, Jarvis and colleagues summarized the key decision rules to decide whether measurement model is more likely to be formative or reflective (Table 3.1) (2003). Based on these decision rules criteria, the author determined whether each construct is formative or reflective.

Table 3.1: Decision Rules to Identify Construct as Formative or Reflective

Criteria	Formative model	Reflective model
1. Direction of causality from construct to measure implied by the conceptual definition. Are the indicators (items) (a) defining characteristics or (b) manifestations of the construct? Would changes in the indicators/items cause changes in the construct? Would changes in the construct cause changes in the indicators?	• Direction of causality is from items to construct • Indicators are defining characteristics of the construct • Changes in the indicators should cause changes in the construct • Changes in the construct do not cause changes in the indicators	• Direction of causality is from construct to items • Indicators are manifestations of the construct • Changes in the indicator should not cause changes in the construct • Changes in the construct do cause changes in the indicators
2. Interchangeability of the indicators/items. Should the indicators have the same or similar content? Do the indicators share a common theme? Would dropping one of the indicators alter the conceptual domain of the construct?	• Indicators need not be interchangeable • Indicators need not have the same or similar content/ indicators need not share a common theme • Dropping an indicator may alter the conceptual domain of the construct	• Indicators should be interchangeable • Indicators should have the same or similar content/ indicators should share a common theme • Dropping an indicator should not alter the conceptual domain of the construct
3. Covariation among the indicators. Should a change in one of the indicators be associated with changes in the other	• Not necessary for indicators to co-vary with each other • Not necessarily	• Indicators are expected to co-vary with each other • Yes

Criteria	Formative model	Reflective model
indicators?		
4. Nomological net of the construct indicators Are the indicators/items expected to have the same antecedents and consequences?	• Nomological net for the indicators may differ • Indicators are not required to have the same antecedents and consequences	• Nomological net for the indicators should not differ • Indicators are required to have the same antecedents and consequences

Source: adopted from Hair et al. (2011)

(b) ***Dependent, Mediating, Moderating and Independent Variables Measurement***

Our research includes four types of variables, such as independent (PIED), dependent (KSB), mediating (PsyCap) and moderating (OID). Accordingly, all the measurement items were taken from previous relevant studies. Except for demographic variables, a five-point Likert scale was used to measure all research variables.

(c) ***Perceived Investment in Employee Development***

Based on previous studies, PIED relates to employees' perception of their companies dedication to employees' personal and professional growth (Lee & Bruvold, 2003). In this study PIED was measured with a seven-item scale initially proposed by Lee and Bruvold (2003) and further adapted by Kuvaas and Dysvik (2009a). The reason why Kuvaas and colleagues developed their own scale was that they wanted to evaluate employees' perception of the company's dedication to invest in their staff, rather than their perception of specific HRD practices.

The instrument is scored by a 5-Likert scale, from 'strongly agree' to 'strongly disagree'. The items referring to PIED are as follows: (1) 'My organization invests heavily in employee development (for instance by way of training, programs and career development', (2) 'My organization stands out as an organization that is very focused on continuous development of the skills and abilities of its employees', (3) 'By way of practices such as developmental performance appraisal, counseling systems,

competence development programs and leadership development programs, my organization clearly demonstrates that it values development of the skills and abilities of its employees', (4) 'By investing time and money in employee development, my organization demonstrates that it actually invests in its employees', (5) 'I'm confident that my organization will provide for the necessary training and development to solve any new tasks I may be given in the future', (6) 'I definitely think that my organization invests more heavily in employee development than comparable organizations' and (7) 'My organization is effective in meeting employees' requests for internal job transfers'.

Based on the decision rules, the assessment of PIED based on the decision rules are shown in Table 3.2. Consistent with past research, the current work will view PIED as first-order reflective construct (Kuvaas & Dysvik, 2009a).

Table 3.2: Decision Rules to classify PIED as Formative or Reflective

Criteria	**Construct Analysis**	**Decision**	
		Formative	**Reflective**
Rule1: Direction of causality from construct to measure implied by the conceptual definition	Perceived investment in employee development measures are considered manifestations of the construct, thus changes in the item will not cause change in the construct.		√
Rule2: Interchangeability of the indicators/items	All measurement items are interchangeable; all the items have the same content. In addition, dropping one of the measures will not affect the meaning of the construct.		√
Rule3: Covariation among the indicators	The indicators co-vary with one another.		√
Rule 4: Nomological net of the construct indicators	All the indicators would have the same antecedents and consequences, as all of them reflect the same content.		√
Final Decision	Perceived investment in employee development is a first-order reflective construct.		√

(d) ***Psychological Capital***

In this research work, psychological capital is defined as the individuals' positive state-like psychological resources comprised of four capacities (Luthans et al., 2007).

To operationalize and measure perceptual level of PsyCap, this research used a PsyCap questionnaire that had 12 items (PCQ-12) which has been slightly modified and reduced from the 24-item instrument developed by Luthans and colleagues (2007). This shorter, 12-item instrument was developed by Avey and colleages in 2008 and used a 5-point Likert-type scale ranging from 'strongly agree' to 'strongly disagree'. The 12-item PsyCap questionnaire consist of 3 items for efficacy, 3 items for resilience, 4 items for hope and 2 items for optimism. The measurement of PsyCap include such items as: (1) 'I feel confident in representing my work area in meetings with management', (2) 'I feel confident contributing to discussions about the company's strategy', (3) 'I feel confident presenting information to a group of colleagues', (4) 'If I should find myself in a jam at work, I could think of many ways to get out of it', (5) 'Right now I see myself as being pretty successful at work', (6) 'I can think of many ways to reach my current work goals', (6) 'At this time, I am meeting the work goals that I have set for myself', (7) 'I can be "on my own," so to speak, at work if I have to', (8) 'I usually take stressful things at work in stride', (9) 'I can get through difficult times at work because I've experienced difficulty before', (10) 'I always look on the bright side of things regarding my job', (11) At the present time, I am energetically pursuing my work goals (12) 'I'm optimistic about what will happen to me in the future as it pertains to work'.

In this research, PsyCap is conceptualized as the second-order formative construct consisting of four first-order reflective dimensions (self-efficacy, hope, optimism and resilience), based on the decision rules and variable measures analysis presented in Table 3.3.

Table 3.3: Decision Rules to Classify PsyCap as Formative or Reflective

Criteria	Construct Analysis	Decision	
		Formative	Reflective
Rule1: Direction of causality from construct to measure implied by the conceptual definition	Psychological capital construct dimensions (self-efficacy, hope, optimism, and resilience) are defining the characteristics of the construct, thus changes in the dimensions will cause change in the construct, and the change in the construct will not affect the dimensions.	√	
Rule2: Interchangeability of the indicators/items	The four dimensions are not interchangeable, the dimensions are different from each other; they are not representing the same content (e.g., hope is distinct from resilience). Dropping any of the dimensions alters the conceptual domain of the construct.	√	
Rule3: Co-variation among the indicators	The four dimensions do not co-vary with each other, e.g., improvement in the hope items will not affect the resilience.	√	
Rule4: Nomological net of the construct indicators	Each dimension would have the different antecedents and outcomes, as all of them reflect the different content.	√	
Final Decision	Psychological capital is a second-order formative construct.	√	

Source: adopted from Hair et al. (2011)

(e) ***Organizational Identification***

In this study, OID is defined as an employee's feeling of 'oneness' with the organization (Mael & Ashforth, 1992). OID was measured with six items on a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. The OID measurement scale was developed, tested and validated by scholars such as Mael and Ashforth (1992). In a meta-analysis, Riketta asserted in 2005 that the scale developed by Mael and Ashforth was the most commonly used.

This instrument is consisted of six questions: (1) 'When someone criticizes my organization, it feels like a personal insult', (2) 'I'm very interested in what others think about my organization', (3) 'When I talk about my organization, I usually say "we" rather than "they"', (4) 'My organization's successes are my successes', (5) 'When someone praises my organization, it feels like a personal compliment' and (6) 'I act like a person of my organization to a great extent'.

The analysis of OID measures based on the decision rules is shown in Table 3.4. Consistent with previous research, this study will regard OID as a first-order reflective construct.

Table 3.4: **Decision Rules to classify OID as Formative or Reflective**

Criteria	Construct Analysis	Decision	
		Formative	Reflective
Rule1: Direction of causality from construct to measure implied by the conceptual definition	Organizational identification measures are considered manifestations of the construct, thus changes in the item will not cause change in the construct.		√
Rule2: Interchangeability of the indicators/items	All measurement items are interchangeable; all the items have the same content. In addition, dropping one of the measures will not affect the meaning of the construct.		√
Rule3: Co-variation among the indicators	The indicators co-vary with one another		√
Rule4: Nomological net of the construct indicators	All the indicators would have the same antecedents and consequences, as all of them reflect the same conceptual meaning.		√
Final Decision	Organizational Identification is a first-order reflective construct.		√

Source: adopted from Hair et al. (2011)

(f) ***Knowledge Sharing Behavior***

A seven-item scale was constructed and developed to measure individuals' KSB. Questionnaire items used to assess KSB were developed based upon the research of Lee (2001) and Bock and colleagues (2005). The internal reliabilities presented by Lee for explicit KS and implicit KS were 0.901 and 0.758 respectively. In addition, the reliabilities shown by Bock and colleagues are 0.93 for implicit KS and 0.92 for explicit KS. The measures developed based on Bock's intention to share scale items were slightly modified to more accurately represent actual KSB. For this goal, the words 'I will' or 'I intend' in the original items were changed with 'I often' or 'I frequently' (Jo and Joo, 2011). The six items referring to KSB are as follows: (1) 'I often share my experience (know-how) from work with other organization members', (2) 'I often share my expertise from my education or training with other organization members', (3) 'I frequently share factual knowledge (know-what) from work with my co-workers', (4) 'I often share business knowledge about the customers, products, suppliers and competitors with my co-workers', (5) 'I often share my work reports and official documents with members of my organization' and (6) 'I frequently provide my manuals, methodologies and models for members of my organization'.

Table 3.5: Decision Rules to Classify KSB as Formative or Reflective

Criteria	Construct Analysis	Decision	
		Formative	Reflective
Rule1: Direction of causality from construct to measure implied by the conceptual definition	Organizational identification measures are considered manifestations of the construct, thus changes in the item will not cause change in the construct.		√
Rule2: Interchangeability of the indicators/items	All measurement items are interchangeable; all the items have the same content. In addition, dropping one of the measures will not affect the meaning of the construct.		√
Rule3: Co-variation among the indicators	The indicators co-vary with one another.		√
Rule4: Nomological net of the construct indicators	All the indicators would have the same antecedents and consequences, as all of them reflect the same conceptual meaning		√
Final Decision	Knowledge sharing behavior is a first-order reflective construct.		√

Source: adopted from Hair et al. (2011)

The analysis of KSB measures based on the decision rules is shown in Table 3.5. Consistent with previous research, this study will regard KSB as a first-order reflective construct.

3.6. Data Collection

Since this research is based on quantitative methodology, data was gathered by self-administered questionnaire, which is recognized as one of the most commonly used instruments in this research area. The survey was conducted in three major cities of Kazakhstan, namely Almaty, Astana and Atyrau. These three main cities were selected due to being home to the headquarters of a number of large international and local companies. Three research assistants were recruited to help the researcher to gather necessary data. Since the research assistants were from three main cities where the

survey was carried out, selected cities were distributed among them. The research assistants were students from university located in Almaty city and they received a short training preparing them for the collecting questionnaire from employees.

The data were gathered over several months. In the first month, the questionnaires were distributed by researcher to employees of companies in Almaty, followed by Atyrau and lastly Astana. Then research assistants only collect filled questionnaires forms. This approach helped the researcher to better monitor and guide research assistants in accomplishing their tasks. These procedures were conducted in order to obtain higher response rate. Lastly, research assistants were monitored carefully by the researcher by calling them regularly.

All the questionnaires used in this study were in Russian (the language of business in Kazakhstan). In order to minimize the bias in the questionnaires, survey questions were reviewed with English-speaking research colleagues to ensure that questions were not leading or suggestive in any way. In order to verify the equivalence of meaning between two versions of the instrument, back-translation was performed (Brislin, 1970).

In order to effectively accomplish this task, four steps were followed:

Step 1: The researcher and industry expert translated survey questions (from English to Russian language).

Step 2: The survey questions were translated by two independent bilingual translators.

Stage 3: After careful review, several questions were slightly modified to improve clarity.

Stage 4: To check for differences between the Russian version and the original questionnaire, another independent bilingual translator was requested to perform back-translation (from Russian back to English).

Moreover, one of the professors, an expert in the English language, was requested to compare and revise original and back-translated questions. All required adjustments have been made accordingly. Lastly, the translated version of the questionnaire was further discussed with HR experts who had experience in HRM and KM field. Their views were taken into consideration as well. Then, final slight modifications were made accordingly to the translated version of the questionnaire.

3.6.1. Pilot Study

In order to detect any potential problems relevant to the chosen instrument for the research, it is necessary to do pre-testing of these instruments on a small group (Kim, 2011). Running a pilot test can benefit researchers in terms of providing advance signals about where the main research could go wrong (Van Teijlingen, Rennie, Hundley & Graham, 2001). Other researchers have argued that running a pilot test is important to properly identify any ambiguity or bias in the survey questions (Babin & Zikmund, 2015).

This pilot study was conducted to reveal any possible limitations or problems in the design of the survey questions. Moreover, it was required to explore the capability of the pilot test to obtain necessary responses from the target population. The pilot test questionnaires were completed and returned by twenty industry professionals and five academics.

Each participant was requested to assess the clarity, appropriateness, and applicability of the survey questions. Accordingly, several changes were done to the questionnaire to simplify wording, eliminate ambiguous or confusing items, and refine the format. The data collected from pilot study was compiled and transferred to an SPSS data file and assessed for consistency and accuracy. Based on the arguments above and

with the use of SPSS software, the reliability test was applied to the data. Table 3.6 reports the reliability test results.

Table 3.6: **Pilot Test Reliability Results**

Measures	No. of Items	Cronbach Alpha	Composite Reliability
Knowledge Sharing Behavior	10	0.795	0.895
Psychological Capital	12	0.897	0.899
Perceived Investment in Employee Development	9	0.834	0.902
Organizational Identification	9	0.902	0.827

The measurement scale items of this research were adapted from past studies. Reliability analysis was performed by running IBM SPSS 21 software. According to the rule of thumb, a reliability coefficient varying from 0.6 to 0.7 is regarded as sufficient at initial stages of investigation and a value that exceeds 0.8 is regarded as a good reliability (Nunnally, 1978).

As it is shown in Table 3.6 the reliability values of all variables of this research work were above the suggested threshold of 0.7 (Nunnally & Bernstein, 1994). Consequently, the internal consistency reliability of all measures can be accepted as very good.

3.7. Data Preparation for Data Analysis Data Coding

Data coding is a systematic procedure of matching numerical values or numbers to responses to the survey. In another words, it is the step where information is converted into values suitable for computer entry and analysis. Due to the fact that there are no open-ended questions, a simple method of coding questions was used in this study (Table 3.7).

Table 3.7: Coding of the Data

Variable	Coding	No. of Items
Knowledge Sharing Behavior	KSB	6
Psychological Capital	PsyCap	12
Organizational Identification	OID	6
Perceived Investment in Employee Development	PIED	7

3.7.1. Data Editing

Data editing is a set of procedures used to check data for the mistakes such as missing data or blank pages of questionnaire. This technique is important for data analysis to make sure that the raw data complies with the acceptable standards. Editing is used once the data gathering process is finished in order to detect any errors or omissions. Further, it helps to corrects them and certify that certain data quality standards are met (Joseph Hair, Tatham, Anderson & Black, 2006). Then it requires defining all labels for each of the items and constructs and transferring the data to statistical software. In this research, initial data entry was performed using SPSS software. During the stage of editing, initial data were processed with a special care. Further, a special numerical score was given to all study factors and measurements and the data were carefully entered into statistical package. Lastly, transferred data were carefully screened and checked for missing data.

3.7.2. Data Cleaning and Screening

Data cleaning, screening and checking are vital techniques, which in this research were performed after the data was transferred to a data file. Furthermore, the goal of these techniques is to ensure that data had been transcribed accurately by addressing missing data and determining outliers and inconsistent responses (Malhotra & Birks, 2007). Any failure in data cleaning and screening may cause a negative effect on data and the results of statistical tests. Therefore, these processes play a crucial role in data

analysis (Joseph Hair et al., 2008). In the current work, frequency distributions were carried out by using SPSS Statistics 21 for each construct to check for outliers and missing data. First of all, several cases with invalid responses were identified and corrected. Incomplete and unusable questionnaires were eliminated from the data set. Hereinafter, all missing (5) responses were excluded from analysis. To filter and clean the data, frequency analysis is performed to assess whether or not the answers' range is correct.

3.8. Validity

As a broader concept, validity includes such concepts as internal and external validity. The first one refers to the ability to demonstrate that observed correlations are causal, while the second one defined as the generalizability of findings to other populations (Roe & Just, 2009). Furthermore, there are three types of validity, namely, face validity, content validity and construct validity. As aforementioned, validity types will be presented in the sections below.

3.8.1. Face Validity

Face validity is regarded as the simplest as well as the weakest form of validity. It simply identifies whether the investigator subjectively believes that the instrument measures what it intends to measure. In addition, it determines whether the items of the questionnaire are clear and understandable to the respondents (Bryman & Bell, 2018). Consequently, in order to check face validity, the initial questionnaire was discussed and evaluated by twenty industry experts and five academic staff. Moreover, two key factors may also influence the validity of the questionnaire. The first is related to the relevance of the topic to the respondents and the second is related to the confidentiality of the questionnaire by ensuring the respondents' anonymity. So, for the

aforementioned objectives, individuals from both academic and industry backgrounds were considered as valid respondents. In this research, during the time of data gathering, all required information about the nature and goals of this study were given to these respondents. Moreover, in order to ensure research validity, the researcher protected respondents' anonymity.

3.8.2. Content Validity

Content validity relates to the degree that the items cover the content that the instrument is supposed to measure (Bryman et al., 2018). There are two different methods that can be used to ensure content validity is maintained. The first one refers to the literature and previous studies and the second one to the validity assessment, like expert judgment validity. In this respect, several steps were followed to establish the content validity of the instrument. In the current research work, all of the questionnaire items were used and validated by prior investigators. Consequently, the questionnaire was designed based on a deep literature analysis. After compiling the first draft of the questionnaire, five experts were requested to evaluate and comment on the questionnaire items to ensure acceptable content validity. Three of those experts were academic staff with research expertise in such areas as OB, HRM and KM. Two of the industry experts had more than ten years of experience in HRM. Accordingly, an initial draft of the survey questions was revised by these industry and academic experts.

3.8.3. Construct Validity

Construct validity defined as whether instrument taps the concept as theorized (Sekaran & Bougie, 2016). This useful concept can be divided into two sub-categories, convergent and discriminant validity, both of which are discussed below.

3.8.4. Convergent Validity

Convergent validity evaluates the degree to which two measures of the same phenomenon are distinct. More specifically, it is determined when the values given by two dissimilar instruments measuring the same construct are highly correlated. Several approaches can be used to assess convergent validity among item measures. One of the most widely used methods for assessing convergent validity is factor loading. Particularly, high loading on a factor would point out that they converge on a common factor. On the other hand, all indicator factors loading should be statistically significant to treat it as a minimum of convergent validity. According to general rule of thumb, each factor loading should be at least 0.50. Additionally, the ideal criterion has been regarded as 0.7 or higher (Hair et al., 2010).

Average variance extracted (AVE) is another useful estimate of the convergent validity. The AVE can be calculated as the mean variance extracted for the items loading on a latent variable (Hair et al., 2010). In the current dissertation, AVE is determined by the following formula:

$$\text{AVE} = \frac{\lambda_i^2 \, Var(X)}{\lambda_i^2 \, Var\ X + \ Var\ \varepsilon_i}$$

An AVE value, which is higher than 0.5, indicates that the latent variables have high convergent validity (Hair et al., 2010). Following the rule of thumb for AVE is reported in Table 3.8.

Table 3.8: AVE Thresholds

AVE	Indicator
0.5 or more	Adequate convergence
Less than 0.5	Not acceptable (error explains the variable more than the variance)

Source: Hair et al., (2010)

The AVE is used to assess convergent validity, which reflects the average communality for each latent construct. As it can be observed from the table above, the AVE should be higher than 0.5 to ensure construct validity.

3.8.5. Discriminant Validity

This type of validity relates to the extent to which measures of theoretically dissimilar variables do not correlate highly with one another. In other words, discriminant validity is established when the construct is unique and not a reflection of other variables (Joseph Hair et al., 2010). In this research, correlation and AVE methods were applied to measure the discriminant validity. Particularly, to assess this validity, the Fornell and Larcker (1981) test was applied. This method was established on the notion that a latent variable should better explain the variance of its own indicators than the variance of other latent variables. Then, in measuring discriminant validity, AVE and cross-loading methods could be used. The Fornell and Larcker criterion is met when the AVE of each latent construct is greater than the construct's highest square correlation with any other construct. This idea is the same as comparing the square root of the AVE with the correlations among constructs. The measurement of discriminant validity in this research demonstrated that the square root values of AVE for each variable are larger than the correlation with other variables. It means that all constructs of this research are distinct from each other.

Recently, Henseler, Ringle, and Sarstedt (2015) suggested an alternative method to assess discriminant validity. Specifically, the heterotrait-monotrait ratio of correlations (HTMT) was proposed as a more stringent method for evaluating discriminant validity. HTMT refers to the ratio of correlation between latent variables. There are two ways of using HTMT as a criterion to evaluate discriminant validity. First, using HTMT as a criterion includes comparing it to predetermined threshold values. The literature

recommends that the HTMT value should be below 0.85 or 0.90 to ensure discriminant validity (Kline, 2015; Teo, Srivastava & Jiang, 2008). Second, Hensler and colleagues (2015) have argued that when using HTMT as a statistical test, the aim is to evaluate the HTMT inference. The evidence of discriminant validity exists when the confidence interval of HTMT values for the structural paths comprises the value of 1.

3.9. Reliability

The reliability of a measure relates to the degree to which the measure produces consistent and repeatable results. Therefore, it can help to evaluate the 'goodness' of a measure. In this research work, the reliability was assessed by using Cronbach's Alpha and Composite Reliability scores. Responses from the pilot test were used to establish the reliability of the measurements. The outcomes of the reliability tests are reported in Table 3.6. The SmartPLS 3 software was utilized to calculate Cronbach's Alpha and composite reliability for each variable individually, which can be found in Table 3.6.

3.10. Assessment of Multivariate Assumptions

The questionnaire of this research considers three types of measurements: nominal, ordinal and ratio. The results of each findings described in descriptive statistics, hypotheses testing and related analyses. All variables (independent, dependent, mediating and moderating) were measured by the ordinal data, using five-point Likert scale. The socio demographic factors include personal and professional data. The section of personal professional data consists of age, gender, educational level, working experience, company size, and company category and working position.

3.11. Statistical Techniques

The analysis of the data was carried out with the use of two software tools: statistical package SPSS version 21.0 and SEM using partial least square (PLS) version three. Descriptive and inferential statistics were analyzed by using both software tools. However, SEM-PLS was applied to test the hypothesized relationships.

3.11.1. Structural Equation Modeling

The data analysis was done with the use of Structural Equation Modeling (SEM).This approach seems to be an appropriate method for data analysis since it can evaluate the measurement model and the theory model simultaneously (Chin, 1998b). This statistical technique is also known as a powerful method, which helps to build a model of relationships between observed variables (Hayduk, 1987). In addition, the use of SEM will help researchers to more thoroughly understand the interrelationships among independent variables and build better models. Additionally, SEM is considered as a suitable statistical method for analyzing causal relationships among latent variables (Fomell, 1982).

There are a number of SEM software packages available today, including AMOS, LISREL, Mplus and PLS. In this work, Partial Least Square (PLS) was selected for analyzing data. PLS is distinct as it simultaneously models measurement paths and structural paths (Ringle, Wende, & Will, 2005). Another reason why PLS was preferred by many researchers is that it is not limited by distribution requirements or sample size restrictions (Chin, 1998a). Lastly, in this study PsyCap was viewed as a formative construct and according to Hair et al., (2011), if formative constructs are part of the structural model, PLS-SEM is suggested.

In the past decades, a covariance-based SEM (CB-SEM) using AMOS statistical program has been extensively applied in business and social research (Hair, Ringle &

Sarstedt, 2011). The same authors further argued that recently, Partial Least Square SEM (PLS-SEM) has started to be largely used in business studies. The Table 3.9 displays a list of advantages of PLS-SEM over CB-SEM. The rules of thumb for choosing each method are reported as well (Hair, Ringle & Sarstedt, 2011).

Table 3.9: Rule of Thumb for CB-SEM or PLS-SEM Selection

Research Goal	It is suggested to select PLS-SEM, if the purpose of the study is determining main target constructs; It is proposed to select CB-SEM, if the purpose of the study is theory testing, theory confirmation, or comparing various theories; It is recommended to select PLS-SEM, if the research is exploratory or an extension of an existing structural theory.
Measurement Model Specification	If formative constructs are part of the structural model, PLS-SEM is selected. Note that formative measures can also be used with CB-SEM but doing so needs accounting for relatively comprehensive and limiting specification rules.
Structural Model	It is recommended to select PLS-SEM, if the structural model is complex; CB-SEM is selected while the model is non-recursive.
Data Characteristics and Algorithm	If the data is appropriate and set with the CB-SEM assumptions exactly, such as distributional assumptions with respect to the minimum sample size, then select CB-SEM; else, PLS-SEM is a worthy approximation of CB-SEM results. Sample size considerations: If the sample size is relatively low, select PLS-SEM. With large data sets, CB-SEM and PLS-SEM results are similar, provided that a large number of indicator variables are used to measure the latent constructs (consistency at large). PLS-SEM minimum sample size should be equal to the larger of the following: (1) ten times the largest number of formative indicators used to measure one construct or (2) ten times the largest number of structural paths directed at a particular latent construct in the structural model. If the data are to some extent non-normal, use PLS-SEM; otherwise, under normal data conditions, CB-SEM and PLS-SEM results are highly similar, with CB-SEM providing slightly more precise model estimates. If CB-SEM requirements cannot be met (e.g., model specification, identification, non-convergence, data distributional assumptions), use PLS-SEM as a good approximation of CB-SEM findings. CB-SEM and PLS-SEM findings should be same. If not, check the model specification to ensure that CB-SEM is used in a right way. If not, PLS-SEM results are a good approximation of CB-SEM findings.
Model Evaluation	If your research needs to use latent variable scores in subsequent analysis, PLS-SEM is the right approach. If your study requires a global goodness-of-fit criterion, CB-SEM is the right approach. If you require to empirically test for measurement model invariance, CB-SEM is a right choice.

Source: adopted from Hair et al. (2011)

3.11.2. Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is considered one of the types of SEM that specifically deals with measurement models (Brown, 2014). Unlike Exploratory Factor Analysis (EFA), CFA is hypothesis driven, where all parameters of the CFA model are determined in advance. The evaluation of a measurement model includes firstly conducting a two-step SEM approach to guarantee that the quality of the research model is determined before analyzing the structural model (Anderson & Gerbing, 1988). According to Kline (2015) the measurement model involves performing CFA and model fit to ensure that the indicators load onto their expected factors. This analysis established whether commonly recognized criteria for validity (discriminant and convergent) and reliability of latent constructs were met. In addition, the measurement model as an integral part of SEM was tested to examine whether the observed variables appropriately represent the latent constructs (Brown, 2014).

3.11.3. Level of Significance

In the current study, the level of significance for all analyses was set up at $p < 0.05$. In this way, if p-value is less than α, the null hypothesis will be rejected and if p-value is more than α, the null hypothesis will not be rejected. It also should be stated that the smaller level of α such as 0.01 or 0.001 was not chosen due to the increased risk of Type II error and less statistical power. In the field of social sciences, the conventionally used level of significance is 0.05 comparing with applied science such as medicine or health, where widely used level of significance is 0.01 or 0.001.

3.11.4. Moderation Analysis in PLS

A moderating effect, or 'interaction' effect, occurs when the link between the independent variable and the dependent variable changes as a function of an external

factor (Baron & Kenny, 1986; Hines, Hungerford & Tomera, 1987). In other words, moderating effects, which are usually named 'moderator variables', are induced by factors whose variation affects the strength of a relationship between dependent and independent variables. Due to the fact that moderation analysis is conducted using PLS, it should be noted that the relationship of PLS path modeling describes a moderated relationship within the structural model.

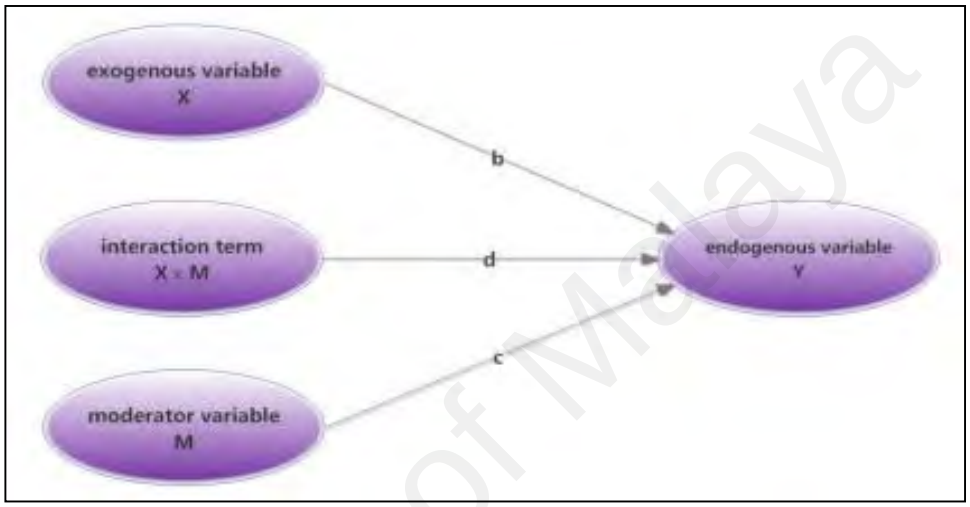

Figure 3.1: Testing Moderating Effects

As reported in Figure 3.1, the estimated path coefficient b explains the relationship between independent and dependent variables when the moderator variable is equal to zero.

The path coefficient d of the interaction term shows the degree to which the relationship between the predictor and dependent variable varies depending on the level of the moderating variable (Henseler & Fassott, 2010). Moreover, standardized variables are necessary for the interaction term. Drawing from Cohen's research, it is proposed to calculate the effect size F2 with the formula below (1988, pp. 410-414):

$$f^2 = \frac{R^2_{model\ with\ moderator} - R^2_{model\ without\ moderator}}{1 - R^2_{model\ with\ moderator}}$$

This research uses the difference in R-square to evaluate the overall effects size (F2) for the interaction; the values of 0.02, 0.15 and 0.35 are generally considered as small, moderate, and large effects respectively (Cohen, 1988). However, the low effects size (F2) does not necessarily imply that the underlying moderator effect is negligible: 'Even a small interaction effect can be meaningful under extreme moderating conditions, if the resulting beta changes are meaningful, then it is important to take these conditions into account' (Chin, Marcolin & Newsted, 2003, p. 211).

3.11.5. Mediation Analysis in PLS

(a) ***The Mediating Effect and Baron and Kenny's Procedure and Beyond***

The key feature of a mediating effect is that it includes a third variable that links the independent and dependent variables (see Figure 3.1). Figure 3.2 and Figure 3.3 display the total effect of c on the causal relationship between X and Y as well as an indirect effect a × b through M on Y. Thereby, we emphasize on how X will affect Y by an intervening variable M, when we test mediation hypotheses (Baron & Kenny, 1986).

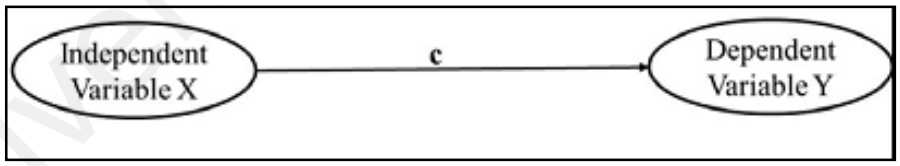

Figure 3.2: Simple Cause-Effect Relationship

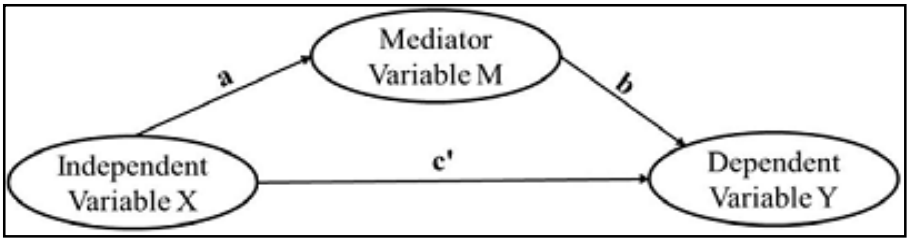

Figure 3.3: General Mediation Model

A number of researchers followed a procedure advised by Baron and Kenny (1986) for multiple regression analysis in PLS. However, their approach for examining mediation has recently been challenged on a number of grounds by several scholars (Preacher & Hayes, 2008; Zhao, Lynch & Chen, 2010). They called for reconsideration of this approach and recommend applying new methods. For instance, some authors asserted that Baron and Kenny's (1986) first requirement for mediation that X required to display a significant effect c on Y in the first step, should not be a key assumption for the occurrence of mediation. At first, it seems needless to further examine mediation, if there is no effect c. But such assumption is only valid for complementary mediation (Zhao et al., 2010), which is the situation only when path c has the similar effect direction (i.e., positive or negative) as that of the indirect path a × b. This criterion is no longer valid for competitive mediation, where the effect of the indirect route (path a × b) differs from that of path c. Therefore, in this study, the advice of Zhao and colleagues (2010), Preacher, and Hayes (2008) was followed to test mediation effect.

3.12. Ethical Considerations

At the data collection stage, respondents' names were not recorded and all information was kept confidential to protect their privacy. Moreover, the survey questionnaire had a cover letter that comprises instructions on answering the questionnaire and statements of assurance that explains the confidentiality and anonymity of the participants.

3.13. Common Method Bias and Non-response Bias

In the present study, the researcher has tried to minimize common method bias by following several suggestions offered by Podsakoff, MacKenzie, Lee and Podsakoff (2003). Specifically, this bias may arise when data are self-reported and obtained from

similar sources. These authors further argued that common method variance can have a sizable effect on the observed links between dependent and independent variable in organizational research.

The current research work considers major issues with measurement of predictor and criterion variable in order to lessen the chance of common method bias. First, measurement of dependent and independent variables at the different time points could provide a better causal explanation. However, as the current research work employed a cross-sectional research design, both dependent and independent variables were measured at the same time due to difficulties in collecting longitudinal data in this research setting. Second, a possible procedure meant to reduce common method bias is to obtain measurement of the dependent variable from different sources (Podsakoff et al., 2003). However, because of time and resource limitations it was not practical to perform such analysis.

To alleviate concerns related to common method bias, several steps offered by Podsakoff and colleagues were followed (2003). Firstly, procedural processes like protecting anonymity of participants or counterbalancing question order were employed in this study. To reduce test anxiety, the instructions emphasized that there were no right and wrong answers. Furthermore, dependent variable measured in a different scale to deal with similar measurement issues. Consequently, this study used 7- and 5-point Likert scales ranging from 1 (‘strongly disagree’) to 7 (‘strongly agree’) as well as semantic differential scales, including some reverse-coded items. Namely, respondents were asked to rate independent (PIED), mediating (PsyCap) and moderating variables (OID) on questionnaire items ranging from 1 (‘strongly disagree’) to 5 (‘strongly agree’); for the KSB (dependent variables) measurement, 7-point Likert scales were used. In sum, these methods helped this study to reduce measurement bias.

To evaluate the probability of non-response bias, t-test was carried out to see whether the non-respondent and respondent vary in different characteristics such as age, position, tenure and the sector. Our outcomes show that were no significant differences ($p > 0.05$) among the respondents and non-respondents with respect to selected parameters, it may mean that the data of this research does not create a serious issue while evaluating non-response bias. It was also checked by comparing the similar characteristics between initial and final wave of responses. The same t-test was performed and results showed that no significant difference ($p > 0.05$) between the two respondents groups when we checked for chosen parameters (e.g., age). Moreover, to decrease none-response bias employees were kindly asked to provide the official name of the firm where they work.

3.14. Chapter Summary

The current chapter reviews the research methodology, philosophical perspective, approach and methods. A number of scholars in the organizational psychology domains have applied the positivist approach. The choice of positivist perspective is well justified. Moreover, a quantitative paradigm with a survey technique was chosen as a suitable method for this work. Consequently, measurement scales for all study constructs have been adapted from previously validated measurements. The target population of this research is the employees working in large companies operating in Kazakhstan. The sample size has been carefully determined to be representative. A self-administered questionnaire was chosen after carefully considering all pros and cons. Convenience samples of 900 employees total from different companies were selected and in all, 265 completed questionnaires were sent back.

Prior to the main research, a pilot study was done in order to evaluate reliability of the measurements. In addition, this chapter has discussed the sampling rationale, measurement scale and procedures related to data analysis. Next, the process of validity analysis of the questionnaire was reported. Then the chapter is followed with a discussion of statistical techniques, ethical considerations and common method bias. The next part of the dissertation reports the outcomes of this work following the presented methods and structures in these sections.

CHAPTER 4. DATA ANALYSIS AND RESULTS

4.1. Introduction

The current chapter focuses on the statistical analysis of the study data. Overall, the present research work aims to analyze the mediating effect of PsyCap on the path between PIED on individuals' KSB, as well as to elaborate the moderating effect of OID on the PsyCap-KSB and PIED-PsyCap relationships. Therefore, statistical analysis for testing the hypotheses is reported in this chapter. In order to test hypotheses the following stages are identified:

1. Demographic and descriptive results
2. Assess the measurement model by Partial Least Square (PLS)
3. Test the structural model on PLS for the purpose of hypothesis testing
4. Mediation and moderation analysis by using PLS

4.2. Response Rate

The survey questionnaires were emailed to employees of large companies working in Kazakhstan. In total, 900 questionnaires were sent to employees and managers and 265 were filled and returned, which represents a 29% response rate. After removal of all outliers, there were 240 questionnaires ready to be analyzed, as reported in Table 4.1. With 240 responses, the sample size is above all thresholds suggested in Chapter 3 and thus respondents are considered sufficient by the power calculations.

Table 4.1: Survey Distribution

Distributed questionnaire	Returned questionnaires	%	Usable questionnaires	%
900	265	29	240	26

4.3. Demographic Analysis of Respondents

This section provides the descriptive and demographic information of the participants. This information was processed by using SPSS software. The results of descriptive statistics display the characteristics of (a) Gender, (b) Type of company, (c) Age, (d) Educational level, (e) Working experience, (f) Position and (g) Industry (H) Response rate per company.

Table 4.2: **Demographic Summary of Survey Respondents**

	Demographic Variable	Frequency	Percent
Gender	Male	103	42.9
	Female	137	57.1
Educational Background	Bachelor Degree	196	81.7
	Master/PhD Degree	44	18.3
Age	20 or under	-	-
	21- 30	140	58.3
	31- 40	81	33.8
	41- 50	12	5
	51 and above	7	2.9
Work Experience	Less than 2 years	26	10.8
	2- 5	77	32.1
	6- 10	125	52.1
	More than 10 years	12	5
Type of the company	Locally owned	73	30.4
	Joint Venture	88	36.7
	Foreign owned	79	32.9

Table 4.2 represents the demographic statistics. The table shows that 42.9% of the respondents were male, while 57.1% were female. This gender ratio is representative of Kazakhstan's demographic statistics. In terms of educational background of respondents, the most of them 81.7% are bachelor degree holders; the rest (18.3%) held a master's degree. The working tenure ranged from less than 1 year to more than 20 years. Specifically, only 2.8% of the respondents have less than one years' work experience, while 45.1% have more than two years' working experience. The majority,

52.1%, have experience between five and ten years. Only 5% have experience of more than ten years. The categorization of age reported that there is no employee below the age of 21 in the sample of this research. 58.3% are between the ages of 21 and 30, 33.8% are between 31 and 40, 5% are between 41 and 50, and 2.9% are above the age of 51. These results concur with the official statistics of Kazakhstan on age and sex structure (Kazakhstan, 2016). Ownership structure of the companies where respondents are working categorized as well. The details show that 30.4% of the companies are locally owned, while 36.7% are joint ventures and 32.9% are foreign-owned companies. The 240 respondents were from 30 companies operating in Kazakhstan. The minimum respondents per company were 5 and maximum respondents collected from one company were 10. In sum, 240 employees (between 6 and 9 person per company) were surveyed. Those 30 companies were from various sectors of Kazakhstan economy, such as such as oil and gas (main sector), mining, manufacturing, transportation as well as services, such as banking, etc.

4.4. Assessment of Multivariate Assumptions

4.4.1. Assessment of Normality

As was discussed in Chapter 3, PLS requires no clear rules 'about the population or scale of measurement' (Fornell & Bookstein, 1982, p. 443), which is definitely its distinct advantage. When using PLS for data analysis, there is no need to assess normality of distribution. However, it is one of the major considerations of multivariate techniques. In this study, normality was checked by performing skewness and kurtosis statistics. Such software as SPSS was utilized to calculate the measures of skewness and kurtosis. The generally accepted critical values are ±2.58 (at 5% significance level) and ±1.96 (at 1% significance level) (Hair et al., 2010). Consequently, Table 4.3 shows the

normality of independent, dependent, mediate and moderate variables. As reported in Table 4.3, all values for skewness and kurtosis were within recommended range of ±2.58.

Table 4.3: Normality

Construct	N	Mean	Std. Deviation	Skewness	Kurtosis
PIED	240	4.20	0.750	-1.33	-1.71
PsyCap	240	4.29	0.650	-1.19	1.19
KSB	240	4.39	0.608	-1.68	1.54
OID	240	4.33	0.641	-1.11	1.89

Note: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

4.4.2. Assessment of Multicollinearity

Multicollinearity relates to high correlation between predictor (independent) variables (Tabachnick & Fidell, 2007). The issues of multicollinearity may significantly influence the quality and the findings of the study regression model. Moreover, multicollinearity weakens the capability to establish the relative roles of each independent variable (Hair et al., 2010). Consequently, it is critical to overcome such problem.

Tolerance index (TI) and variance inflation factor (VIF) values were utilized in this work to minimize the risk of multicollinearity. TI is the degree of variability of the chosen independent variable (or factor) not predicted by the other independent. It can be obtained as the inverse of the tolerance value. It has been argued by Hair et al., (2010) that tolerance value should be less than 0.1 or VIF value must be greater than 10 to indicate certain and serious collinearity issues. The same authors further argued that if variables have high multicollinearity, one of the variables should be eliminated from further analysis. In this research, the findings of the multicollinearity test were presented in Table 4.4. Table 4.4 also reports that there are no any issues with that problem, because all required values were within an adequate range. It should be noted that

diagnosis of multicollinearity is not required in PLS because the PLS factors are orthogonal. However, this research was conducted through PLS and it is exempt of the multicollinearity test – the findings of multicollinearity are just presented in Table 4.4.

Table 4.4: Multicollinearity Results

Independent Variables	Tolerance	VIF
Psychological Capital	0.61	1.63
Perceived Investment in Employee Development	0.57	1.74

4.5. Structural Equation Modeling (SEM) via SmartPLS

As was discussed in Chapter 3, the data for this research was assessed using PLS-SEM modeling in SmartPLS 3 software. The SmartPLS is strong and suitable SEM modeling software for assessing path coefficients.

This approach is a second-generation multivariate analysis that is widely recognized among scholars. SEM statistical models aim to test hypotheses that were formulated from existing body of knowledge by assessing links between various factors (or variables), the direction of the paths (or links) (Hair, Hult, Ringle & Sarstedt, 2016). It is very convenient for the analysis of sophisticated multivariate data, since multivariate statistical analysis enables us to analyze multiple variables simultaneously. This approach is proposed for studies using second-order formative constructs (Hair, Hult, Ringle & Sarstedt, 2013). Table 4.5 outlines the sequential steps that will be followed to validate the measures and to test the research model.

Table 4.5: **Systematic Evaluation of PLS-SEM Results**

Step 1: Evaluation of Measurement Model
Step 1a: Reflective Measurements: • Internal Consistency • Convergent Validity • Discriminant Validity
Step 1b: Formative Measurements • Collinearity among indicators • Significance and relevance of outer weights • Nomological Validity
Step 2: Validating Second Order Construct
Step 3: Evaluation of Structural Model • Significance and the relevance of the structural model path coefficients • Coefficient of determination R^2 • f^2 effect sizes • The predictive relevance Q2 and q2 effect sizes

In Step 1, statistical measures of reliability and validity were used to evaluate the measurement model (Chin, 2010). The same researcher, Chin, also argued that to evaluate measurement outcomes, it is required to concurrently depict all structural links between the latent variables and their items and the links between the latent variables in the model.

This step requires us to distinguish between different types of constructs. Namely, the formative and reflective constructs are distinct from each other and hence should be treated differently (Henseler, Ringle & Sinkovics, 2009). Reliability and validity of reflective constructs should be examined through CFA by using PLS-SEM, while these measures are not relevant to examine the robustness of formative constructs (Jarvis et al., 2003). Consequently, no reliability test will be performed for formative constructs except for validity (Henseler et al., 2009). In this research, all latent variables were measured using multiple items, so properly specifying them as formative or reflective is crucial. Misspecification of measurement models can easily result in measurement errors that further affect overall validity of the structural model (Jarvis et al., 2003).

In step 2, second-order construct will be validated. In step 3, evaluation of the structural model will be discussed in more detail. Some statistical technique will be applied to test the proposed research hypothesis. To do so, we have used the following criteria: evaluation of the structural model path coefficients, coefficient of determination R^2, effect size F^2, and predictive relevance Q^2 and q^2 effect sizes.

4.6. Evaluation of Measurement Model

In the analysis of PLS-SEM the first step is an evaluation of measurement model. It is also referred as an outer model. It displays how indicators load theoretically with the variables. In this work, construct reliability was evaluated by composite reliability (CR), while convergent validity was assessed by average variance extracted (AVE). Lastly, discriminant validity was checked by using Fornell -Larcker criterion and outer loading.

In order to understand how measurement indicators logically represent the constructs in the model, Confirmatory Factor Analysis (CFA) was employed (Hair et al., 2010). Two main approaches can be used to evaluate models under PLS_SEM: evaluations of reflective and formative models. In accordance with Hair et al., (2011) reflective measurement models should be evaluated by using internal consistency, convergent validity, and discriminant validity, while assessment of formative measurement models are based on collinearity testing, the significance of weights and nomological validity. The next subsections report the assessment of measurement model.

4.6.1. Reflective Measures Reliability

Reliability is the degree to which variables are consistent in what they are supposed to measure (Hair et al., 2006). For reflective constructs, the reliability was estimated by Cronbach's Alpha and composite reliability. As it is discussed in Chapter 3, internal

consistency can be properly evaluated by Cronbach's Alpha coefficients. In addition, this index of reliability is considered as the most adequate reliability coefficients, which evaluate the reliability of a bundle of measures. Cronbach's Alpha values which are higher than 0.7 are widely recognized as an index of high reliability (Field, 2009; Nunnally, 1978). Moreover, composite reliability is proposed as a suitable index to assess internal consistency. According to Fornell & Larcker (1981) composite reliability is more robust than Cronbach's Alpha, other author argued that it may over-or-under estimate the reliability of research measurenments (Raykov, 1998). Several authors suggested that composite reliability should be higher than 0.7 to achieve adequate reliability (Bagozzi & Yi, 1988; Chin, 1998b). Table 4.6 shows the reliability values for all reflective constructs. As can be seen in the following table, composite reliability for all factors was well above the required threshold of 0.7. Similarly, all Cronbach's Alpha values for reflective constructs are greater than 0.7, exhibiting acceptable level of reliability.

Table 4.6: Reliability Results

Constructs	Composite Reliability	Cronbach's Alpha
KSB	0.892	0.795
PIED	0.902	0.834
OID	0.826	0.789
PsyCap	Formative	
Resilience	0.892	0.773
Hope	0.843	0.770
Optimism	0.855	0.755
Self-Efficacy	0.811	0.733

Note: PIED =Perceived investment in employee development,
PsyCap= Psychological capital, OID= organizational identification,
KSB =knowledge sharing behavior.

In the similar vein, communality is a measure of how well the variance of a given variable is explained by all factors and it can be considered as the consistency of the indicator (Abdi & Williams, 2015). The recommended threshold value for communality

is 0.5 (Hair et al., 2010; MacCallum, Widaman, Zhang & Hong, 1999). The data in the Table 4.7 revealed that all values are above the required threshold.

Table 4.7: Communality Results

Constructs	Communality
KSB	0.628
PIED	0.517
OID	0.648
PsyCap	0.544

In accordance with Hair et al. (2011) to keep an item in the measurement model, its loading should exceed 0.708 and the items that have outer loadings between 0.4 and 0.7 can be removed, only if it leads to the increase of AVE and composite reliability. Figure 4.1 reports the measurement model of the current study and the values of the outer (factor) loadings of the constructs.

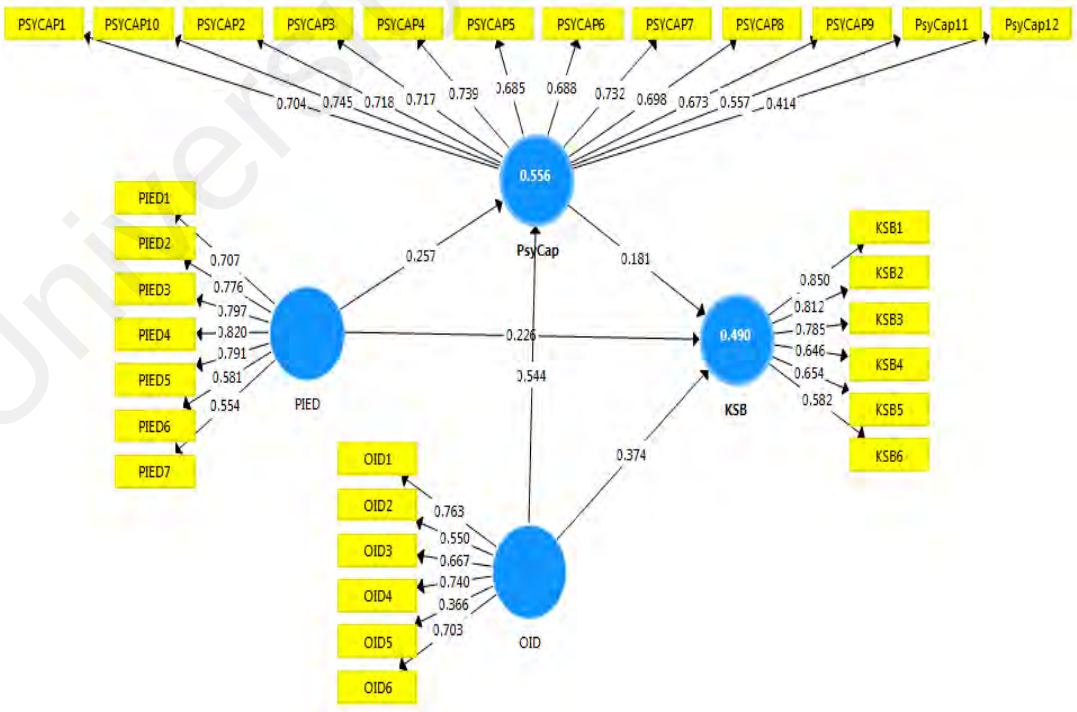

Figure 4.1: Measurement Model with factor loadings

As it can be seen in Figure 4.1 all the indicator outer loadings are not higher the threshold value of 0.708 which is also affecting the convergent validity (AVE values of the first order latent constructs). The general criterion for convergent validity is that the AVE values must be higher than 0.50 (Hair et al., 2011). Hence, items that have loadings less than the required threshold were removed, in cases where it leads to the increase in AVE values above 0.50 (See in Figure 4.2).

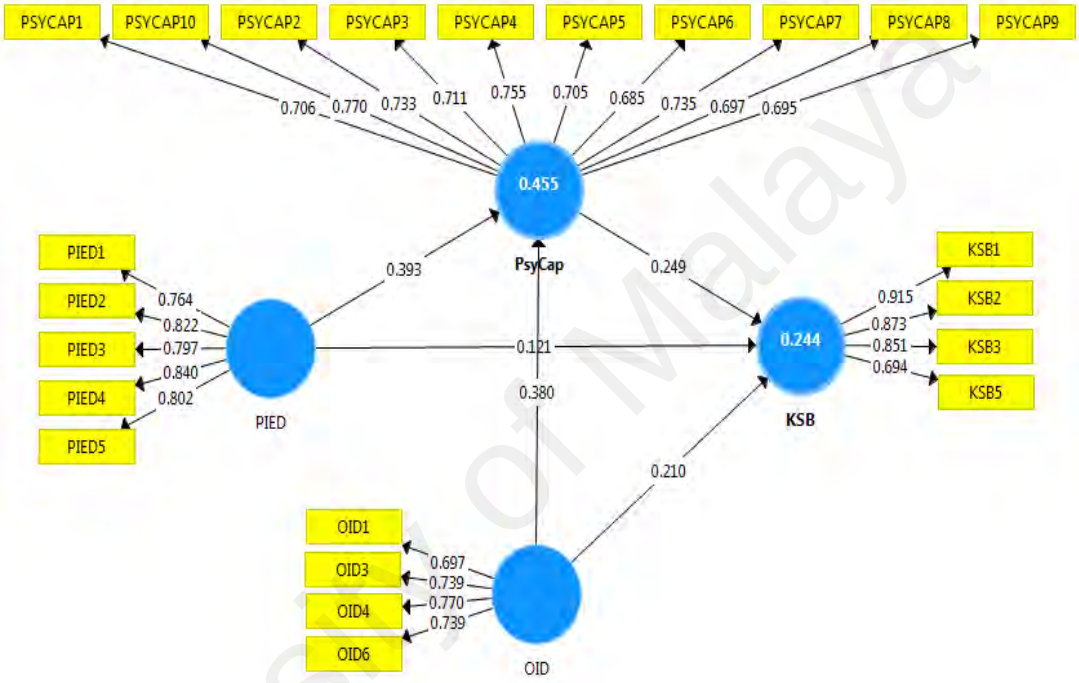

Figure 4.2: Measurement Model with Factor loadings after deletion of Items

4.6.2. Reflective Measures Validity

Generally, validity refers to the extent to which an instrument is really measuring the construct it is designed to measure (Peter, 1981). Namely, it refers to the degree of how accurately the construct is defined by the scales or measures.

The reflective measures can be properly evaluated by two types of validity. The first one is convergent validity which assesses the degree to which two measures of the same factor are correlated. The second one is discriminant validity which refers to the degree which measures of different concepts are distinct (Hair et al., 2010).

(a) ***Convergent Validity***

As mentioned in the previous chapter, by calculating AVE value we can assess convergent validity. The value(s) of AVE should greater than 0.5 to meet validity requirements. All AVE values were presented in the Table 4.8 and as we can see all AVE values within the required threshold of 0.5.

Table 4.8: AVE Results

Constructs	Average Variance Extracted (AVE)
KSB	0.628
PIED	0.544
OID	0.648
PsyCap	0.517

(b) ***Discriminant Validity***

As was rephrased in Chapter 3, by Hulland's (1999) definition of discriminant validity which is the degree to which different concepts are distinct. It can be assessed by comparing the square root of AVE with the correlation of that variable with all other variables of the study. The Table 4.9 reports that all values are within acceptable levels. Thus, discriminant validity was assured for all constructs.

Table 4.9: Evaluation of Discriminant Validity

	KSB	OID	PIED	PsyCap	AVE (square root)
KSB	1.000				0,793
OID	0.442	1.0000			0,738
PIED	0.392	0.5221	1.0000		0,805
PsyCap	0.451	0.5826	0.5922	1.0000	0,720

Abbreviate: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

Another recently recommended technique to check discriminant validity of reflective measurements is the usage of heterotrait-monotrait ratio of correlations (HTMT). It is proposed by Henseler et al., (2015) that HTMT must be less than 0.90 in order to meet discriminant validity criteria. The findings presented in Table 4.10 support the discriminant validity of the reflective constructs.

Table 4.10: Discriminant Validity results

	KSB	OID	PIED	PsyCap
KSB				
OID	0.561			
PIED	0.453	0.642		
PsyCap	0.503	0.696	0.651	

Note: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

4.6.3. Formative Measures Validity

Formative measures are assumed to be error-free (Edwards & Bagozzi, 2000), therefore traditional measures of reliability are not suitable (Jarvis et al., 2003). Moreover, assessing the construct validity by using convergent and discriminant validity is not a reasonable criterion (Diamantopoulos & Siguaw, 2006; Fornell & Larcker, 1981). Instead, establishing content validity before data collection is essential (Hair et al., 2016). As discussed in Chapter 3, the content validity for all measurement scales was established by reviewing HRM, KM and OB fields and panel of experts.

Three major steps were recommended by Hair and colleagues for the validation of formative measures (Hair et al., 2016). First, evaluate convergent validity of formative measurement; the next, evaluate collinearity issues; and third, assess the significance and relevance of the formative indicators. Before performing these steps, convergent validity of formative construct should be evaluated by examining the formative construct's correlation with an alternative measure of the similar construct using one or more reflective indicators. Thus 'the strength of the path coefficient linking the two

constructs is indicative of the validity of the designated set of formative indicators in tapping the construct of interest' (Hair et al., 2016, p. 121). The minimum correlation between constructs should exceed 0.80 (Chin, 1998b).

Table 4.11: Paths Coefficients

PsyCap	Reflective	Formative
Resilience	0.705	0.721
Hope	0.773	0.844
Optimism	0.731	0.755
Self-Efficacy	0.743	0.777

As an alternative measure of PsyCap (formative), data gathered on four reflective indicators of PsyCap were used to assess convergent validity of this variable. Table 4.11 reports the path coefficient between the PsyCap (formative) and PsyCap (reflective) above the required cut-off of 0.70.

(a) ***Formative measures collinearity***

Comparing with reflective indicators, formative indicators collinearity has been regarded as a problematic from a methodological and interpretational standpoint. According to Hair et al., (2016) the statistical significance of the measurements can be negatively affected by high collinearity between formative indicators. In order to calculate level of collinearity the TI and VIF can be used utilized. As mentioned before, a TI value of 0.20 or lower, and VIF value of 5.0 or higher indicates that the collinear problem is serious. Table 4.4 reported earlier that collinearity is not present between PIED and PsyCap, as all TI and VIF values are within required thresholds.

(b) ***Significance and relevance of the formative indicators***

The final step for evaluating the formative measurement model is the estimation of the significance of its weights. The relative importance of each indicator to the construct

was examined by using outer weights of the indicators. A bootstrapping approach was applied (5,000 cases) to estimate the significance of the outer weights and to assess whether formative indicators contributed to the higher-order constructs. PsyCap was modeled as a formative construct (Hair et al., 2016).

Table 4.12: Formative Indicators Outer Weight and Significance

	Formative Indicators	Outer Weights	Sample Mean	Standard Deviation	Standard Error	T-Statistics	P-Values
Psy-Cap	Resilience	0.218	0.358	0.033	0.025	3.37***	0.000***
	Hope	0.307	0.478	0.046	0.022	2.87***	0.000***
	Optimism	0.201	0.417	0.024	0.024	2.18**	0.000**
	Self-Efficacy	0.245	0.320	0.027	0.027	2.11**	0.000**

Level of significance: * p<0.10 **p<0.05 ***p<0.01
T-values > 1.65* (p<0.1); t-values > 1.96** (p<0.05); t-values > 2.57*** (p<0.01)

Table 4.12 shows that PsyCap indicators such as self-efficacy, hope, resilience and optimism contribute significantly to their construct, since all outer weights are positive and significant.

(c) ***Nomological Validity***

Nomological validity is a type of construct validity. More specifically, a formatively measured construct and its component indicators are substantially dependent to the nomological network in which the concept is found (Cenfetelli & Bassellier, 2009). The same scholars further argued that changes in one will produce changes in another. However, it is crucial to evaluate formative measures constructs across different nomological networks. In the present research, formative construct PsyCap is linked to both KSB and PIED constructs (see Table 4.9). The findings report that indicators' weight change occurs when nomological networks change, and consequently the nomological validity is supported.

4.7. Validating Second-Order Construct

This section provides some justifications and analysis why PsyCap was modeled as a second order formative construct.

4.7.1. PsyCap as a Second-Order Formative Construct

The PsyCap construct in the research model has so far been analyzed as a first-order construct. The construct may be conceptualized as a second-order, if it is supported by theory, to create a more parsimonious model by reducing the number of relationships in the structural model. Since the PsyCap is a multi-dimensional construct consisting of hope, self-efficacy, resilience and optimism, the indicators of PsyCap were reassigned to the second-order construct and analyzed.

The first-order constructs hope, self-efficacy, resilience and optimism were modeled into the second-order formative construct of PsyCap illustrated in Figure 4.3. The first-order construct of PsyCap were analyzed using the reflective model in sections before. In the following sections PsyCap will be analyzed as a second-order formative construct.

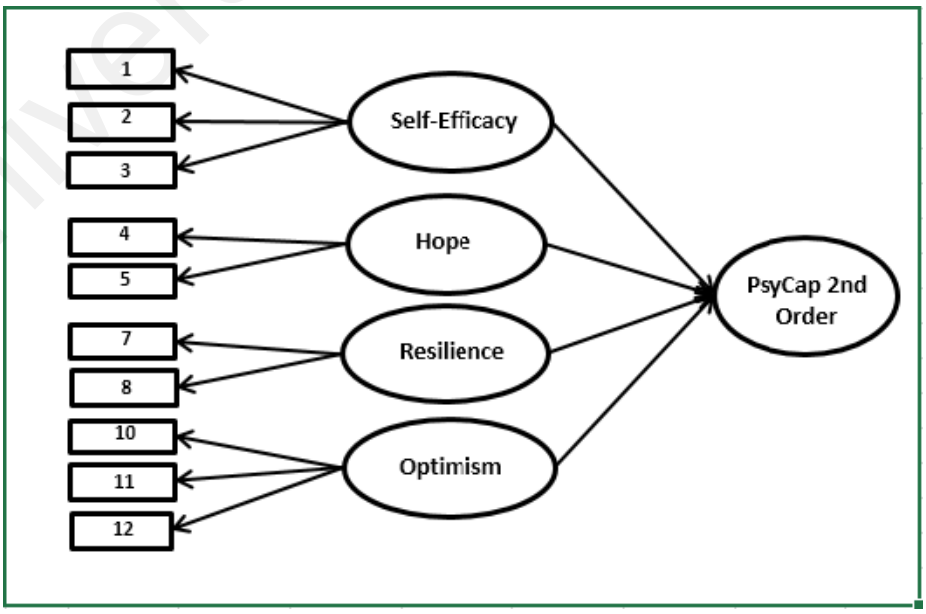

Figure 4.3: Second-order formative construct of PsyCap

4.7.2. Repeated Indicators Approach

The repeated indicators approach was used to test second-order constructs with PLS This approach was used to analyze the second-order reflective–formative type II model due to its superiority to estimate all variables and indicators simultaneously which subsequently avoiding interpretational confusion (Becker et al., 2012, Hair et al., 2016; Lohmöller, 2013). In this approach, the indicators of the first-order constructs are repeated as indicators of the second-order constructs. Since the approach of repeated indicators resulted in the second-order construct having a variance that was explained by all of its first-order constructs ($R^2 \approx 1$), a two-stage approach was applied to establish the second-order reflective-formative model (Henseler & Chin, 2010). In the first stage, in order to obtain the latent variable scores, the second-order construct of PsyCap was measured by the indicators of the first-order PsyCap (hope, self-efficacy, resilience and optimism). These are displayed in Figure 4.4.

In other words, the reflective indicators of the first-order construct – hope, self-efficacy, resilience and optimism – are repeated as reflective indicators of the second-order construct PsyCap. In the second stage, the first-order constructs served as manifest variables in the measurement model of the second-order construct. These procedures were performed to validate PsyCap as a second-order construct.

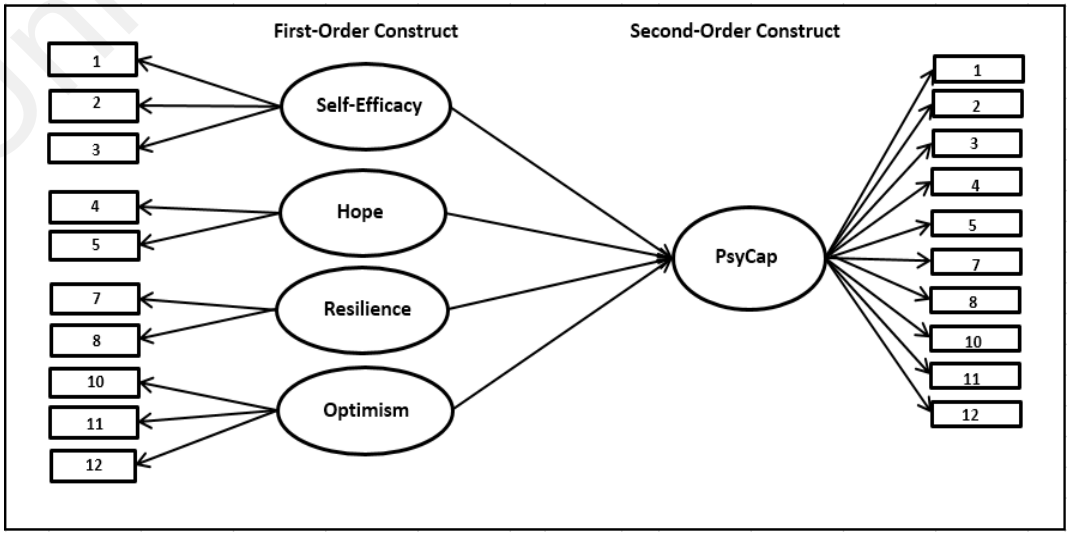

Figure 4.4: Repeated Indicator Approach

4.8. Evaluation of Structural Model

The next step after evaluating the reliability and validity of the construct measures is to proceed with the assessment of the structural model results. According to Hair, Hult, Ringle, and Sarstedt (2016) the following steps should be performed to evaluate the structural model:

Step 1: Assess the structural model for collinearity problems

Step 2: Assess the significance and relevance of the structural model relationships

Step 3: Assess the level of R^2

Step 4: Assess the effect sizes of f^2

Step 5: Assess the predictive relevance Q^2 and the q^2 effect sizes

(a) ***Step 1: Collinearity assessment***

To address the collinearity issues, two values were implemented: the VIF and TI. This is reported in Section 4.4.2 following the multicollinearity assumption. In sum, there are no collinearity issues between each set of the independent variables.

(b) ***Step 2: Assess the significance and relevance of the structural model relationships***

Fully standardized regression coefficients (path weights) were obtained by running PLS-SEM. These coefficients range from -1 to +1, thus representing both strength and magnitude of the hypothesized relations between two latent variables. Estimated path coefficients which are close to +1 denote strong positive relationship, and vice versa. As a rule of thumb, statistical significance of the paths directly linked to the magnitude of the path.

The bootstrapping procedure was used in order to test whether a path coefficient varies from zero in the population. In addition, the association between two latent variables should be significant and also relevant. Since PLS-SEM assumes that the data is not normally distributed, a nonparametric bootstrapping procedure would be more suitable to figure out the significance of the coefficients. Particularly this procedure 'estimates the standard errors of the parameter estimates, calculates the ratio of a parameter estimate to its standard error, and compares this statistic to the t distribution to obtain the p-value' (Rönkkö & Evermann, 2013, p. 15). Consequently, path coefficients (both t and p values) and bootstrap confidence interval should be reported by the researchers.

In the current research, five thousand (5,000) bootstrap samples were used to gauge statistical significance of the PLS path model. Hair et al., (2016) have advised that path coefficients greater than 0.20 are significant, on the other hand, values lower than 0.1 are not significant. Lohmöller, (2013) has also confirmed that path coefficients higher than 0.1 are right. Path coefficients (which close to +1) have a strong positive link and same can be applied to negative links (Hair et al., 2016). The next Table 4.13 shows the findings of the hypothesis testing using bootstrapping.

Table 4.13: Hypothesis Testing

Hypothesis	Relationship	Path Coefficient	Standard Error	t-value	p-value
H1	PIED -> KSB	0.035	0.077	0.49	0.24
H2	PIED -> PsyCap	0.382	0.059	6.87***	0.001***
H3	PsyCap -> KSB	0.300	0.085	3.70***	0.003***

Note: t-values > 1.65* (p<0.1); t-values > 1.96** (p<0.05); t-values > 2.57*** (p<0.01)
Level of significance: * p<0.10 **p<0.05 ***p<0.01
Abbreviate: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

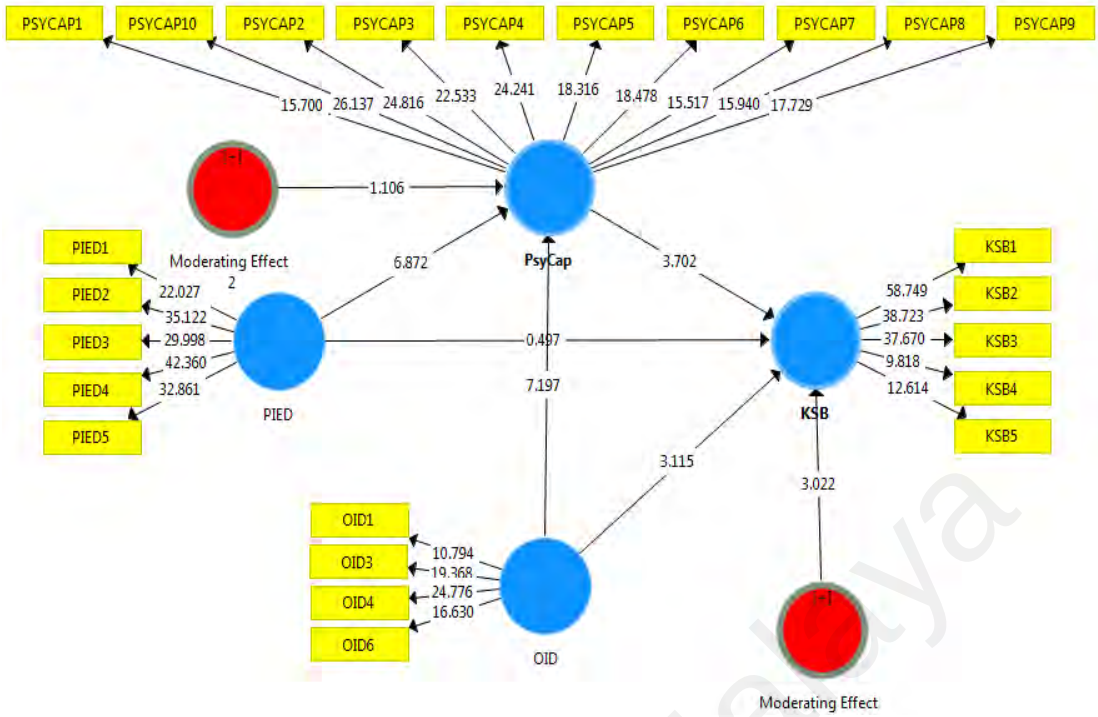

Figure 4.5: Research Model with T-statistics

Relationship between PIED and KSB

The relationship between PIED and KSB (H1) (β= 0.035; t=0.49) was not supported since it was not statistically significant.

Relationship between PIED and PsyCap

Hypothesis H2 (β=0.382; t=6.87) was supported with a positive relationship observed between PIED and PsyCap and was significant at a 1% probability of error.

Relationship between PsyCap and KSB

Hypothesis H3 (β=0.300; t=3.70) was supported by a positive relationship observed between PsyCap and KSB and was significant at a 1% probability of error (See Figure: 4.5 and Figure 4.6).

(c) ***Step 3: Assess the level of R^2***

The R^2 is the amount of variance in the dependent variable explained by the independent variables. Particularly, coefficient of determination R^2 is viewed as an

adequate estimate of model predictive accuracy. It can be calculated as the squared correlation between dependent variable and predicted values. This value varies from 0 to 1, with values closer to one denoting a higher degree of predictive accuracy. However, the research evidence shows that acceptable R^2 values depend on the model complexity and research field. For example, R^2 values of 0.20 are regarded as high in such disciplines as behavior of consumers. Generally speaking, in the structural model, endogenous latent variables can be regarded as substantial, moderate or weak with R^2 values of 0.75, 0.50 or 0.25 (Hair et al., 2011; Henseler et al., 2009). The R^2 values are presented in Table 4.14. Adjusted R2adj takes into consideration model complexity, adjusts the R^2 accordingly. Hence, it is suggested to compare the predictive ability of different PLS-SEM models.

Table 4.14: **Comparison of Acceptable R^2 values**

Authors	Weak	Moderate	Substantial	Field
(Chin, 1998b)	0.19	0.33	0.67	Information System
(Cohen, 1988)	0.02	0.13	0.26	Behavioral Sciences
(Hair et al., 2011)	0.25	0.50	0.75	Marketing

Accordingly, Table 4.15 gives details of the R^2 of the endogenous latent constructs. The results showed that the coefficient of determination, R, was 0.30 for the KSB endogenous latent construct. This signifies that the latent variables of this study (PIED and PsyCap) have been explained 30% of the variance in KSB. According to Cohen's (1996) standard, the overall explanatory power of the structural model was determined as a substantial.

Table 4.15: R^2 and R^2_{adj} of the endogenous latent variables

Endogenous construct	R^2	R^2_{adj}	Determination
KSB	0.37	0.28	Substantial
PsyCap	0.49	0.44	Substantial

Note: PsyCap= psychological capital, KSB=knowledge sharing behavior.

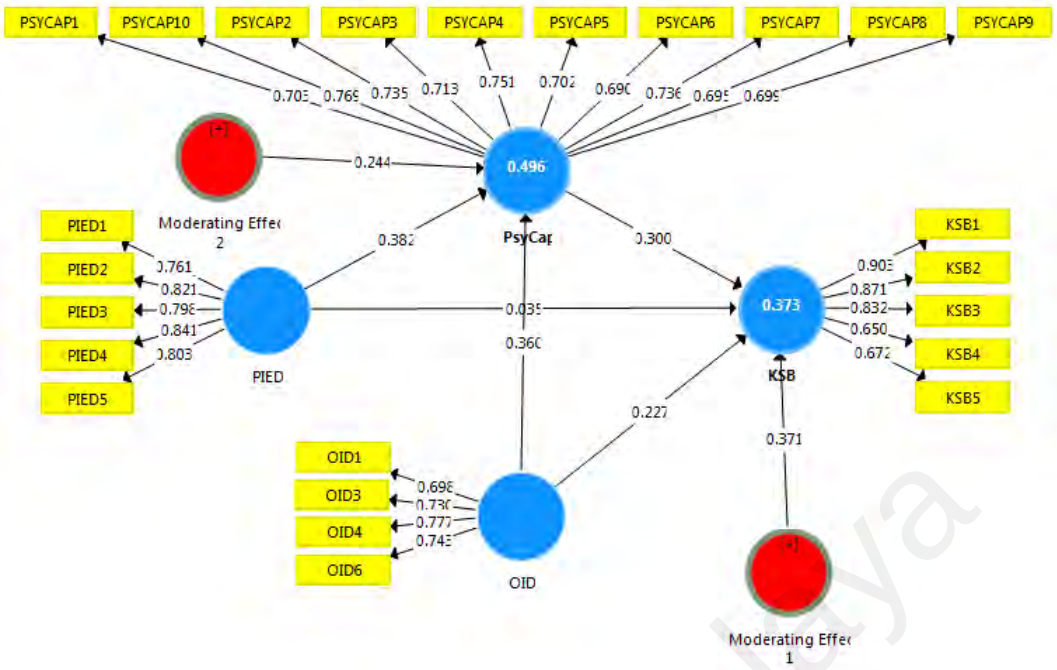

Figure 4.6: Research Model with Path Coefficients and R^2 values

(d) ***Step 4: Assess the effect sizes of f^2***

The effect size of f^2 is the evaluation of R^2 in a situation when a specific independent variable is move away from the model. Thereby, it examines the extent to which the omitted construct effects the dependent constructs (Hair et al., 2016). The following formula can be used to calculate the effect of the size of f^2:

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

By convention, f^2 values of 0.02,0.15, and 0.35 was defined as small, medium and large effects respectively (Cohen, 1988). Table 4.16 illustrates the f^2 effects sizes for all variables in the models.

Table 4.16: f^2 and q^2 Effects Sizes

Hypo-thesis	Relationship	Path Coefficient	f^2	Determination	Q^2	Constructs	q^2
H1	PIED -> KSB	0.093	0.05	Small	0.07	PsyCap	0.23
H2	PIED ->PsyCap	0.396	0.10	Medium	0.20	KSB	0.19
H3	PsyCap -> KSB	0.290	0.54	Large	0.31		

Note: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

(e) ***Step 5: Assess the predictive relevance Q^2 and the q^2 effect sizes***

An additional method that can be used to assess predictive accuracy of the model is Stone-Geisser's Q^2 test. This predominant measure is an indicator of the model's predictive relevance. The Q^2 value is computed by using the blindfolding technique where the PLS-SEM algorithm omits data points and replaces them using mean value replacement (Chin, 1998a; Tenenhaus, Vinzi, Chatelin & Lauro, 2005). The difference between the true and the predicted values is then used as input for the Q^2 measure.

The next step in assessing the structural model after evaluating R^2 values and Q^2 values for all dependent constructs is the q^2 effect sizes. Regarding the q^2 effect sizes, our approach is similar to the f^2 effect sizes approach for evaluating R^2 values. The relative impact of predictive relevance can be compared by means of the measure to the q^2 effect size. It can be calculated according to the following formula:

$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}$$

Effect size values of 0.02, 0.15, and 0.35 are respectively classified as small, medium or large productive relevance for the predictive variables (Cohen, 1988). Table 4.16

illustrates the q^2 effect sizes for all variables in the models, while Table 4.17 and Figure 4.7 provide a summary of the tests for the evaluation of structural models.

Table 4.17: Summary of the Tests for the Evaluation of Structural Models

Test	Threshold Values/Rules
Collinearity	TOL > 0.20 and VIF< 5 for the each group of exogenous constructs explaining corresponding endogenous constructs
Path weight significance	See bootstrapping procedure in Section
R^2	0.25 (weak), 0.50 (moderate) and 0.75 (substantial)
f^2	0.02 (small), 0.15 (medium) and 0.35 (large)
q^2	0.02 (small), 0.15 (medium) and 0.35 (large)

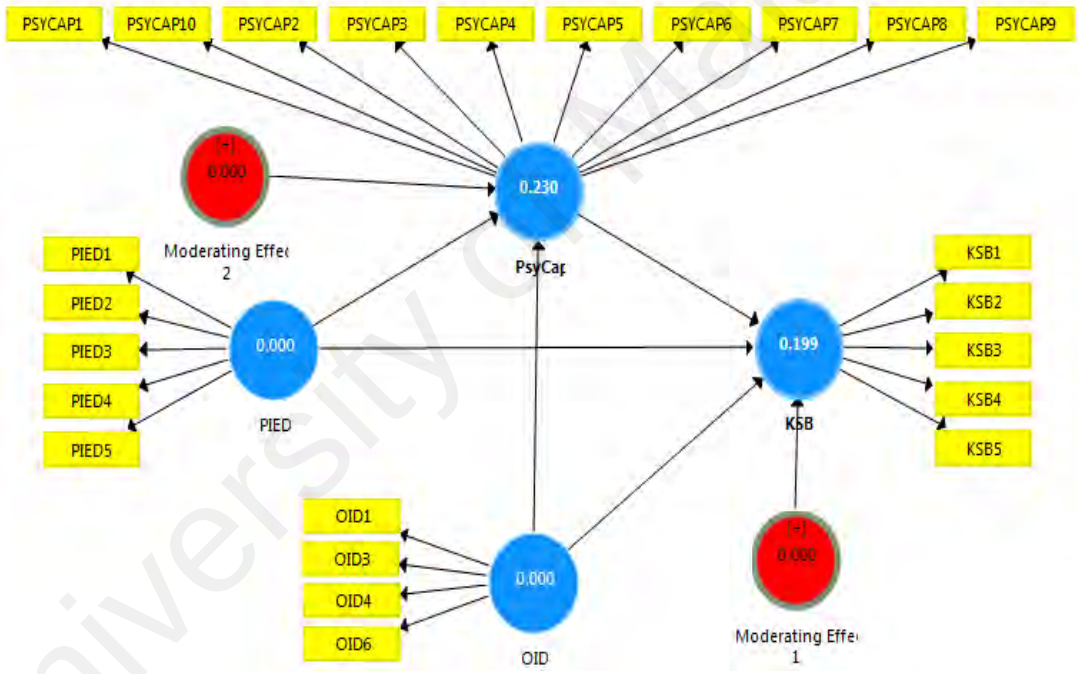

Figure 4.7: Blindfolding and Q^2

4.9. Advanced Evaluations: Mediation Effect

The PLS-SEM needs a different test procedure to evaluate the mediation effect. A simple cause-effect link between two constructs assumes that independent variable has a direct impact on dependent variable without any other influences. In reality, this link is often more complex than a simple direct one; it can be mediated by different

mechanisms. Namely, a mediating effect exists when a third (mediating) variables intervenes between a predictor variable and an outcome variable (Hair & Lukas, 2014). The same authors further asserted that the general purpose of mediation is to explore why a relationship between independent and dependent variables exists.

Figure 4.8 provides an illustration of an effect. The p_{13} path effect is a one path from LV_1 to LV_3. The mediation or indirect effect links the LV_1 and LV_3 through mediation variable (LV_2). This indirect effect indicated with two arrows – one from LV_1 to LV_2 and the other one from LV_2 to LV_3. As Baron and Kenny (1986) suggested, a variable functions as a mediator when it meets three conditions:

- LV_1 should have significant effect on LV_3.
- LV_1 should have significant effect on LV_2.
- When the LV_2 is added to the models of LV_1 and LV_3 respectively, the standardized estimates of the path of LV_1 to LV_3 may become insignificant (full mediation), and may weaken before adding the LV_2 (partial mediation).

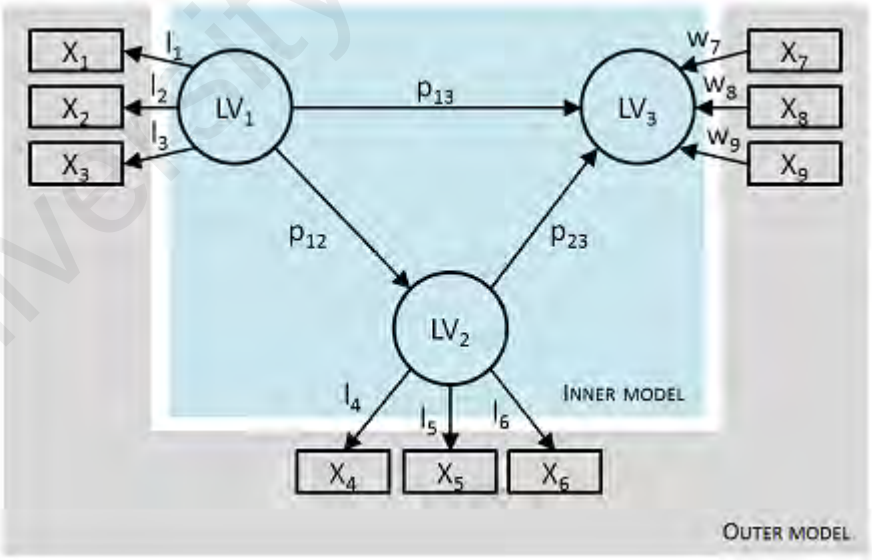

Figure 4.8: Example of a Simple PLS-SEM Path Model

However, more recent studies proposed a quite different approach to conduct mediation analysis (Hayes, 2009; Zhao, Lynch & Chen, 2010). These scholars

suggested that to determine mediation the Baron/Kenny 'three tests + Sobel' steps can be substituted with one test: the bootstrap test of the indirect effect (LV_1 to LV_3). Zhao and colleagues argued that in order to assess mediation, it is only required that the indirect effect must be significant. This process just involves running the Preacher Hayes script and produce 'Bootstrap Results for Indirect Effects', to identify whether the indirect effect is significant or not.

In this study, the theoretical model has one mediator: PsyCap. Namely, the relationship between PIED and KSB tend to be mediated by PsyCap. As it is shown in testing mediation (Table 4.18) the total effect is significant (β=0.20; t=2.89). However, there is no significant direct relationship between the independent variable (PIED) and the dependent variable (KSB) (β=0.035; t=0.49). Therefore, the results proved the existence of indirect effect (mediation) (β=0.11; t=2.35), because the direct effect of PIED on KSB after introducing PsyCap is not significant. In other words, the link between PIED and KSB is indeed mediated by PsyCap (see Figure 4.9).

Table 4.18: Testing Mediation

Path	Standardized Coefficients (t-values)		
	Total Effects	**Direct Effects**	**Indirect Effects**
PIED -> KSB	0.20 (2.89***)	0.035 (0.49)	0.11 (2.35***)
PIED ->PsyCap		0.382 (6.87***)	
PsyCap -> KSB		0.300 (3.70***)	

Note: t-values > 1.65* (p<0.1); t-values > 1.96** (p<0.05); t-values > 2.57*** (p<0.01).
Abbreviate: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

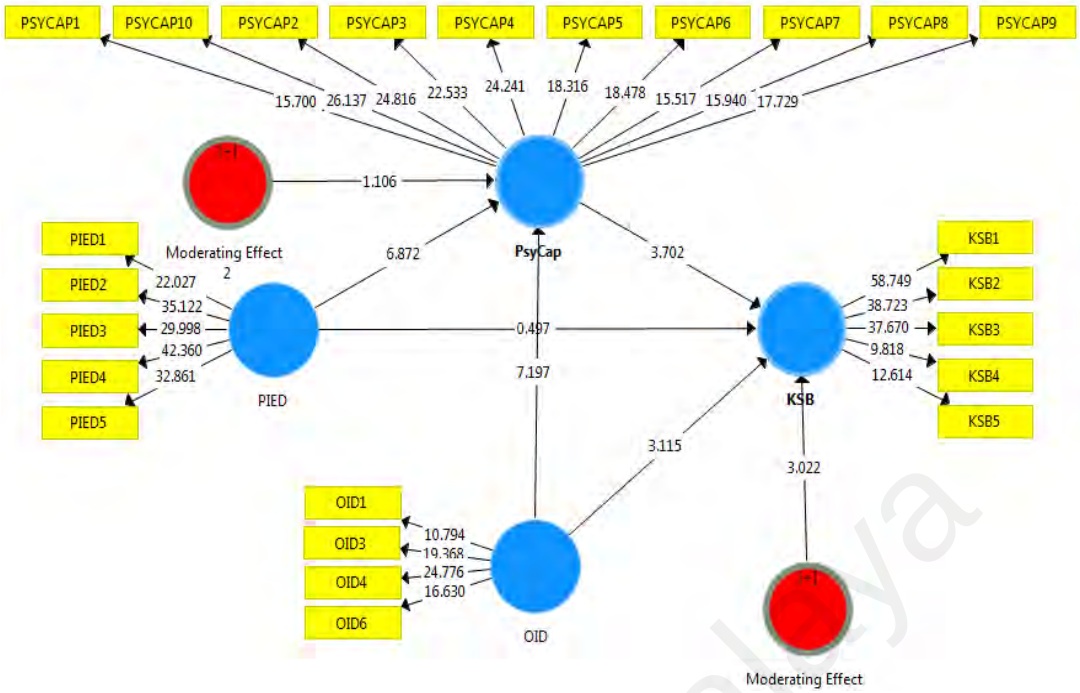

Figure 4.9: Research Model with T-statistics for Mediation

4.10. Advanced Evaluations: Moderation

The moderating effects of OID on the relationship between PIED-PsyCap and PsyCap-KSB were performed using product indicator approach. This approach which was proposed by Chin and colleagues (2003) and Kenny and Judd (1984) refer to the product of each indicator in the independent variable and each indicator in the moderator. Moreover, the product indicator approach has been recognized as the most promising technique to analyze the moderating effects (Henseler & Fassott, 2010), especially when the moderator construct is reflective (Henseler & Chin, 2010). In this research, the moderating construct of OID was specified as reflective. The overall scheme of the product indicator approach is presented in Figure 4.10, adapted from Henseler and Chin's work (2010).

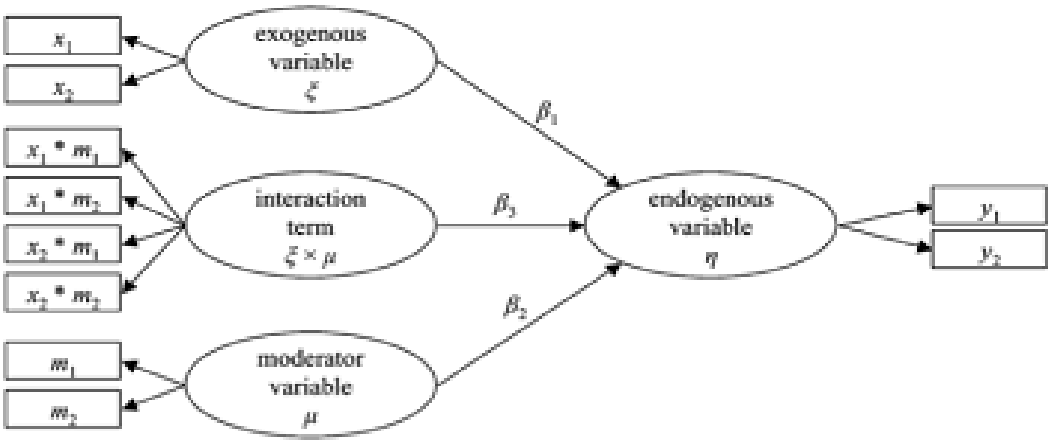

Figure 4.10: Product Indicator

Generally, moderation is said to exist when the effect of an independent variable on a dependent variable varies according to the level of a third variable, which moderates the relationship. In this study, organizational identification is supposed to moderate the impact of PIED on PsyCap and PsyCap on KSB. In the core moderation analysis, the moderating variable (OID) was added to the model and the moderating effect was added to the dependent variable (KSB). Then, bootstrapping process was conducted to assess the statistical significance of the moderating effect. Table 4.19 and Figure 4.11 report the findings of the moderation analysis for the hypothesized moderating variable OID.

Table 4.19: OID as a Moderator

Hypothesis	Relationship	Interaction term (β)	Interaction term (T -statistics)
H5	PsyCap -> KSB	0.37	3.02***
H4	PIED ->PsyCap	0.24	1.10

Note: t-values > 1.65* (p<0.1); t-values > 1.96** (p<0.05); t-values > 2.57*** (p<0.01).

The moderation effect of OID on the relationships of PIED-PsyCap and PsyCap-KSB were tested. Significant moderation was found for OID in the relationship between PsyCap and KSB (β = 0.37, t=3.02), indicating that hypothesis 5 was supported. However, no moderation effect was found for OID in the PIED-PsyCap relationship (β = 0.24, t=1.10). Thus, these results do not support Hypothesis 4.

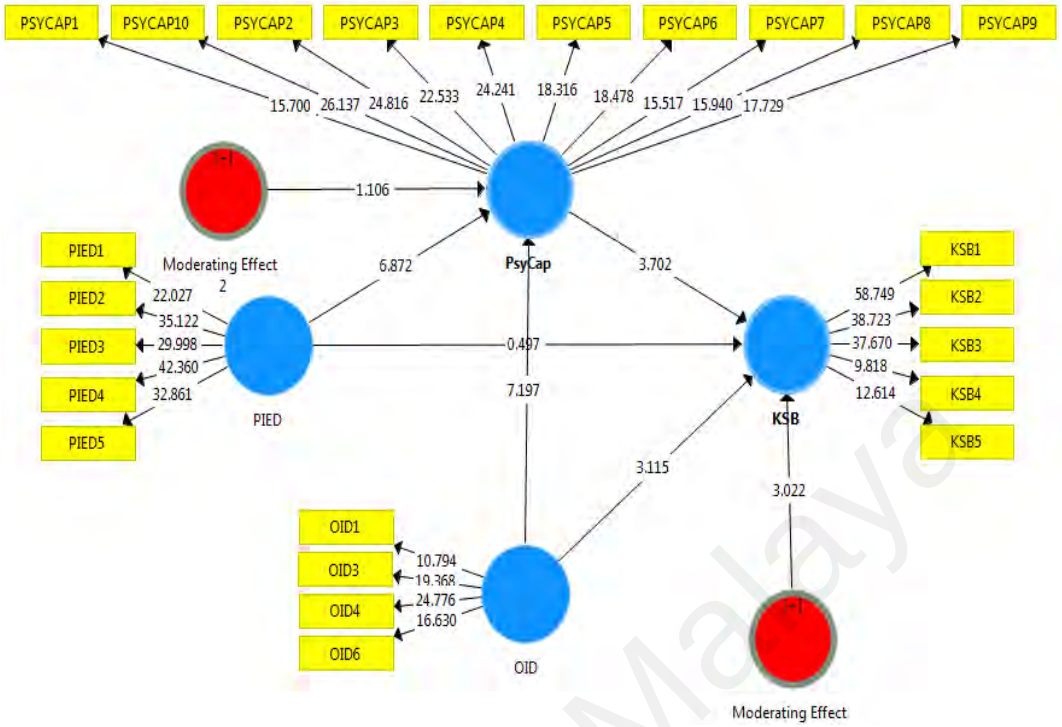

Figure 4.11: Research Model with T-statistics for Moderation

4.11. Assessment Goodness-of-Fit

Some scholars have proposed a well-known criterion of Goodness-of-Fit (GoF) to ensure the proper validation of the research models (Tenenhausa et al., 2005). One of the advantages of the GoF index is that it can be applied to both reflective and formative models (Vinzi et al., 2010; Chin, 2010). The calculation of this index is described as the geometric mean of the average communality and the average R^2 for the endogenous constructs. The formula for calculating GoF is:

$$GoF = \sqrt{\overline{AVE} * \overline{R^2}}$$

$$\textbf{GoF}= \sqrt{Average\ \textbf{communality} * \text{Average } R^2}$$

In line with the effect size of R^2, GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.36 are the baseline values for validating the PLS model globally (Wetzels et al., 2009).

Table 4.20: Communality Results

Constructs	R^2	Communality
KSB	0.29	0.62
PsyCap	0.45	0.51
PIED	-	0.64
OID	0.27	0.54
Average	0.33	0.58

Note: PIED =Perceived investment in employee development,
PsyCap= psychological capital, OID = organizational identification,
KSB=knowledge sharing behavior.

Table 4.20 shows the indices for communality and explained variability. Following these suggestions, we calculated a GoF value of 0.43, which is above the threshold of 0.36 for large effect sizes of R^2, and this indicates that the proposed model is acceptable and fit.

4.12. Importance Performance-Matrix Analysis

The Importance Performance-Matrix (IPMA) is regarded as a beneficial approach in extending the findings of the basic PLS-SEM outcomes using the latent variable values. Particularly, this technique compares the structural model total effects (importance) and average values of the latent variables scores (performance) of a particular endogenous variable. This technique can be used to determine which construct(s) in the structural model are relatively important and/or have relatively higher performance. In addition, IPMA has a potential to assist researchers to further explain and discuss the findings for managerial implications (Hair et al., 2016).

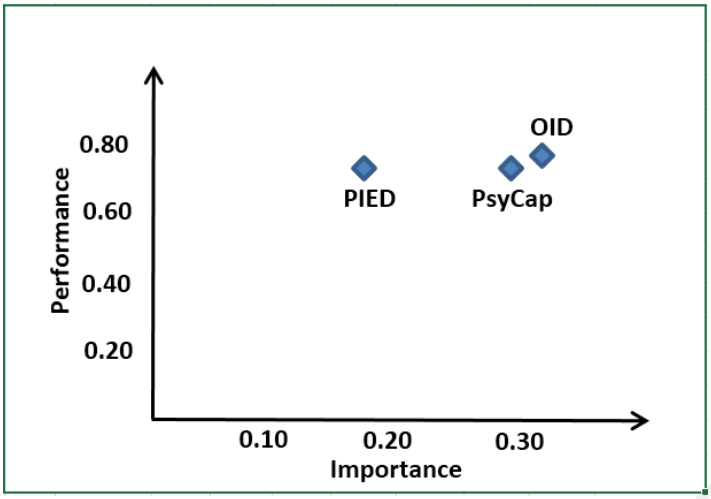

Figure 4.12: IPMA for knowledge sharing behavior

The IPMA for KSB was determined by estimating the performance and importance of the predecessor constructs. Table 4.21 reports the values for the importance (total effects) and the performance (index values) of the direct and indirect predecessor of the KSB construct. The direct predecessor of the KSB is the reflective PsyCap construct while PIED is the indirect predecessor of the KSB. The findings reveal that the most important predictor variable for KSB is OID rather than PsyCap and PIED (See Figure, 4.12).

Table 4.21: IPMA Result

Construct	Knowledge Sharing Behavior	
	Importance (Total Effect)	**Performance (Index Values)**
OID	0.32	79.01
PIED	0.17	75.83
PsyCap	0.28	75.45

Note: PIED =Perceived investment in employee development,
PsyCap= psychological capital, OID = organizational identification,
KSB=knowledge sharing behavior.

In Figure 4.5, the IPMA for KSB displayed that the direct predictors PIED and PsyCap ranked high in performance. PsyCap was not only ranked high in performance, but also ranked high in importance. It means that PsyCap was the relevant reflective construct. PIED, the indirect predecessor of KSB, ranks high in both performance and

importance as well. In sum, the results suggested that both PsyCap and PIED were relevant reflective constructs to KSB.

4.13. Control Model

Usages of control variables play an important role in organizational behavior research. Particularly, utilization of control variables have focal implications for theory and practice as such decisions can change substantive research outcomes (Saunders, 2011). In this empirical research, gender, age and working experience were used as control variables. Figure 4.13 shows that the values of gender (1.12), age (0.20) and work experience (0.14) is non-significant on the link between PIED and KSB.

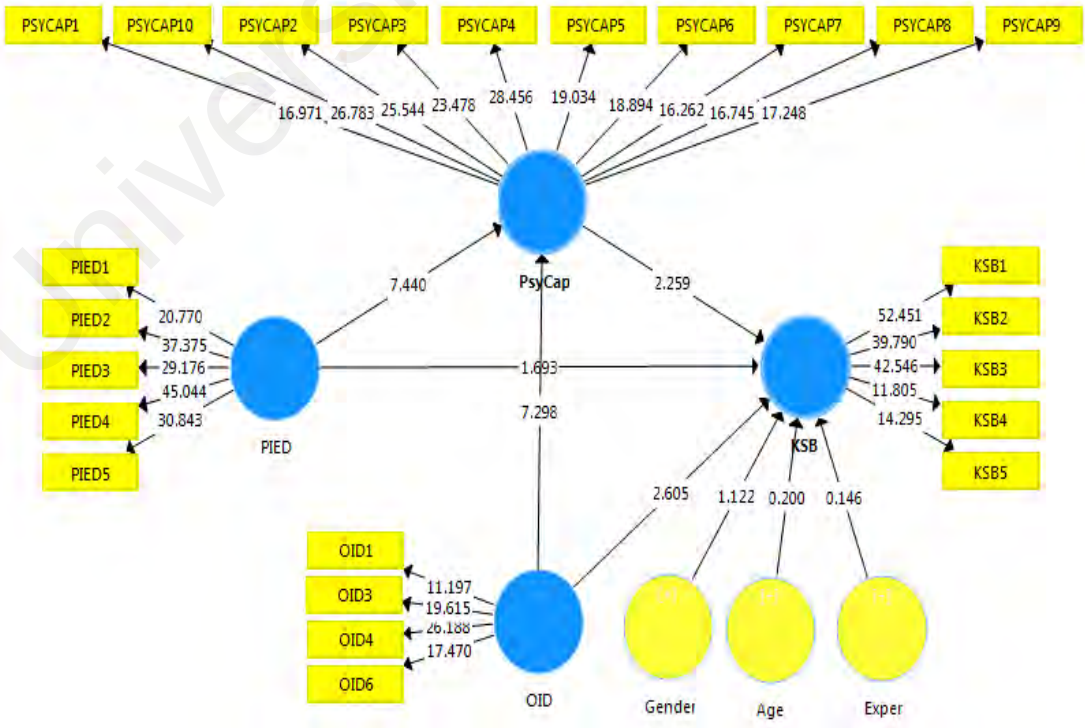

Figure 4.13: Control Model

4.14 Mutli-Group Analysis

Multi-group analysis was performed to investigate if there is any significant effect of specific categorization criterion of employees on KSB. These features are; gender, age and working experience. For each construct, the data set was divided based on the various values of the construct. Next, PLS analysis was carried out for both sets of data, and the findings were tested for significance for KSB. The outcomes for KSB are shown in Table 4.22 The findings shows that no gender, age and working experience difference in the proposed model, which may reflect that similar mechanism involved in the path between PIED and employees' KSB. The findings show that there is no significant difference between gender, age and working experience on KSB.

Table 4.22: Multi-group analysis

Variables		Group 1	Group 2	Significance
Working Experience	Regression Weight	0.75	0.54	Not Significant
	Standard-Error (S.E)	0.06	0.07	
	T-statistics	0.93		
Gender	Regression Weight	0.69	0.55	Not Significant
	Standard-Error (S.E)	0.06	0.10	
	T-statistics	1.22		
Age	Regression Weight	0.63	0.72	Not Significant
	Standard-Error (S.E)	0.08	0.09	
	T-statistics	0.59		

4.15 Final Structural Model (With Second-Order PsyCap Construct)

Figure 4.14 presents the final structural model for the PsyCap construct.

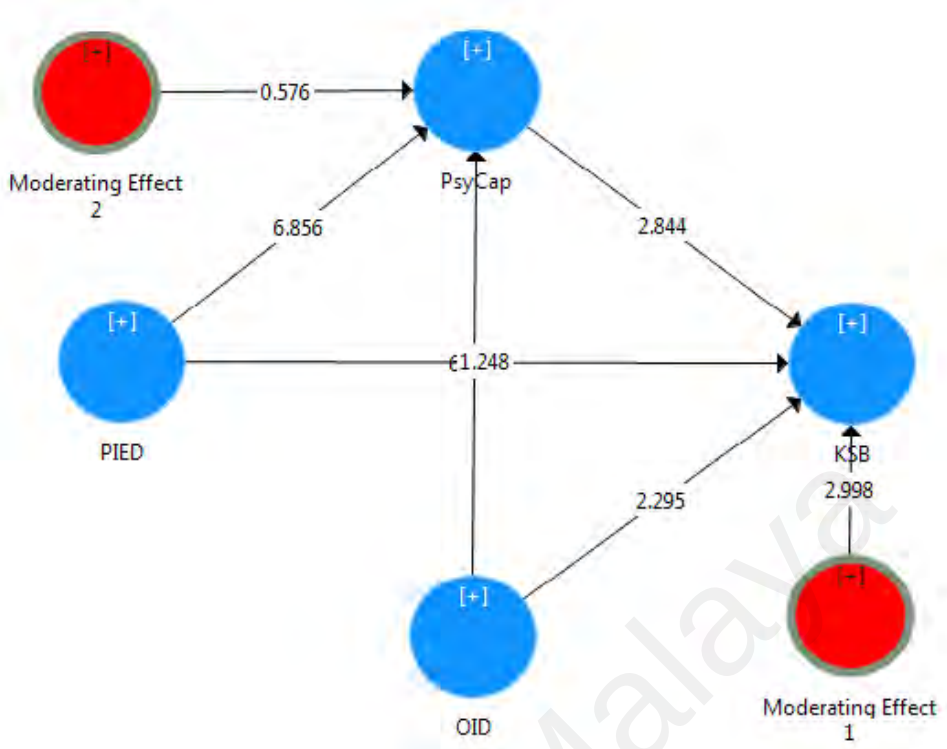

Figure 4.14: Final Structural Model

Lastly, Table 4.23 provides a brief summary of research findings.

Table 4.23: Summary of Results

Hypothesis	Path coefficient	T -Value	Results
H1: PIED has positive effect on employee KSB.	0.093	1,248*	Not Supported
H2: PIED has a significant impact on PsyCap	0.059	6.85***	Supported
H3: PsyCap positively affects KSB	0.085	2.84***	Supported
H4: OID moderates the relationship between PIED and PsyCap	0.04	0.59	Not Supported
H5: The positive relationship between PsyCap and KSB will be stronger at higher level of OID and weaker at lower level of OID	0.23	3.26***	Supported
H6: PsyCap mediates the relationship between PIED and KSB.	0.11	2.35***	Supported

Note: t-values > 1.65* (p<0.1); t-values > 1.96** (p<0.05); t-values > 2.57*** (p<0.01). Abbreviate: PIED =Perceived investment in employee development, PsyCap= psychological capital, OID = organizational identification, KSB=knowledge sharing behavior.

4.16. Conclusion

This chapter has presented the empirical findings of this study. Descriptive analyses were performed by using SPSS software, and then the PLS-SEM was conducted using SmartPLS 3.0. The data analysis produced different outcomes. The first and fourth hypotheses were not supported in the analysis; however, all other hypotheses were confirmed. The final chapter of this research work considers the overall findings by addressing the research objectives and research questions. Lastly, major research limitations and directions for future studies are discussed.

CHAPTER 5. DISCUSSION AND CONCLUSION

5.1. Introduction

The purpose of the present chapter is to summarize and discuss the key outcomes. This part of the work is subdivided into four separate parts. The first one gives some overview of the overall study. Next part of this chapter presents the discussions and interpretations of the key outcomes of this PhD work. The following part outlines the research limitations and gives some future directions. In the last section, some conclusions are discussed.

5.2. Overview of the Research

The main goal of the current PhD work is to formulate a theoretical framework to guide research efforts in KM. The new proposed model can help us to better understand the employees' knowledge sharing behavior in Kazakhstan from an organizational and psychological perspective. The author provides four research objectives, which are extremely valuable in leading this empirical work. Four research questions posed in this work are: (1) What is the relationship between PIED and KSB? (2) What is the mediating role of PsyCap between PIED and KSB? (3) What is the moderating role of OID between PsyCap and KSB? (4) What is the moderating role of OID between PIED and PsyCap?

Based on these research questions, this research work examines the impact of PIED on KSB. Moreover, the mediating effect of PsyCap between PIED and employees' KSB was investigated. Finally, the research attempted to explore the moderating role of OID between PsyCap-KSB and PIED-PsyCap.

To respond to these research questions, the present research was carried out in three stages. Firstly, it starts with the review of the past studies in order to derive interesting

trends in KM. From this integrative review, specific research gaps in the literature were identified, hence, a new research model was proposed. To identify specific factors that might influence KSB, a content analysis of the recent articles was performed. From this analysis, it was noted that there is a lack of studies that treat HRD practices as antecedents and KSB as an outcome factor of PsyCap. In addition, there is a lack of studies examining these relationships from a contingency perspective. In order to address the identified gaps, perceived investment in employee development, psychological capital and organizational identification were identified as potential variables that could interactively affect KSB. Based on the literature and notable scholars' suggestions (Bruce Avolio, Fred Luthans and Bard Kuvaas), this work builds a research framework that integrates the study constructs.

The following stage includes information about our sample, research measurements and data collection. The research sample was selected from 900 employees who work in the 300 largest companies operating in Kazakhstan. The measurement instrument used in this research was adopted from prior studies: a survey questionnaire was applied to collect the data. In total, 900 questionnaires were randomly sent to employees and managers and 265 were filled and returned, which represents a 29% response rate. The last stage emphasizes a description of the research design and data analysis process. The data was firstly analyzed by using SPSS software then PLS-SEM was applied to evaluate the measurement and structural model and to test research hypotheses.

5.3. Discussion of Research Results

Four research questions were developed for this work. This section summarizes each of them.

RQ1: What is the relationship between PIED and KSB?

To answer Question 1, this research study performed an empirical analysis of the direct/indirect relationship between PIED and KSB. However, the PIED was appeared to have no significant impact on KSB. Overall, PIED refers to the overall employees' appraisal of their company's dedication to invest in the staff (Lee & Bruvold, 2003). Several studies have identified a positive link between PIED and various desired workplace behaviors such as work effort, organizational citizenship behavior (Kuvaas & Dysvik, 2009a), task performance (Kuvaas & Dysvik, 2009b) and intention to stay (Fallon & Rice, 2015). However, some other studies could not confirm these associations (Dysvik, Kuvaas, Buch & Tetrick, 2016; Kuvaas et al., 2012). This study reaffirms the findings of a second stream of research on the absence of direct effect of PIED on KSB. These research outcomes may be elucidated by the fact that increased demand for life-term learning and non-stop professional growth imply higher workloads, stress, and high expectations from employees which may further inhibit KSB (Green, 2004).

However, when we observe this relationship from a mediating perspective, a clearer picture will emerge. Our findings show that PIED may enhance employees' KSB through fostering positive psychological capacities such as HERO (four components of PsyCap). Namely, employees with higher level of PsyCap are more inclined to share their knowledge or expertise, despite increased workload, stressful learning environment and role expectations.

RQ2: What is the mediating role of PsyCap between PIED and KSB?

Question 2 is one of the central questions of this work, and empirical evidence is required to prove the role of PsyCap as a mediator in the proposed relationship between PIED and KSB. Firstly, study results (H1) concluded that PIED has a positive influence on PsyCap. As it was mentioned before, understanding factors that may positively affect PsyCap can help organizations to build effective strategies aimed at developing

and leveraging employees' PsyCap. Previous studies have addressed several antecedents of PsyCap, like supportive climate (Luthans et al., 2008), leadership styles (Gupta & Singh, 2014), learning goal orientation (Huang & Luthans, 2015) high-performance working practices (Sarikwal & Gupta, 2014), HR flexibility (Wojtczuk & Turek, 2015), learning climate and more. These studies have suggested that a number of factors may influence PsyCap development. In this study PIED was examined as a possible predictor of PsyCap. The research finding is consistent with previous approaches, which assumed that organizational factors have a potential to influence PsyCap formation.

In accordance with Lee and Bruvold (2003), the PIED fosters organizational members' feelings of control over their professional destiny and fate by providing them opportunities to refresh old skills and acquire new ones, which further might improve employee's positive psychological state. Moreover, organization members who embrace the opportunity to improve their professional capacity will obviously feel more satisfaction in their competence level, which in turn enhances their positive psychological resources. Finally, companies that invest in their people take a risk that this investment may enhance the value of their employees outside the workplace, so PIED might signal to employees that their organization values them, which in turn may enhance their positive psychological state of mind.

Secondly, the research findings (H2) show that PsyCap has a positive impact on KSB. Past empirical studies have examined the associations between PsyCap and positive employee attitudes and behaviors, such as work engagement (Sweetman & Luthans, 2010), organizational citizenship behavior (Norman et al., 2010), subjective well-being (Nielsen et al., 2016), in-role performance and KSB (Wu et al., 2016). The results of this research work are in accord with prior studies, which have shown a positive association between PsyCap and different extra-role behaviors such as knowledge sharing behavior.

This relationship might be explained by the following reasons. First, scholars found the positive association between high levels of PsyCap and high levels of proactive behaviors (Frese & Fay, 2001), which requires people to be involved in KS processes. Second, organization members with higher PsyCap are more prone to participate in behaviors that require development of new ideas or knowledge. Because, people with high levels of PsyCap may feel less afraid of making mistakes and try new behaviors (Luthans et al., 2007). More specifically, hope as a psychological strength may assist individuals to perceive failures and problems as a normal part of life, and make them believe that they will be resolved in the end (Larson & Luthans, 2006). The next support for our outcomes is that a high role breadth self-efficacy may increase employees' positive attitudes and behaviors toward their jobs (Parker, 1998). Hence, they are more open toward new ideas and are more inclined to share their knowledge. In sum, PsyCap may be an important antecedent of employees' KSB.

Thirdly, this study hypothesizes (H6) that PIED has an indirect impact on employees' KSB via PsyCap. The results demonstrated that PsyCap mediates the link between PIED and KSB. These findings follow the logic of previous studies, which have emphasized the mediating role played by PsyCap in linking different predictors and consequences. For instance, recent empirical work has found that this concept mediates the association between transformational, authentic and ethical leadership to individual-level and team-level job performance (Bouckenooghe et al., 2014; Woolley, Caza & Levy, 2010). More recent empirical research has also demonstrated that PsyCap mediates the link between empowering leadership and job engagement (Park, Kim, Yoon & Joo, 2017). Similarly, Malik and Dhar (2017) determined the mediating effect of this psychological capacity on the relationship authentic leadership and extra-role behavior of nurses. At the team-level, it was determined that the collective PsyCap of the group plays a mediating role in the association between specific leadership styles

and OCBs of the team (Walumbwa, Luthans, Avey, & Oke, 2014). Other empirical work has also shown that this concept mediates the link between leader-member exchange and employee satisfaction (Liao, Hu, Chung & Chen, 2017). Another stream of research proposed to introduce PsyCap as a mediator between organizational practices and pro-organizational behaviors (e.g., KSB or OCB) (Newman et al., 2014). For instance, Sarikwal and Gupta (2014) found that PsyCap mediated the association between high performance work systems and employees extra-role behaviors. In the same vein, recent empirical evidence indicated that resiliency (one of the component of PsyCap) partially mediates the link between high performance HR practices and employee work engagement (Cooke et al., 2016). Some research has also explored the indirect effect of organizational socialization practices on KSB through PsyCap (Gruman et al., 2013). By following this stream of research, this study hypothesizes that PIED has an indirect effect on KSB through PsyCap. In sum, it can be concluded that this positive concept plays a crucial mediating role between PIED and KSB.

Furthermore, as was discussed before, in order to better clarify this relationship, social exchange theory can be used. The theory assumes that when organizations invest or provide opportunities for development to their staff, they are more likely to reciprocate in desired ways. In another words, PIED shows perceived work climate which might be conducive to the development of PsyCap of organization members. This means that employees tend to reciprocate by engaging more in KSB. Another path that may indirectly link PIED and KSB is related to a sense of belongingness. Investment in staff development might be perceived as a signal to employees that their employers value them and that the organization cares about their development and professional growth. Therefore, it has a positive effect on employees' sense of belongingness to the organization, which in turn may increase employees' confidence, self-efficacy and optimistic outlook. In addition, these positive psychological capacities may help

individuals become more open and willing to share their knowledge with others. Thus, PIED may be accepted as one of the predictors of KSB with regard to PsyCap enhancement.

RQ3: What is the moderating role of OID between PsyCap and KSB?

The finding suggested that OID plays a moderating role in path between PsyCap and KSB. To our knowledge, there is no past empirical evidence on the moderating effect of OID on the impact of PsyCap on KSB. This gap in literature can be partially justified by the empirical findings, which show inconsistent results for the relationships between PsyCap and employees' desirable workplace behaviors (Newman et al., 2014). In this work, we are able to test the proposed relationship. It was displayed that OID has a significant moderating impact on the path between PsyCap and KSB. Thus, the related hypothesis (H5) was accepted.

Although a several research has been carried out to examine the causal link between PsyCap and pro-organizational employees' behaviors, there has been relatively limited research on exploring this relationship from a contingency perspective (Luthans & Youssef, 2017; Newman et al., 2014). Previous empirical studies have identified several moderating factors that appear to influence the association between PsyCap and positive job-outcomes. Particularly, Avey, Wernsing, and Luthans (2008) have concluded that mindfulness moderates the association between employees' PsyCap and their positive emotions, in a such way that mindfulness positively interacts with PsyCap to enhance positive emotions. Other researchers determined that service climate moderates the association between individual-level PsyCap and their work or job related performance (Walumbwa, et al., 2010). Furthermore, the relationship between PsyCap and extra-role behavior is anticipated to be stronger when employees have high job autonomy. It is suggested that greater job autonomy might inspire individuals to show higher levels of extra-role behavior (Malik & Dhar, 2017). Another study investigated that emotional

intelligence plays a significant role in moderating PsyCap-OCB relationship. Namely, the results displayed significant path between interactions of PsyCap and emotional intelligence of OCB toward organization (Pradhan, Jena & Bhattacharya, 2016). A more specific study conducted among postgraduate students showed that family support moderates the path from PsyCap to subjective well-being. The results recommend that family support is important in building psychological resources and well-being (Nielsen et al., 2016). Lastly, Norman et al. (2010) indicated that OID moderates the link between PsyCap and OCB. Specifically, employees who were both high in PsyCap and OID are more eager to engage in OCB. Pursuing this research line, this study proposes that OID plays a key moderating role in effect of PsyCap on KSB. Namely, employees higher in PsyCap and OID will engage in the most KSB.

The research results explored that OID should be considered while examining the direct effect of PsyCap on KSB. There are some strong explanations for this phenomena to exist. Firstly, organizational members with high PsyCap are more eager to engage in pro-social behaviors when they have high OID, because a feelings of OID motivates people to see themselves within the borders of the group or team identity, and be a 'good citizen' (Flynn, 2005). Consequently, a higher OID may facilitate employees with higher levels of PsyCap to openly share their knowledge or ideas, due to strong internal aspiration to assist the organization. On the contrary, when employees have low OID level, they are less willing to participate in KSBs, because poor identity may demotivate employees' desire to work toward the aim of their group or team. Despite the fact that organizational members with high PsyCap may show good job-related performance, they may be less willing to engage in pro-organizational behaviors when they low identification with group or team. In addition, employees with high OID tend to display more OCB or KSB towards overall aims (Ashforth et al., 2008). Specifically, employees

are more willing to obey all rules and behave in the sake of the organization by participating in extra-role behaviors, such as KS.

RQ4: What is the moderating role of OID between PIED and PsyCap?

The analysis of this research shows that OID did not moderate the link between PIED and PsyCap. To our knowledge, there is no prior empirical evidence on the moderating effect of OID on the impact of PIED on PsyCap, This research gap can be explained in part by the fact that the relationships between PsyCap and its antecedents are not fully understood. Accordingly, different moderating variables should be introduced (Luthans & Youssef, 2017). This research work made an effort to fill this gap by testing the above hypothesis. However, the related hypothesis (H4) was rejected. As discussed in the literature review, a growing number of studies have identified factors that influence PsyCap of organization members, which means that this construct are open to development and may be subject change. However, there are comparatively limited studies that focus on examining factors that may moderate the association between PsyCap and its antecedents. For example, researchers have found that group learning behavior plays a moderating role between learning goal orientation and PsyCap. Namely, the positive relationship between the engineers' learning goal orientation and their PsyCap was stronger in teams which were high in learning behavior (Huang & Luthans, 2015). Other research has demonstrated that business support moderates the relationship between provision of microfinance and PsyCap. More specifically, scholars found that the degree to which microfinance provision effects the PsyCap of clients directly depends on the level of organizational support provided to them (Newman, Schwarz & Borgia, 2014). Research by Nielsen and colleagues (2016) reported that family support has a moderating effect on the link between instructor support and students' PsyCap (Nielsen et al., 2016). Moreover, Wu

and colleagues revealed that the relationship between abusive supervision and PsyCap is moderated by group trust (Wu et al., 2006). Thus, group trust mitigates the negative impact of abusive supervision on PsyCap. Building on this logic, this study suggested that OID plays a moderating role in the PIED-PsyCap link.

Initially, proposed hypothesis (H4) rests on the idea that investment in staff development may promote the development of PsyCap. In addition, we assume that this effect is not identical for all organization members, so that taking into consideration employees' level of OID may increase the impact of PIED when this level is high and, conversely, decrease it when it is low. It seemed reasonable that employees who perceive their organization's failures and successes as their own (high on OID) are more appreciative of organizational effort (PIED) and hence have a high level of psychological capacities. Namely, people are more prone to reciprocate (e.g., PsyCap) favorable treatment (e.g., PIED) when they feel a higher sense of indebtedness to their working place. However, contrary to our expectations, the results of the statistical analysis did not reveal any moderating effect of OID on the relationship between PIED and PsyCap.

There may be several plausible explanations for these findings. The first possible reason why OID did not moderate the effect of PIED on PsyCap may relate to employee's perception of fair treatment. As was discussed before, PIED can be defined as employees' views of their organizations' dedication to assist them to acquire new skills and competencies. When employees believe that their organization treats them fairly by providing equal opportunities to improve their skills and competencies, they are more likely to have higher PsyCap, without being identified with their organization. In other words, when there is a fair treatment for everyone to obtain individual skills and competencies, it is not necessary to be a 'patriot of your company' to exhibit more PsyCap. The second possible explanation why PIED is not sensitive to OID in

enhancing employees' PsyCap is a current working context of post-Soviet Kazakhstan. Specifically, for Kazakhstan's post-Soviet economy, a large number of employees are employed in the positions for which they were not formally trained (Fey et al., 2009). Hence, there is a high demand for training and development opportunities in organizations. For this reason, it may be assumed that when investment in staff development is made in such working context, OID will not play any moderating role in the link between PIED and PsyCap. The third plausible explanation for the lack of support for the hypothesized relationship might be due to the nature of PsyCap. This concept is comparatively malleable and open to influence; however, it is not so easily changeable to warrant being grouped with emotions and feelings (Luthans et al., 2004). This makes OID less relevant for moderating effect between PIED-PsyCap links.

In sum, based on the arguments and empirical findings highlighted above, we might conclude that organizations that have been effectively investing in employee development to build employees' PsyCap, no longer need the same level of management resources to enhance OID among its members. In other words, the success of PIED compensates for the perceived scores on the OID.

General Discussion

From this study, it was concluded that in order to better understand employees' knowledge sharing behavior it is necessary to focus on organizational (PIED) and individual factors (PsyCap, OID). With reference to the goals of this research work, the proposed model aims to foster employees' KSB in Kazakhstani organizations.

More specifically, the literature review reveals that such HRD practices as PIED can generate obligations on the part of the organization members to pay back in the positive manner (e.g., KSB). Thus, we first investigate whether PIED has a direct impact on employees' KSB. However, the research findings showed that PIED has no significant

effect on employees' KSB. The theoretical framework of this study may be useful in understanding these results. In particular, the research findings point out that positive psychological capital plays a crucial role in bridging organizational interventions and employees' positive behavior. Namely, PIED may facilitate employees' KSB through promoting positive PsyCap. Consequently, it can be concluded that in order to effectively facilitate KSB, organizations first need to adopt employee development practices to build individuals' PsyCap.

At the same time, to obtain a more complete picture of factors affecting employees' KSB, OID should be considered as a moderating variable. The research findings found that OID has a potential to moderate the indirect effect of PIED on KSB via PsyCap. Specifically, the research results reveal that OID significantly moderates the association between PsyCap and KSB, but does not moderate the relationship between PIED and employees' PsyCap. A possible major reason for the significant moderating effect of OID upon the association between PsyCap and KSB might be that the feelings of OID enables employees to perceive themselves within the group borders with common identity and be a good citizen. From another side, individual's perception of fair treatment can be seen as a possible explanation of why OID did not moderate the association between PIED and PsyCap. Simply, when there is a fair treatment for everyone to gain individual skills and competencies, it is not necessary to be a 'patriot of your company' to show more PsyCap.

In sum, promotion of KSB is a complex issue which should be examined from different perspectives. This study suggested that beyond organizational factors, HRM/HRD practitioners should consider individual factors that play an important mediating and moderating role in predicting KSB.

5.4. Contribution of the Study

(a) Theoretical Contribution

The current work contributes to the body of knowledge in the KM field in several ways. Its first contribution is the investigation of complex KS process in a post-Soviet Kazakhstan. Post-Soviet states – which have significant differences in economic, political, ideological and religious backgrounds – can provide ideal context for researchers to investigate how and why employees acquire and transfer new knowledge (May & Stewart, 2013). It is interesting to note that while knowledge hoarding is indubitably harmful to organizational functioning, it was viewed as rational and justifiable behavior in the Soviet culture (Michailova & Husted, 2003). Even up to present day, it seems that companies operating in Kazakhstan are unable to utilize the full potential of KS; to date, relatively little has been learned about factors that may influence employees' KSB in their post-Soviet national context. A new model was recently designed in an attempt to explore factors that may inhibit this prosocial behavior. It provides a valuable starting point for companies operating in post-Soviet Kazakhstan to rethink their practices and policies in order to enhance employees' KSB.

The next contribution of this research work to existing literature is the formulation of a theoretical model that incorporates notions of social exchange theory and social identity theory. To our knowledge, there is a lack of research that includes OID, PIED and PsyCap within the models of reciprocal workplace relationships. This research will widen our understanding of social exchange relationships between individuals and organizations by considering OID as a moderating variable. Specifically, the outcomes of this research provide strong support to the notion that social identity theory might complement social exchange theory in explaining employees' KSB. This indicates that several theories should be considered as a framework for exploring employees' motivation to share or withhold knowledge.

Thirdly, this work contributes to the body of knowledge by examining different factors that motivate organization members to share their knowledge. More specifically, this study combined external organizational factors (investment in employee development) and individual factors (psychological capital and organizational identity) within a single framework. Only recently, studies have started to consider organizational and individual factors simultaneously to better understand KSB (Hau, Kim, Lee & Kim, 2012; Jeon, Kim & Koh, 2011; Lee & Hong, 2014; Rosendaal & Bijlsma, 2015; Wang & Noe, 2010), or they have tested different indirect effects (Camelo-Ordaz, García-Cruz, Sousa-Ginel & Valle-Cabrera, 2011) or other contingency effects (Llopis & Foss, 2016) on KS.

This study follows this path of study by developing a comprehensive model that grounds the impact of PsyCap (mediator) and OID (moderator) in the PIED-KSB relationship. Existing work presents the indirect effect of PIED on KSB; but the proposed model, though it by no means intends to deny the PIED-KSB relationship, was developed to explore the other variables (PsyCap) that have an effect on the PIED-KSB relationship. Consequently, a further understanding of the direct and indirect relationships between these variables (PIED, PsyCap and KSB) contributes new knowledge to KM literature. The existing model explained the moderating and mediating effects of OID and PsyCap in the PIED-KSB relationship, which show that only investing in employee development may not be sufficient to enhance KSB if an individual's PsyCap and OID are ignored. It is hoped that the new model developed in this research provides a valuable contribution toward a comprehensive understanding of factors that may interactively influence KSB.

(b) **Practical Contribution**

The current competitive business environment demands non-stop transfer of knowledge and expertise between personnel to stay at competitive edges of the global market. Investment in staff development ensure that information and expertise flow smoothly within an organization. However, not all companies have been able to harvest the benefits of investment in employee development. Particularly, the findings of this work revealed that organizational practices in the form of investments in employee development play a crucial role in building PsyCap, which in turn facilitates KSB. More specifically, PsyCap plays an important mediating role in the relationship between investment in employee development and KSB, which means, the investment in employee development has an indirect impact on KS behavior through PsyCap rather than having a direct impact.

This study provides useful and practical guidelines for senior and top-level personnel to address the issue of employees' motivation to share knowledge. Organization decision-makers can ensure necessary training and coaching for organization members to have a high level of PsyCap in order to promote KSB. In other words, an organization's investment in professional growth and development of their staff can enhance their employees' PsyCap, which in turn leads to enhanced KSB. For this reason, HRD practices should be aimed at improving the PsyCap of employees rather than motivating KSB, since there is a mediational mechanism at play. Because PsyCap appears to be a malleable psychological resource, managers can first measure their employees' PsyCap and then make investments in employee development to improve organization members with low PsyCap. Furthermore, HR executives can adjust HRD practices depending on the level of employees' PsyCap. In other words, more extensive and specific training and development programs can be designed for those employees who have lower levels of PsyCap.

Through the key role played by PsyCap, organizations might use the results of their observations and measurements to adapt their HRM practices in general, and their staff selection practices in particular, towards attracting employees with greater psychological resources. That is, companies could recruit employees with positive psychological resources to deal with increasing job demands, which require active KS among organization members. This research shows that OID significantly changes the relationship between employees' PsyCap and KSB. Companies that wish to promote KSB cannot overlook the importance of employees' level of identification with their organization. HRD practices that address employees' PsyCap and identification with the organization will result in higher level of KSB. In other words, organizations that want to promote their employees' KSB would be well advised take steps to improve OID along with PsyCap.

The study revealed, moreover, that special attention is necessary to manage employees with low OID. High-level endeavors to build a strong organizational culture could be one way to strengthen employees' identity with the company. Building a team of employees with high PsyCap and with high OID will take foresight and resources.

In sum, it can be argued that KSB is a complex process and that any number of factors might interactively affect it. By understanding the aforementioned major factors, however, managers and executives will succeed in establishing more effective practices and policies that will stimulate KSB. The adoption of the proposed model has enabled KS to flourish. In general, the proposed model provides a novel approach for decision makers to promote PsyCap and KSB across various industries in Kazakhstan. By understanding and implementing this model, employees can be motivated to adopt other prosocial behaviors as well. This helps executives increase employees' overall productivity and work performance. At the meso-level, it may assist Kazakhstani firms to build human capital and to be world-wide competitive.

5.5 Study Limitations and Suggestion For Future Research

5.5.1. Study Limitations

Several limitations along with the directions for future work are presented in this section.

(a) ***Limited Context***

The research framework proposed in this study shows some further insights for the impact of PIED on employees' KSB in the developing country context, i.e., Kazakhstan. Obviously, developing countries are distinct from developed ones in many ways, for example in political, social, cultural and economic characteristics, etc. These varying contexts may affect the results of the research model. More specifically, knowledge acquired in one context may not work in another context, it may be due to major role of the contextual factors in explain or predicting organizational outcomes (Wasti, 1998). In another words, what may work in the developing country context (e.g., Kazakhstan), may not work in the context of developed country, mainly due to contextual variables (e.g., knowledge sharing hostile environment). Therefore to enhance the generalizability of the findings, the current research work should be replicated in other settings, such as developing or developed countries, which can actually improve the generalizability of this study. In addition, conducting comparative research will help us to better understand the differences between various contexts of developing and developed countries.

(b) ***Use of Survey Methodology***

Another limitation resulting from research methods used in this work is survey methodology. In this research, a quantitative method (survey questionnaire) was applied to assess employees' KSB. This quantitative method allows researchers to generalize their findings over a wider population (Guba, 1990) and identify and discuss the properties and phenomena of proposed relationships. Data collected by survey method helped to better illuminate the factors and relationships that influence KSB. However, this technique suffers from possible shortcomings such as non-controlled nature of the study and superficiality in covering complex traits. Another disadvantage of the survey is related to participants' inability or unwillingness to contribute to the research. Finally, breadth of the information obtained in a survey may result in significant trade-offs, in terms of depth (Blumberg, Cooper, & Schindler, 2014).

(c) ***Cross-Sectional Research Design***

Other limitation of this study is the cross-sectional nature of the data. In order to collect required data, survey questionnaire was carried out. The particular time frame while data was collected. Hence, the data might not be able to cover or reflect possible changes that may appear over time. In addition, KS is a complex social phenomenon. Cross-sectional research nature of the data might not be able to cover much of this richness and subtlety. In sum, future researchers may implement longitudinal design to gain a better understanding of the predictors, mediators and moderators of KSB as well as their changes over time.

(d) ***Use of Perceptual Data***

The next limitation is the usage of perceptual measure. The implementation of perceptional measures from a large number of employees has been argued as one of the

strengths of this research, there are still some limitations associated with data. Despite the fact that use of perceptual measurements in this study facilitates consistency, availability and generalizability, the quality of the data can suffer from the inclination of the respondents to show themselves in a more positive manner (Schwab, 2013). To develop indicators that are more accurate than the present one, the future studies might integrate the usage of perceptual data with other measurements.

5.5.2. Recommendations for Future Research

The results of this research work suggest that organizational and individual factors will continue to be important in understanding employees' KSB. This research extends from previous findings regarding the organizational factors-KSB link and individual factors-KSB link. In addition, this study contributes to better understanding how this behavior could be promoted. However, still more work is needed to understand these phenomena fully. Therefore, the following recommendations for future research direction are provided.

(a) ***Use of Longitudinal Study***

As was discussed in Chapter 3, this research applied a single cross-sectional research design to analyze the relationship between PIED, PsyCap and KSB. In this case, future research may benefit from empirically testing the proposed model with a longitudinal data or design, by tracking the dynamics of the employees' KSB, OID and PsyCap after the implementation of the PIED. In other words, longitudinal design that evaluates the association between PIED and individual-level (e.g., PsyCap, OID and KSB) may yield profound insights into not only the nature of the relationship, but also the time lag required to realize the benefits of the PIED. For instance, one may want to examine the dynamics of the PsyCap and KSB under the influence of PIED. A longitudinal research

design may help to get more conclusive evidence that PIED, in fact, predicts PsyCap and KSB. Lastly, longitudinal data has potential show different patterns that might emerge over time. If the measured variables (e.g., PIED, PsyCap and KSB) display simultaneous covariation, it means that they have a relationship over time (Saunders, 2011).

(b) ***Use of Alternative Methodologies***

This study used a quantitative survey to investigate individuals' KSB. This research method enables scholars to collect extensive amounts of data from large samples in a relatively short period of time, which can facilitate comparison and generalization of findings. Despite these advantages, the depth and richness of the sample can be compromised. In order to deal with these limitations, case study research can be applied to analyze the proposed social phenomenon within real life contexts and therefore can draw rich conclusions (Yin, 2017). In addition, in-depth interviews can be used to generate other organizational and psychological factors that predict employees' KSB. Data collected via this technique are rich in explanation and useful for in-depth exploration of complex social phenomena (Saunders, 2011). The interview can help to further support the findings of this study.

(c) ***Use of Multi-Respondent Data Collection Method***

The usage of single-respondent data does not allow the author to make a multi-faced overview of the relationship between PIED and KSB. Consequently, future research can focus on using multi-respondent research design. In addition, this method has power to provide high quality data relations between PIED, PsyCap and KSB. On the other hand, a lower response rate is related with this form of research design. This research analyzed how organizational and psychological factors jointly affect employees' KSB.

Future studies can use the multi-respondent approach in order to investigate KSB in terms of knowledge collecting and knowledge donating perspective (Dysvik et al., 2015). Moreover, this approach can alert scholars and practitioners to factors that promote or hinder KSB among organization members. It would be interesting to determine how KSB differs between staff members and upper-level employees (Foss et al., 2010).

(d) ***Use of Comparison Groups***

This study included only large companies operating in Kazakhstan. Therefore, small and medium enterprises operating in Kazakhstan can be used in other studies to know whether the outcomes of this research can be used different level of enterprises. This argument can be supported by the fact that the analyses of factors affecting KSB in small and medium companies are still fragmented (Cerchione, Esposito & Spadaro, 2016). The authors further argued that while the literature proposes different models concerning KSB in large companies, only recently literature has started to examine factors that affect KSB in small and medium companies. Therefore, appropriate comparison groups will enhance our understating of the research model within large and small organizations in Kazakhstan.

(e) ***Exploring the Relationship between HRD, PsyCap and KS further***

The evidence that no direct significant effect of PIED on employees' KSB was observed in this study indicates the need to explore this relationship further. Other intervening variables besides PsyCap can be inserted into the sequence. For example, other components of psychological resources such as self-esteem, self-reliance (Beckman, 2013) and emotional competency (Giardini and Frese 2006) can be used as a

mediating variables between PIED and KSB. The validity of these relations can be tested by collecting data from different sources of information (for example, from the employees and their supervisors).

This research investigates the impact of PIED on KSB. However, this work did not test the impact of other HRD practices. Future studies may explore other possible antecedents of KSB. For instance, HRD practices such as internal promotion, management and leadership development, career management, organizational development, and skill development can be used as potential predictors of employees' pro-organizational behaviors (e.g., KSB) (Bard and Kuvaas, 2008).

The present research work has attempted to contribute to the knowledge base in the field of KM by testing the role of OID as a moderator between PsyCap and KSB. Future researchers may also expand this research direction through examining potential moderator on the links between PsyCap and KSB. It is therefore important to examine the conditions under which moderating variables are likely to have impact. Future research that includes moderator variables such as organizational climate, organizational tenure, social capital, job complexity and leadership behavior would make valuable contribution (Luthans et al., 2015). Besides, this study introduced OID as a moderator between PIED and PsyCap. However, the data did not support the moderating effect of OID. Therefore, it is important to investigate conditions under which these relationships occur. Particularly, future research can examine such moderating variables as organizational or management support, organizational justice, organizational trust, empowerment, social networks, value-congruence and leadership behavior (Newman et al., 2014, Luthans et al., 2017). Lastly, it would be interesting to analyze these findings can be replicated in other settings. Research conducted in different cultures may bring an enhancement of our understanding of KM from a holistic perspective. In sum, future

studies should start to utilize more comprehensive approaches to evaluate the relationship of the given constructs.

5.6. Conclusion

The current study has intended to investigate the impact of PIED, PsyCap and OID on KSB. More specifically, it aimed to explore the mediating role of PsyCap in the link between PIED and KSB. Moreover, this work also attempted to examine moderating role of OID on the relationships between PIED-PsyCap and PsyCap-KSB. The following paragraphs present the main theoretical and practical contributions.

The current study has mad attempt to integrate two theories (social exchange and social identity) and positive psychological view by examining PIED, PsyCap and OID in predicting KSB. Firstly, the findings provide support for an indirect effect between PIED and KSB through PsyCap. It also extends the current literature by leveraging the role of PsyCap in a HRD-KSB link. Secondly, despite the fact that interaction effects were only partially supported, OID still has a potential to act as a moderator between organizational factors and psychological factors and KSB in a Kazakhstani context. Finally, this research provides a more holistic view of factors that may interactively influence KSB.

The results of this research could help HRM practitioners to design effective strategies to facilitate employees' KSB. More specifically, research findings suggest that individuals' PsyCap should be taken into account while designing HRD practices that foster KSB. In other words, investment in staff professional development can promote employees' PsyCap which, in turn, leads to enhanced KSB. Furthermore, organizations can help employees with lower levels of PsyCap through investment in employee training and development. More extensive training and development

programs should be organized for those organization members who have lower levels of PsyCap. It also should be argued that the research findings may help to improve the design of HRM selection practices. Companies should hire individuals with positive psychological capacities to cope with increasing job complexities, which require active KS. The current findings also reveal that OID moderates the link between PsyCap and KSB. Consequently, organizations that want to foster KSB should pay attention to employees' level of PsyCap and OID. In other words, HRD practices should be designed to improve both PsyCap and OID.

In sum, in order to effectively promote KSB, organizations must pay more attention to investment in employee development activities, which improve employees' PsyCap and OID. Similarly, the proposed model of this study provides guidelines for HRD practitioners to enhance employees' extra-role behaviors.

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LIST OF PUBLICATIONS AND PAPERS PRESENTED

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2) Kozhakhmet, S., Nazri, M., Jayasingam S., (2017). Fighting knowledge sharing hostility in post-Soviet Kazakhstan. Kuwait Chapter of the Arabian Journal of Business and Management Review, 6 (11), 19-30.