



CENTRUM PUCP
BUSINESS SCHOOL

MSM

MAASTRICHT
SCHOOL OF
MANAGEMENT

**Relationship between Absorptive Capacity, Learning Motivation, Knowledge
Acquisition, Labor Autonomy and Social Skills in the Transfer of Knowledge of in-
service Training Students**

By

Mayra, L Vega Chica

A Research Proposal Presented in Partial Fulfillment of the Requirements for the Degree of
Master of Philosophy and the Doctoral Candidacy.

Supervisor:

Dr. Iván De La Vega

CENTRUM PUCP BUSINESS SCHOOL

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ

MAASTRICHT SCHOOL OF MANAGEMENT

Santiago de Surco, october, 2020

Table of Contents

List of Tables.....	v
List of Figures	vi
Chapter 1. Introduction.....	1
Background of the Problem.....	4
Statement of the Problem	9
Purpose of the Study	13
Significance of the Problem	14
Nature of the Study	15
Research Questions	17
Hypotheses	18
Theoretical Framework	21
Definition of Terms.....	25
Assumptions.....	27
Limitations	27
Delimitations	28
Summary	30
Chapter 2: Review of the Literature	32
Documentation	32
Literature Review	34
The Ability, Motivation and Opportunity Model (AMO).....	35
Absorptive Capacity	38
Learning Motivation.....	39
Knowledge Acquisition.....	41
Knowledge Transfer.....	42

Social Skills.....	45
Labor Autonomy	46
Absorptive Capacity and Learning Motivation in the Acquisition of Knowledge	47
Knowledge Acquisition and its effect on Knowledge Transfer	48
Knowledge Acquisition and Transfer: moderating effect of Labor Autonomy	49
Knowledge Acquisition and Transfer: moderating effect of Social Skills.....	49
Critique of the Literature.....	50
Summary	55
Chapter 3: Method.....	57
Research Design.....	57
Appropriateness of Design.....	59
Research Questions	60
Hypothesis.....	60
Population.....	61
Informed Consent.....	63
Sampling Frame	63
Confidentiality.....	65
Geographic Location	66
Instrumentation.....	66
Data Collection.....	68
Data Analysis	69
Validity and Reliability	71
Summary	72
References	73
Appendix A. Consistency Matrix.....	115

Appendix B. Operationalization of the model constructions 117

List of Tables

Table 1 QS Latin American University Rankings 2020 – Ecuador.....	61
Table 2 Students from business and management programs and sample by higher education institution.....	65

List of Figures

<i>Figure 1</i> Conceptual model of the research	25
<i>Figure 2</i> QS Latin American University Rankings 2020 – Ecuador	30
<i>Figure 3</i> Literature review map.....	33
<i>Figure 4</i> Concept map.....	34

Chapter 1. Introduction

In the knowledge-based economy, information and knowledge are considered the main factors that promote economic development and of society in general (Caruso, 2016). Within the framework of knowledge management, knowledge transfer is one of the most relevant processes (Franco & Pinho, 2019). Evidence shows that knowledge transfer has a positive impact on organizational performance, as well as knowledge transfer facilitates the process of knowledge creation, learning and innovation (Franco & Pinho, 2019; Lehmann & Menter, 2016).

The knowledge transfer process occurs when there is a source and a receiver, where knowledge is transmitted from the source to the receiver who obtains and applies the knowledge (Marques et al., 2019). Knowledge transfer comprises the process in which knowledge management occurs between individuals, from individuals to external sources, from individuals to groups, between groups, and from group to institutions, provided that the recipient is able to develop a comprehensive analysis of what is transmitted (Alavi & Leidner, 2001).

To carry out this process, it is necessary to identify the type of knowledge, whether explicit or tacit, which differ according to their ability to structure (Argote & Fahrenkopf, 2016). Explicit knowledge is that which is documented and formalized through manuals, document reports, among others. Whereas, tacit knowledge refers to knowledge that is not written, but is based on professional experience; the intuition; learning; interaction and skills, therefore, it is more difficult to transfer (Garrick & Chan, 2017).

According to Joia and Lemos (2010) Knowledge transfer can be achieved through two strategies: (a) coding and (b) personalization. The encoding strategy is

operationalized through explicit knowledge that is transferred to a receiver through encoded materials (Tangaraja et al., 2016). The personification strategy involves tacit knowledge and consists of sharing knowledge from a sender to a receiver, that is, it implies an interaction (Tangaraja et al., 2016).

However, coding and personalization strategies can be done with or without the intervention of technology (Bhatti et al., 2016). The personalization strategy with technological intervention can be considered appropriate in the context of remote work or telework (Taskin & Bridoux, 2010). On the other hand, universities are an important source of knowledge for the industry. In the collaborative context between universities and industry, people play an important role in the transfer of knowledge, because they can transfer explicit and tacit knowledge (Chau et al., 2017). The capacity of human beings to think uniquely and creatively, together with their skills and experiences, make people valuable sources and promoters of knowledge (Liou et al., 2016). In this way, universities are considered as one of the most important external partners because they allow access to new cutting-edge knowledge, talents and skills by producing quality students (Goel et al., 2017).

Previous research has shown how university collaboration with companies facilitates the creation of knowledge, learning and innovation, and has a significant effect on the economic development of society (Weckowska, 2015). While the evidence on the effects of university-industry interaction is vast, the role of universities in knowledge transfer has focused mainly on knowledge commercialization practices through patents, licenses, contracts, joint ventures, spin-offs, etc. (Azagra-Caro et al., 2017; de Wit-de Vries et al., 2019; Perkmann et al., 2013). On the other hand, in general, research on knowledge transfer has been done mainly in the employee and organizational context (Korhonen-Sande & Sande, 2016; Liao et al., 2017).

However, the role of students in the transfer of knowledge from universities to the business sector has been scarcely discussed, even though they are considered one of the traditional channels (Bekkers & Bodas Freitas, 2008; Tho & Trang, 2015). Finally, regarding the field of knowledge, both academics and the business sector have developed little around the transfer of knowledge in social science areas such as business administration, where individuals with knowledge in the discipline transfer the knowledge learned generating sustainable competitive advantages (Mascarenhas et al., 2018).

Therefore, this study aims to analyze the transfer of knowledge under the strategy of customization that involves the participation of in-service training students from universities to the business sector considering the technological intervention given the need to implement the modality of teleworking. The in-service training students refer to the part-time students at the university and at the same time they work in the industry (Tho, 2017). Thus, the process of knowledge transfer involves three parts: (a) in-service training students, who work full-time and study part-time, as the channel for knowledge transfer, (b) universities as the source of knowledge, and (c) business organizations as recipients. It is considered important to take service training students as the unit of analysis because, for the purposes of this study, they are the holders of the knowledge to be transferred (Lee & Jung, 2018).

For this purpose, a model is proposed where the absorptive capacity and the learning motivation are considered as antecedents of the acquisition of knowledge and this, in turn, impacts directly on the transfer of such knowledge. This model is based on the theories of human resources management, specifically on the conceptual model AMO (Chang et al., 2012), which describes the ability-motivation-opportunity as essential components for the performance of the collaborators.

Background of the Problem

Knowledge is a complex concept that has generated great interest in the value it generates for the bearer. Knowledge is considered to be inside people's heads, not in computers or databases (Maravilhas & Martins, 2019). Knowledge can be defined as a summary of a series of information, knowledge and experiences developed in the professional and research field and applicable in practical environments (Wang et al., 2014). It is considered of great importance for its differentiating effect, both of people and institutions, from its competitors (Bloodgood, 2019).

Wang and Noe (2010) described knowledge as the result of information processed by individuals, which integrates ideas, experiences, facts and judgments relevant to personal, group and organizational performance. Knowledge is not only found in documents, it is present in people's memories and manifests itself through their actions and behaviors (Argote & Fahrenkopf, 2016). Knowledge represents an intangible asset whose acquisition constitutes the initial stage of knowledge management, aimed at obtaining and accumulating knowledge, while knowledge transfer describes a process of activities that allow the transfer of knowledge between universities and the business sector (Mabey & Zhao, 2017; Sung & Choi, 2018).

Institutions of higher education have always been scientific, cultural and moral symbols for social communities (Larrán Jorge & Andrades Peña, 2017). Since the last century, worldwide, universities began a process of transformation in relation to their work and their influence on the environment (Basgier & Simpson, 2019). The beginning of the transformation occurred in Europe when Humboldt began a change in the concept of knowledge, its social and economic value, and with it the role of universities in society (Elton, 2008). This transformation was further developed in Germany where its

relationship with the industry provided amazing potential for wealth generation (Robertson et al., 2015).

In Europe, universities were more oriented towards their economic responsibility in the region, while in the United States they were oriented towards creating opportunities for entrepreneurs, thus entrepreneurial universities became generators and users of knowledge (Leisyte, 2011). In North America, USA, this has happened through the generation and licensing of patents that produce significant returns for your benefit; in addition, in the 1980s, they established university technology transfer offices to commercialize their research results, through: patents, licenses, consultancies and joint ventures (Bengtsson, 2017).

Universities are agents of society that have much to offer since knowledge and human capital are key components for prosperity, inclusion and development (Lehmann & Menter, 2016). The new needs have generated that the universities produce changes in their organization, culture and leadership. As a result, there is an increase in the participation of academics with the business community, civil society, and government (Harrison & Turok, 2017).

On the other hand, the requirement of knowledge on the part of the industry is not recent and widely appreciated in the areas of natural and social sciences and the technological field (Mascarenhas et al., 2018). In the late 1970s, knowledge transfer increased as university patent offices were created and reorganized; new ways of obtaining value from intellectual property and capital ownership were produced; linkage programs were developed; joint projects were sponsored so that universities became involved in local and regional development plans (Geuna & Muscio, 2009).

Today, both developed and developing countries are making multiple efforts to improve strategies in knowledge transfer processes and even the commercialization of

knowledge from universities to industries (Meng et al., 2019). However, not all universities worldwide have had the same process of transformation. In Latin America, for many years, a teaching paradigm has been developed, where multiple universities are considered as repositories and disseminators of knowledge to students without generating significant changes to society (Guerrero et al., 2019).

Knowledge has become a fundamental resource that is created through creative processes reflected in knowledge models or innovation models (Meissner & Carayannis, 2017) The open innovation and triple helix model are very popular and at first sight seem to be very similar. However, open innovation is a model that assumes that companies can and should use external and internal ideas, as well as internal and external ways to the market, so that companies can develop their technology (Leydesdorff & Ivanova, 2016). In this way, they carry out their activities through formal channels often (J. J. Yun et al., 2016).

On the other hand, the triple helix focuses on generating the knowledge infrastructure of the innovations provided by university-industry-government relations through strategic alliances (Leydesdorff & Ivanova, 2016). Derived from the triple helix arise the models of quadruple helix that adds the fourth helix of "public" associated with the media, culture, values, lifestyles, art, etc. Later, the five-helix model based on the triple and quadruple helix that adds the "natural environment" emerges (Carayannis et al., 2018). In this way, the model proposes a framework for transdisciplinary and interdisciplinary analysis of sustainable development (Grundel & Dahlström, 2016).

Under the context of these theoretical and practical models, several strategic partnerships have been developed with the European region such as the European Union-Latin America and the Caribbean Foundation (EU-LAC) established in 2010 to generate intergovernmental partnerships with industry, academic and social sectors

(Ayuso, 2018). It currently has 62 members among the Latin American states and the members of the European Union. By 2014, the University-Industry-Latin America, Caribbean and Europe Network (RedUE-ALCUE) was created with the aim of promoting the transfer of knowledge to society. RedUE-ALCUE associates 25 higher education institutions from Argentina, Colombia, Chile, Costa Rica, Ecuador, Spain, Mexico and Peru (RedUE, 2020). The network operates through knowledge transfer offices, university liaison offices, regional innovation systems, among others (OVTT, 2020).

Knowledge transfer is a key factor in building the knowledge-based economy (Harrison & Turok, 2017). However, the ease of knowledge transfer depends on the type of knowledge, similarities in background and knowledge management capabilities (de Wit-de Vries et al., 2019). In its explicit character, knowledge can be transferred through prototypes, manuals or formulas. Its success will depend on the relevance in the application context (A. T. Alexander & Childe, 2013). On the other hand, the transfer of tacit knowledge requires an interaction, that is, a more direct collaboration (Roy & Mitra, 2018). Therefore, tacit knowledge has different mechanisms of transference since it requires includes a personal interaction (Tangaraja et al., 2016).

There are different mechanisms through which knowledge and innovative ideas are transferred between universities and companies (A. Alexander et al., 2020). The mechanisms are categorized according to the level of formality, whether they are formal or informal channels, as well as the level of interaction according to the type of tacit or explicit knowledge (Villani et al., 2017). First, we distinguish the formal channels without interaction such as transfer agreements, licenses, patents; the formal channels with personal interaction are identified research collaborations, contractual consulting, technical assistance and doctoral theses. On the other hand, the informal channels

without interaction are scientific publications, while the informal interactive channels are teaching activities, academic conferences and workshops, student practices, among others (Azagra-Caro et al., 2017; Fernández-Esquinas et al., 2016; Tangaraja et al., 2016; Vick & Robertson, 2018).

During the last years, the collaboration practices between university and industry have been done mostly through patents, licenses, joint ventures, among others (Azagra-Caro et al., 2017; de Wit-de Vries et al., 2019; Mascarenhas et al., 2018). However, little has been developed regarding knowledge transfer through informal channels such as in-service training students, which are full-time employees and part-time students, as a local transfer channel between the university and the organizations (Tho, 2017).

In general, knowledge is the element or object of transfer (Mabey & Zhao, 2017). However, for the knowledge to be applied under the exact characteristics, the source must select the appropriate channel of transfer according to the type of knowledge in order to improve its performance (Azagra-Caro et al., 2017). Similarly, it is necessary the contextual conditions in the transfer of knowledge as is the modality of telework (Taskin & Bridoux, 2010). All this is important in order to obtain the benefits of knowledge transfer, since the competitive advantage of a company lies mainly in its knowledge base beyond the amount of knowledge it owns (Liao et al., 2017).

This research will address to examine the influence of absorptive capacity and learning motivation on the process of knowledge acquisition in students from higher education institutions and subsequently evaluate its effect on knowledge transfer in companies where students work. Additionally, we study the possible moderating effect of students' social skills and the level of labor autonomy they enjoy in their working environment, which are ideal for improving knowledge transfer conditions in the context of teleworking

Statement of the Problem

In the literature, there is great interest in knowledge management as a strategy that generates competitive advantages for institutions (Ahmad et al., 2017). Franco and Pinho (2019) claim that knowledge transfer is a key concept to carry out the process of knowledge management, as theoretical development some academics have identified the stages involved, among them Nonaka (1994), Gold, Malhotra and Segars (2001) y Law y Ngai (2008). However, in order to foster the knowledge-based development environment, it is necessary to analyze the flow of knowledge, the sources of knowledge, the recipients, the channels of knowledge and the transfer situation (Argote & Ingram, 2000; Battistella et al., 2016; Cohen & Levinthal, 1990).

The studies developed in the university-business collaborative context, focus on the links between both institutions through formal agreements managed by technology transfer offices that have led to the commercialization of scientific knowledge, including patents, joint ventures, spin-offs (Perkmann et al., 2013; Schaeffer et al., 2020). According to Perkmann et al. (2013), The transfer of knowledge from universities to companies has been with respect to science, technology and mathematics (STEM) disciplines, so the literature on knowledge transfer in social disciplines is scarce. Similarly, studies on knowledge transfer have been carried out in different areas such as information systems, psychology, strategic management, but the literature on business knowledge transfer is limited (Balle et al., 2019; Lin, 2007; Tho & Trang, 2015; Zhang et al., 2017).

At the organizational level, several researchers have focused on analyzing the characteristics of knowledge transfer in companies since the study of social networks since the 1990s (Castillo et al., 2018; Zheng et al., 2016). From this perspective, social networking consists of an analysis and measurement of the links and relationships

between organizations and individuals associated with networks and collaborative activities (Loitz et al., 2017).

On the other hand, previous research has indicated that there is a significant relationship between human resource management and knowledge management (Gope et al., 2018). In the organizational context, the knowledge transfer process refers to the way employees in organizations share their knowledge, experience and other relevant contextual information with their colleagues (Lin, 2007).

The transfer of knowledge is considered an essential stage of knowledge to create value in inter-organizational networks (Sudhindra et al., 2017). However, knowledge transfer is a complex process that depends on a number of organizational characteristics and also on the type of management practiced (de Wit-de Vries et al., 2019).

Gope, Elia and Passiante (2018) state that organizational knowledge management begins with the acquisition of knowledge and then its dissemination within the organization and the cycle closes when that knowledge is effectively applied in the context of the organization. This perspective has been adopted by some authors to design models of innovation management and inter and intra organizational knowledge transfer through different formal and informal channels (Alford & Jones, 2020; Gasik, 2011).

However, studies on inter-institutional knowledge transfer have been carried out considering the institution as a unit of analysis, which implies that in order to carry out the application of the survey several conditions had to be met regarding its position and experience (Lee et al., 2015). Thus, respondents should be managers, project directors, among other senior and middle management collaborators (Chen et al., 2014).

Researchers in the area of social psychology affirm that the acquisition and transference of knowledge can be explained by three main factors: ability, motivation and opportunities (Alavi & Leidner, 2001; Blumberg & Pringle, 1982; Chang et al., 2012). The Ability, Motivation and Opportunity (AMO) framework has its origin in the high performance work systems of human resource practice management (Chang et al., 2012).

Under the ability-motivation-opportunity model, absorptive capacity and motivation in learning have been investigated as essential antecedents in the acquisition of knowledge. This model has been applied for the study at an intra-organizational level in the context of employee organization (Joia & Lemos, 2010; Lai et al., 2016; Park et al., 2014). However, the role of students in knowledge transfer has been little discussed although students have been emphasized as an informal channel through which knowledge transfer can take place from university to industry (Agrawal, 2001; Bekkers & Bodas Freitas, 2008; Tho & Trang, 2015).

The literature that develops the transfer of knowledge considering the student as an effective channel for the dissemination of knowledge is limited (Tho & Trang, 2015). However, Tho (2017) y Pletsch and Zonatto (2018), used the AMO model to conduct the study with similar characteristics has demonstrated consistent results. Minbaeva, Pedersen, Bjorkman, Fey and Park (2003) stated that one of the fundamental factors in effecting knowledge transfer is not the original knowledge of the source but the way and extent to which the recipient obtains the knowledge and applies it in their activities. For their part, Tho and Trang (2015) identifies two factors required for knowledge acquisition: a) learning motivation; b) absorptive capacity.

Absorptive Capacity allows you to identify, learn and understand new and innovative knowledge from external sources that are important for your current work

(Cohen & Levinthal, 1990). In the context of this study, the Absorptive Capacity of the students can be defined as the ability of the students to exploit the knowledge acquired in the superior institution, identifying the value of this knowledge, assimilating it, combining it with the existing knowledge and later applying it in the tasks that it develops in the company where it works (Mariano & Walter, 2015).

General motivation leads an individual to make multiple efforts in order to achieve an objective of any nature (Vandergoot et al., 2018). Learning motivation includes needs, instinct and will. This motivation acts directly as an impulse that leads students to learn, generates a need to motivate and in turn guides the student in learning (Darling-Hammond et al., 2019). Therefore, the more motivated an individual is in learning, the greater his or her learning outcomes (Won et al., 2020).

The acquisition of knowledge stimulates and accelerates the development of capacities for the exploitation of opportunities which generates advantages for the student and favors the achievement of proactive initiatives (Lane & Lubatkin, 1998). In addition, it broadens the knowledge base of individuals and offers greater opportunities for the use of knowledge in the performance of their tasks (Chuang et al., 2016). The knowledge and skills acquired reflect the capacity of the students (Tho & Trang, 2015). Students' belief in the skills they acquire is important to the effectiveness of knowledge transfer (Al-Emran & Teo, 2020).

Therefore, the purpose of this work is to deepen this process of knowledge transfer, through a model that evaluates the impact of learning absorptive and motivation capacities on the acquisition of knowledge and the impact that this generates in the transfer of knowledge applied to a little studied context such as Ecuador. Additionally, in accordance with the suggestion of some, a contingent perspective is evaluated, integrating personal and organizational characteristics as moderating

variables (Demortier et al., 2014; Kehoe & Wright, 2013). The moderating variables included correspond to social skills and labor autonomy, which are relevant in the context of distance work. To this end, we study the perceptions of in-service training students in private higher education institutions in Ecuador.

Purpose of the Study

The present research examines the influence of absorptive capacity and learning motivation on the process of knowledge acquisition in students from higher education institutions and subsequently evaluate its effect on knowledge transfer in companies where students work. Additionally, we study the possible moderating effect of students' social skills and the level of labor autonomy they enjoy in their working environment, which are ideal for improving knowledge transfer conditions in the context of teleworking.

In order to answer the questions and fulfill the objective of the study, we propose a conceptual model based on the AMO model, which has its origin in the high performance work systems of human resources practices management (Chang et al., 2012). For the study of knowledge transfer, the strategy of personalization is used, which implies a social interaction either physically or through technological connections of the in-service training students of private higher education institutes located in the main cities of Ecuador: Guayaquil, Quito and Cuenca. This work focuses on this type of students, since they are supposed to be part of an organization, therefore, the application and use of new knowledge is more intentional and can be carried out in their daily activities (Lee & Jung, 2018).

Significance of the Problem

While it is true that the literature on university-business linkages is not a recent topic, little has been developed regarding the role of universities in knowledge transfer (Perkmann et al., 2013; Marulanda et al., 2019). On the other hand, these works have a priority focus on STEM-type scientific, technological and mathematical disciplines, while knowledge transfer in non-STEM disciplines in business contexts is an area of scarce study (Perkmann et al., 2013; Tho & Trang, 2015). Today, universities have become centers that promote the creation and transfer of knowledge between universities, industries and the government (Paoloni et al., 2019; Shi et al., 2020; Zunda et al., 2020). Under the personalization strategy, in-service training students maintain constant interaction with others in the various environments in which they perform (Raza et al., 2018). In this way, internationalization of knowledge is achieved through active learning and socialization of knowledge through direct interaction with others in organizational settings (Suseno & Pinnington, 2018).

Similarly, considering students as intermediary agents of knowledge transfer between organizations and universities is a topic that is at an early stage and requires further analysis (Tho & Trang, 2015; Wang et al., 2020). In this regard, work studying the role of students in knowledge transfer has been carried out in developed countries such as the United Kingdom, the United States and other European regions (Ankrah et al., 2013; Hewitt-Dundas, 2012; Urbano & Guerrero, 2013); and also in other developing economies such as Vietnam, Malasia, Pakistán, Brasil, etc. (Pletsch & Zonatto, 2018; Raza et al., 2018; Sadiq Sohail & Daud, 2009; N. Tho, 2017; N. D. Tho & Trang, 2015). Therefore, Latin American literature is still scarce and in general no study, so far, takes as a unit of analysis the undergraduate or graduate students of universities in the process of knowledge transfer from university to business.

Therefore, this study contributes to the literature in different ways. First, this research is a pioneer in Ecuador for the study of knowledge transfer, in administrative and business areas, between universities and companies that places the student in service as the main channel. Secondly, it complements the previous literature since the selected unit of analysis, graduate students, has more experience, confidence and dedication in the application of knowledge (Nguyen et al., 2017; Peng, 2019), as well as the level of studies in undergraduate degrees has an influence on their absorption capacity and this in turn on the acquisition of knowledge (Yao-Ping Peng et al,2019). Thirdly, several factors that impact the acquisition of and the process of knowledge transfer between companies and higher education institutions are studied. Finally, this considers a new factor that would facilitate the process of knowledge transfer from the perspective of social skills of the student himself in service under the modality of telework (Y.-J. Yun & Lee, 2017; Van Steenbergen et. al., 2018).

From a practical perspective, the results contribute to the three agents involved in knowledge transfer: in-service training students, educational institutions and organizations. In-service training students can have a greater understanding of the skills they need to improve their learning and application of knowledge. Educational institutions will have a better understanding of and approach to developing competencies in their students. While, organizations will be able to identify relevant factors in knowledge transfer and even for the context of teleworking, create ideal conditions for knowledge flow and maintain a commitment to take advantage of this cooperation.

Nature of the Study

This study starts from the positivist philosophy to causally describe the relationship between the constructs and variables that describe the processes of

obtaining and transferring knowledge (Saunders et al., 2016). The research is developed with a quantitative methodology that is executed through the descriptive analysis of the data and the application of statistical models to justify inferences (Usakli & Kucukergin, 2018).

A non-experimental sampling design of correlational type was used, since the variables of the study will not be manipulated and describe the current situation of the capacity of absorptive and motivation of learning, its influence in the process of acquisition of knowledge and its effect in the transference of knowledge.

The study contributes to the strengthening of the theory following a deductive logic, since it starts from a literature review to deduce and understand the relationship between the factors studied (Saunders et al., 2016). In order to answer the research questions and hypotheses, the perception of students from prestigious in private institutions of higher education who were in an undergraduate or graduate program and are working.

To obtain the data of the variables used in the study, a measurement instrument was selected by Chang et al., (2012); Field and Harris (2004); Noe and Schmitt (1986); Wilson, Lizzio and Ramsden (1997); Ko, Kirsch and King (2005); Hackman and Oldham (1980); Ferris et al. (2001) to capture the perceptions of the students of the universities participating in the study. A pilot test will be developed to evaluate the structure of the questionnaire, its relevance and understanding of the questions in order to reduce errors in data collection (Stutz et al., 2017). Afterwards, the questionnaire will be sent to the selected sample through electronic means. It is necessary to clarify, that the first parts of the survey set out the necessary indications, the informed consent and the purpose of the research.

At the data analysis stage, descriptive studies will be conducted to identify possible errors such as missing values, outliers, and data behavior patterns. The measurement model will be adjusted through a Confirmatory Factor Analysis (CFA) to improve the constructs through a robust statistical method (Crede & Harms, 2019). Subsequently, the hypotheses of the proposed structural model will be contrasted through the estimation of a structural equation model (MES) (Hair Jr et al., 2017).

Descriptive analysis of the information collected in the survey was done using the SPSS statistical software package. While, for the Confirmatory Factor Analysis and the estimation of the Structural Equations Model, the software SmartPLS is applied, which allows estimating path models with non-observable variables using the statistical technique of partial least squares (Kumar & Purani, 2018).

Research Questions

The review of the literature on the transfer of knowledge from university to industry made it possible to focus the analysis on the possible determinants of the knowledge acquisition process and the incidence of social skills and labor autonomy. Based on this, the research questions are the following:

- What is the effect of absorptive capacity on the knowledge acquisition of university in-service training students?
- What is the effect of learning motivation on the knowledge acquisition of university in-service training students?
- To what extent does the knowledge acquisition of university in-service training students influence the transfer of knowledge to companies?
- How do the social skills of university in-service training students influence the transfer of knowledge to companies?

- How does the level of labor autonomy enjoyed by university in-service training students influence the transfer of knowledge to companies?

Hypotheses

The present investigation will seek to contrast the hypotheses derived from the relationships proposed in the literature. In the transfer of knowledge from the university to industry, academics suggest a direct effect of knowledge acquisition, while the literature differs in the dimensions that could contribute to the process of obtaining knowledge (Raza et al., 2018; Tho, 2017). However, after a vast theoretical review, the following hypotheses are established that correspond to the defined conceptual model:

H_1 : Absorptive capacity has a positive effect on knowledge acquisition

H_2 : Motivation in learning has a positive effect on knowledge acquisition

There are various sources to gain information, the writing recommends a few factors that emphatically influence this cycle. Lichtenthaler (2016) examined the connection between information procurement and absorptive limit. Since, absorptive limit alludes to an individual's capacity to secure, absorb, change and adventure new information in the business activity (Zahra & George, 2002). Understudies' absorptive abilities to perceive and see new information are basic during the time spent information securing (Scaringella & Burtschell, 2017).

Since, procured information requests absorption into the current information base; therefore, a person's earlier information, aptitudes, and understanding influence their capacity to partake in the information securing measure (Sarala et al., 2016). Albeit absorptive limit is significant for information procurement, the way toward acquiring information could be more unpredictable without inspiration (Rusly et al., 2015). The

writing has indicated how understudies' absorptive limit and learning inspiration are basic to powerful learning results (Lane et al., 2001).

H₃: Knowledge acquisition has a positive effect on knowledge transfer

The cycle of information move includes a few sections, including beneficiaries and wellsprings of information (Tangaraja et al., 2016). Under the focal point of this examination, advanced education organizations go about as the wellspring of data, organizations as the beneficiaries and in-administration preparing understudies are the channels. Argote and Fahrenkopf (2016) highlighted the importance of identifying and possessing relevant knowledge in order to execute a successful knowledge transfer.

The knowledge and skills acquired reflect the capacity of the students (Tho & Trang, 2015). Students' perception of the skills they acquire is important to the effectiveness of knowledge transfer (Howard et al., 2018). Several studies have found that knowledge acquired from educational institutions is a precursor to knowledge transfer (Raza et al., 2018; Tho, 2017; Tho & Trang, 2015). In the AMO framework, students are agents who acquire the knowledge provided by the educational institution, and the level of knowledge acquired plays a fundamental role in helping the agents and students who work to improve their performance (Blumberg & Pringle, 1982; Cohen & Levinthal, 1990). Tho and Trang (2015) suggested that increasing the level of knowledge acquired by students increases the probability that this new knowledge will be applied in companies; that is, there will be higher levels of knowledge transfer between educational institutions and companies, which generates a better performance of the three agents involved.

H₄: Social skills have a positive effect on knowledge transfer

H₅: Labor autonomy has a positive effect on knowledge transfer

Labor autonomy generates opportunities for workers to apply new and valuable knowledge provided by external sources, in the context of the study educational institutions, in the work they do in companies (Tho, 2017). Therefore, labor autonomy plays an important role in strengthening and improving the acquisition of knowledge and its subsequent transfer (Raza et al., 2018).

Additionally, to deepen the results of the structural model estimation, moderating variables will be included in the conceptual model. According to the review of the literature, the following proposals were made:

H₆: Social skills positively moderate the relationship between knowledge acquisition and knowledge transfer

The literature does not delve into the influence of social skills on the level of knowledge transfer in the university-industrial context. Several authors have suggested a possible relationship (Raza et al., 2018). Levy and Reiche (2018) demonstrated how the social skills of their employees have a significant positive effect towards the effectiveness of knowledge transfer in multinationals. Thus, it is believed that a student's confidence, respect, and friendship, which are products of social skills, can cause a higher level of knowledge transfer.

H₇: Labor autonomy positively moderates the relationship between knowledge acquisition and knowledge transfer.

The role of labor autonomy has also been verified by previous research in knowledge transfer and related areas. For example, Tho (2017) confirmed the existence of a positive effect on the impact of acquired knowledge on knowledge transfer. In a similar context, Llopis and Foss (2016) found that labor autonomy positively moderates the impact of the cooperative climate and the transfer of knowledge among employees.

Volmer and Niessen (2012) found that labor autonomy positively moderates the relationship between the quality of leader-member interaction and creative participation at work.

Theoretical Framework

This study compiles several theoretical perspectives that converge to create an appropriate conceptual model, among them: (a) knowledge management, theories of university-industry collaboration, (c) human resource management, (d) motivation, (e) learning organizations and (f) theories of dynamic capabilities. Academics recognize two types of knowledge: explicit and tacit (Levallet & Chan, 2019). Explicit knowledge is that which can be clearly captured, stored and accessed through manuals and physical or digital documents (Ellis & Roever, 2018). On the other hand, tacit knowledge comprises individual mental models that include paradigms, beliefs and points of view, as well as specific knowledge such as skills and abilities (Terhorst et al., 2018).

Levallet and Chan (2019) mentioned that the difference between these two types of knowledge lies in the ability to share it effectively. This author believes that explicit knowledge lies in facts, rules or policies that can be written down and shared without discussion, while tacit knowledge is in people's minds and its transfer requires contact (Levallet & Chan, 2019).

Nonaka and Takeuchi (1994) established two elements present in tacit knowledge that include technical and cognitive aspects. The technical element of tacit knowledge refers to the specific knowledge an individual has, while the cognitive elements capture the mental models with which people guide their path in the world. Subsequently, Leonard and Insch (2005) added a third element that alludes to the social dimension of tacit knowledge. This third aspect includes the area of social interaction

and arises from the fact that people mostly act in social contexts (Leonard & Insch, 2005).

From this perspective, the transfer of tacit knowledge is considered the most important part of knowledge management (Guo et al., 2018). However, this knowledge transfer is a process of interaction from a source to a receiver, so that this receiver acquires and uses this knowledge for his benefit (Chang et al., 2012).

The socialization of knowledge through direct contact is considered a convenient technique for sharing information (Dingler & Enkel, 2016). However, given the increasing need and popularity of distance work, it is emphasized that knowledge can be shared among people by other means such as electronic communication (Leung & Zhang, 2017). In this way, information technologies are strategic tools to share information in a reliable and effective way (S.-N. Kim, 2017).

In this study, the sources of knowledge correspond to the institutions of higher education and as a recipient of knowledge transfer to the business community, making reference to the collaborative interaction between university and industry (Tho & Trang, 2015). This process is carried out through in-service training students, an informal channel that is little documented but functional and practical according to various authors (Raza et al., 2018; N. Tho, 2017).

The university-industry collaborative theories have as main objective to promote the transfer of knowledge through the interaction between any part of the educational system and the industry (Bekkers & Bodas Freitas, 2008). Since its inception, this collaborative relationship has become the means to increase the stock of knowledge of the organizations (Cricelli & Grimaldi, 2010).

In recent years, there has been a significant increase in the study of the results of the interaction between industry and science (Goel et al., 2017). This increase arises due to the various pressures facing both the business sector and universities. Companies constantly face challenges due to the imminent technological advance, the increase in global competitiveness and the shorter life cycles of products (Bstieler et al., 2017). For their part, universities are challenged to constantly create new knowledge and the pressures of rising costs and funding problems have increased the need to seek relationships with businesses that allow them to take the lead in different areas (Calcagnini et al., 2016).

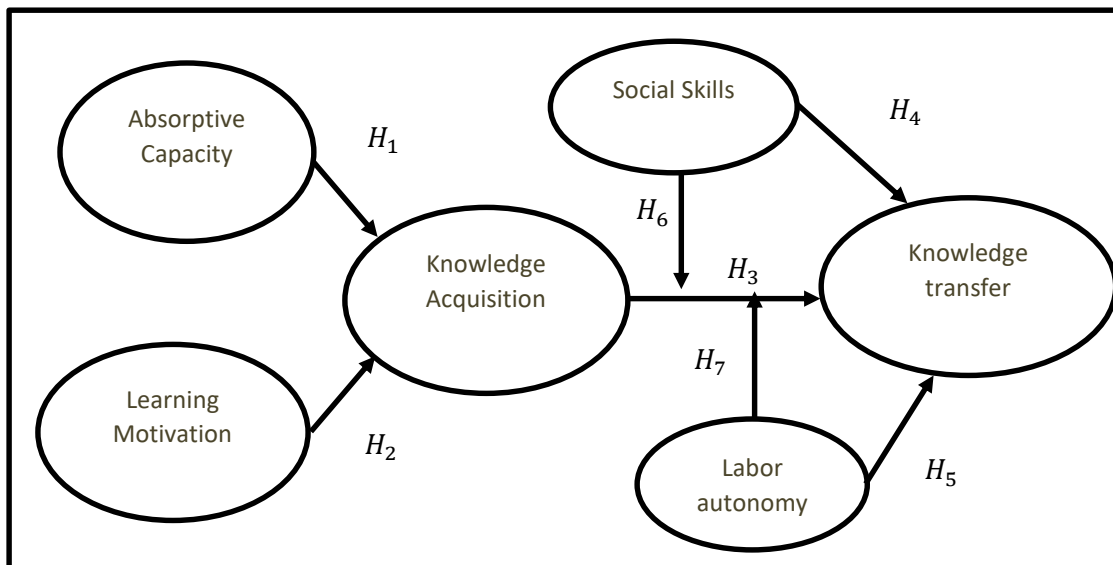
In the collaborative context, interactions between universities and the productive sector are also carried out through the participation of students, being part of a process that allows companies to share risks and benefits (Toro et al., 2016). In this regard, the literature starts with a model called AMO that identifies an individual's abilities, motivations and opportunities and their effect on performance (Tho, 2017). This model is part of the human resources management systems that highlights the role of employees as a source of value creation for companies (Chang et al., 2012).

In the same vein, academics introduce the concept of dynamic capabilities by considering the absorptive capacity of students as a background to the acquisition and transfer of knowledge (Tho, 2017; Tho & Trang, 2015). Absorptive capacity is a concept generally applied at the organizational level by Cohen and Levinthal (1990). Under the structure of the AMO model, CA comprises a cognitive skill that allows students to learn effectively when studying at their universities and also allows them to apply their acquired knowledge in the work environment.

Moreover, the model includes the learning motivation of the students. This motivation refers to the students' willingness to perform academic activities (Di Serio

et al., 2013). Since, students with high learning motivation are more likely to capture effective learning strategies that facilitate the acquisition of knowledge from their educational institutions (Vandergoot et al., 2018). In turn, the learning motivations of students have the power to increase the performance of each individual in the organization where they work (Menges et al., 2017).

Under the context of distance work, there are several factors that can affect knowledge transfer due to less social interaction and less contact with the organization (Meroño, 2016). In light of this, information technologies provide new methods of virtual communication where social skills are needed to facilitate communication with customers, partners, suppliers, co-workers, among others (Lieke et al., 2012). On the other hand, it has been shown that teleworking provides the worker with a sense of autonomy and control over tasks in the work environment (Masuda et al., 2017). In turn, this perception of labor autonomy can improve the conditions of the in-service training student for the application and transfer of knowledge.

Figure 1*Conceptual model of the research*

Adapted from: *Evidence of the effects of psychological capital on the transfer of knowledge from accounting students to business organizations* (p. 1829) by Pletch and Zonatto (2018), *Journal of Knowledge Management*. *Knowledge transfer from business schools to business organizations: the roles absorptive capacity, learning motivation, acquired knowledge and job autonomy Introduction* (p. 1243) by Tho (2017), *Journal of Knowledge Management* and *Social skills as a moderator between R&D personnel's knowledge sharing and job performance* (p. 388) by Yun and Lee (2017), *Journal of Managerial Psychology*.

With the aim of contributing to the literature on knowledge transfer, this study evaluates the impact of learning absorptive capacities and learning motivation on the acquisition of knowledge by in-service training students and in turn their relationship with knowledge transfer in business environments. However, due to the multiplicity of factors that may affect this relationship including the context of teleworking, certain variables such as social skills and labor autonomy that in-service training students possess are included to assess their effect on knowledge transfer and also under the role of moderating variables.

Definition of Terms

To facilitate the understanding of the study, the factors considered in the theoretical model are defined:

Knowledge transfer (KT). According Pletsch and Zonatto (2018) consists of the process of disseminating knowledge between two parties, be they individuals, teams, departments or companies, where one party receives and applies the knowledge provided by the other party, in this process, the recipient must be able to adapt the new knowledge to meet the needs of the organization.

The acquisition of knowledge (AK). Lane and Lubatkin (1998) defined that stimulates and accelerates the development of skills for the exploitation of opportunities which generates advantages for the student and favors the achievement of proactive initiatives.

Absorptive capacity (AC). According to Mariano and Walter (2015) defined as the ability of students to exploit the knowledge acquired in the higher institution, identifying the value of such knowledge, assimilating it, combining it with existing knowledge and then applying it in the tasks it develops in the company where it works.

Learning Motivation (LM). Furió et al. (2015) defined that the students' level of motivation reflects their commitment to attend and study the content of a program of study, as well as the student's desire to contribute, learn and accept the experience generated by the training program in the development of their profession.

Social Skills (SS). According to Ferris et al. (2001) and Lans et al. (2016) defined that these skills reflect a person's ability to understand the feelings, thoughts, and behaviors of others in social situations and to persuade or influence them; therefore, it is considered one of the most important competencies for successfully interacting with others.

Labor Autonomy (LA). Hackman and Oldham (1980) is conceived as the degree to which the employee is given freedom, autonomy and discretion to make decisions in his or her work.

Assumptions

The capacity that students have to link with the industry allows them to respond to its needs in optimal times (Howard et al., 2018). Therefore, it is possible to assume that these professionals are able to answer the questions of the measuring instrument. In the same way, it is assumed that the professional participates voluntarily in the research, gives informed consent, and provides truthful answers.

In research there are proxies for measuring absorptive capacity, motivation in learning, acquisition and transfer of knowledge. Therefore, it is assumed that through the use of indicators complete and reliable scales can be obtained for the study of knowledge transfer. In addition, it is considered that the theories of absorptive capacity, mainly associated with the business environment, are applicable skills in graduate students (Tho & Trang, 2015).

Finally, it is assumed that the perception of professional students at the undergraduate and graduate levels of universities, regarding the acquisition and transfer of knowledge, is not differentiated by gender and age. It is also assumed that all the universities that participate in the research comply with the quality standards according to the Council of Higher Education, a regulatory institution in Ecuador, and that their programs and careers were created based on relevant studies considering academic aspects and labor market needs, according to the area of academic offerings.

Limitations

An important limitation is that the study does not evaluate other characteristics related to the parties involved, higher education institutions and business organizations, which can contribute to the effective process of knowledge transfer. For example, teaching and learning methods that directly affect students' knowledge acquisition and

also organizational characteristics such as organizational culture and work climate (Chang & Lin, 2015; Llopis & Foss, 2016). Furthermore, there is no specification regarding the effectiveness of knowledge transmission at the level of economic activity and size of the companies.

The study developed is based on the direct perceptions of in-service training students, being the only source of information consulted. Therefore, there is a risk of distortion of the response in the perceptions of the students surveyed. This bias is defined as a risk of social desirability that consists in the tendency to give a good image of oneself in response to social pressures, therefore, it constitutes a limitation for obtaining truthful information (Holtkamp et al., 2019).

In the literature regarding knowledge transfer, studies are mainly based on cross-sectional data. This research follows the same line and analyzes the theoretical model according to a unique temporality, therefore, the present study is limited in establishing a causal relationship between the factors studied.

Delimitations











The present study was carried out from cross-sectional data, that is, these were obtained in a certain time, therefore, the factors could influence different measures in the future. The research analysis unit is made up of in-service training students, part time, from higher education institutions, private universities, located nationwide in Ecuador, according to the Top 10 of the Quacquarelli Symonds ranking (2020) as shown in figure 2, who study a third or fourth level training program in business and business administration areas and who work in the business sector in full time. In this way, undergraduate and graduate students from other specialties are not considered in the institutions.

The research starts from the conceptual of AMO model, and addresses the perceptions that in-service training students have regarding their capacity to absorb and motivate learning as dimensions of the knowledge acquisition process and its subsequent impact on knowledge transfer to the organizations where they work.

Following the recommendations presented by several authors, we include moderating variables such as social skills and labor autonomy, which can modify the intensity of the relationship between knowledge acquisition and its subsequent transfer of knowledge in the context of teleworking.

Figure 2

QS Latin American University Rankings 2020 – Ecuador

2020	University search	Ecuador	Rated only
=55	 Universidad San Francisco de Quito (USFQ) More	Ecuador	
64	 Escuela Superior Politécnica del Litoral (ESPOL) More	Ecuador	
=75	 Pontificia Universidad Católica del Ecuador (PUCE) More	Ecuador	
=98	 Escuela Politécnica Nacional More	Ecuador	
139	 Universidad Central del Ecuador More	Ecuador	
161-170	 Universidad de Cuenca More	Ecuador	
171-180	 Universidad de las Fuerzas Armadas ESPE (Ex - Escuela Politécnica del Ejército) More	Ecuador	
171-180	 Universidad Técnica Particular de Loja More	Ecuador	3★ RATING
191-200	 Universidad Espíritu Santo More	Ecuador	4★ RATING
201-250	 Universidad de Las Américas Ecuador More	Ecuador	

Note. Reprinted from *QS Latin American University Rankings 2020*

(<https://www.topuniversities.com/university-rankings/latin-american-university-rankings/2020>).

Copyright 2020 by QS.

Summary

Knowledge is one of the most valuable resources both at individual and organizational level, it constitutes a differentiating element against rivals and a promoter in the generation of competitive advantages. Academics distinguish two ways of expressing knowledge: explicit and tacit. Explicit knowledge is basically found in documents, while tacit knowledge comprises the mental models and specific knowledge that are part of the individual, and therefore its transmission is more complex.

Within the framework of knowledge management, knowledge transmission is one of the most important processes in the literature. In the university-industry collaborative context, knowledge transfer facilitates the processes of knowledge creation, learning and innovation for both agents and also has a direct effect on the development of society.

Although the study of knowledge transfer in university-business interaction has been widely studied, there are several aspects that have not been considered. Studies are generally focused on STEM-type areas of scientific, technological and mathematical knowledge and are scarce in non-STEM disciplines such as administrative sciences. Finally, jobs that consider service training students as key agents in the process of knowledge transfer are scarce, therefore, it is an area of study that requires further analysis.

Therefore, this study undertakes an empirical analysis in order to contribute to Latin American literature on the processes of knowledge transfer in university-industry interaction. In order to contrast the hypotheses raised, a conceptual model is proposed that evaluates the absorptive capacity and learning motivation as a background for knowledge acquisition and at the same time the impact that this knowledge generates in the transfer.

It is considered that the study of knowledge transfer in university-industry cooperation contributes to the three agents present, which are: in-service training students, higher education institutions and the Ecuadorian business community. Since, it will generate a better understanding of the skills, competencies and conditions that must be enhanced in the transfer of knowledge in order to take advantage of all the benefits generated by this process.

Chapter 2: Review of the Literature

This chapter aims to review contributions from previous research an overview of the concepts that support the related variables on which this study is developed. Then, it analyzes and reviews the relevant literature related to the absorption capacity and the motivation of learning in the acquisition of knowledge and its influence on the transfer of knowledge, social skills and labor autonomy as moderating variables.

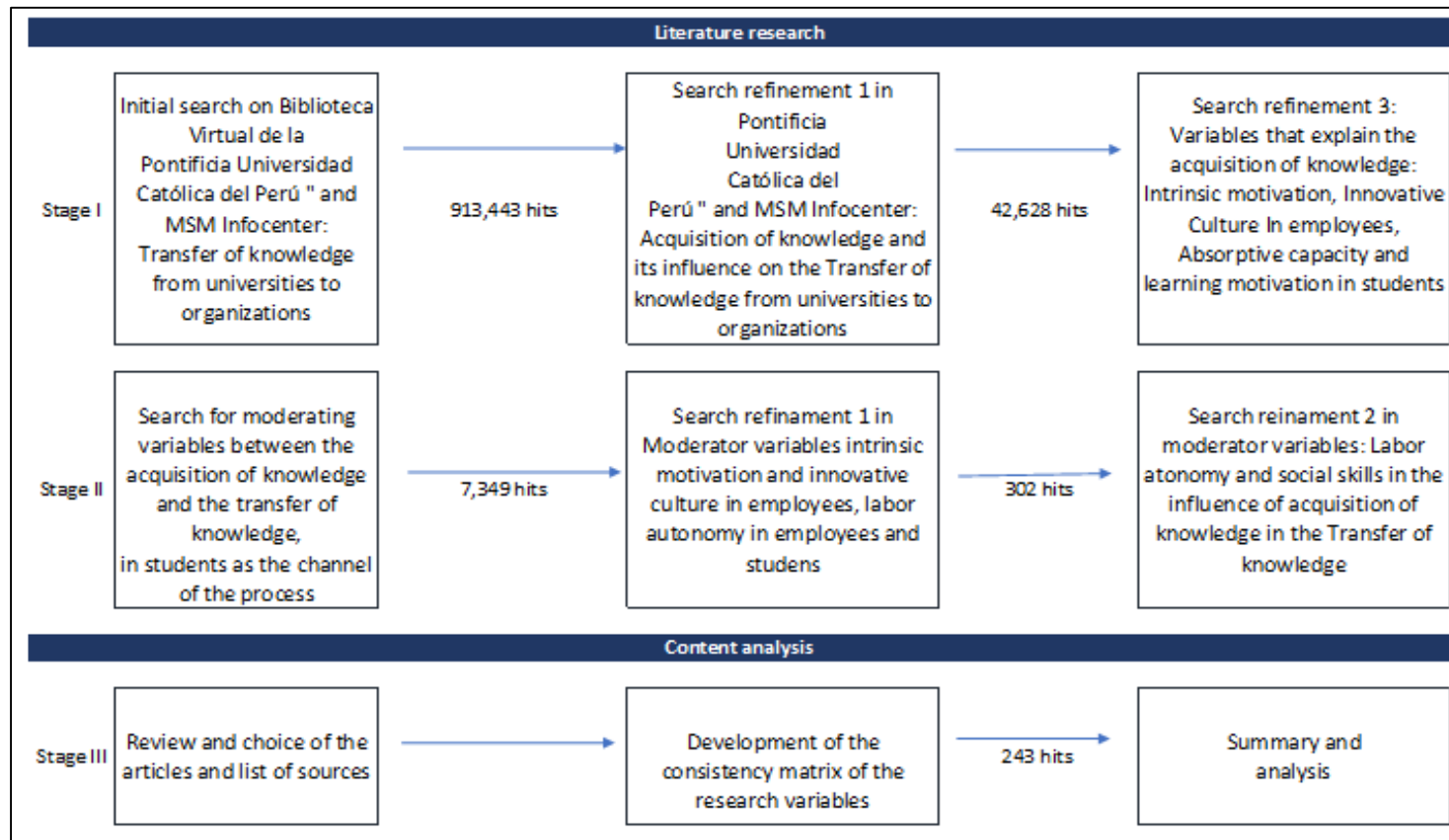
Documentation

The system utilized for the literature review is shown in the following figure. The closest keywords were selected according to the different concepts related to the variables of this research. Mainly Acquisition of knowledge and its influence on the Transfer of knowledge, from educational institutions to organizations, as well as moderating variables. These keywords searches are sought in the main scientific data base provided in the Virtual Library of the Pontifical university Catholic of Peru " and MSM Infocenter.

Further, the option of analyzing search results provided by databases such as Ebsco, Scopus, Emerald, web of Science, etc. was used. to manage and discover most relevant research papers and the main authors of each of the research variables. Then, the closest and most recent literature was selected trying to find theories, concepts, models and the main methods have been used for research in this field of knowledge. It should be noted that all current literature, results and studies are presented with the respective citations. The research variables are discussed according to the different perspectives and trying to Identifying the latest academic development related to the research question, and identifying gaps of knowledge supporting the proposed research topic.

Figure 3

Literature review map

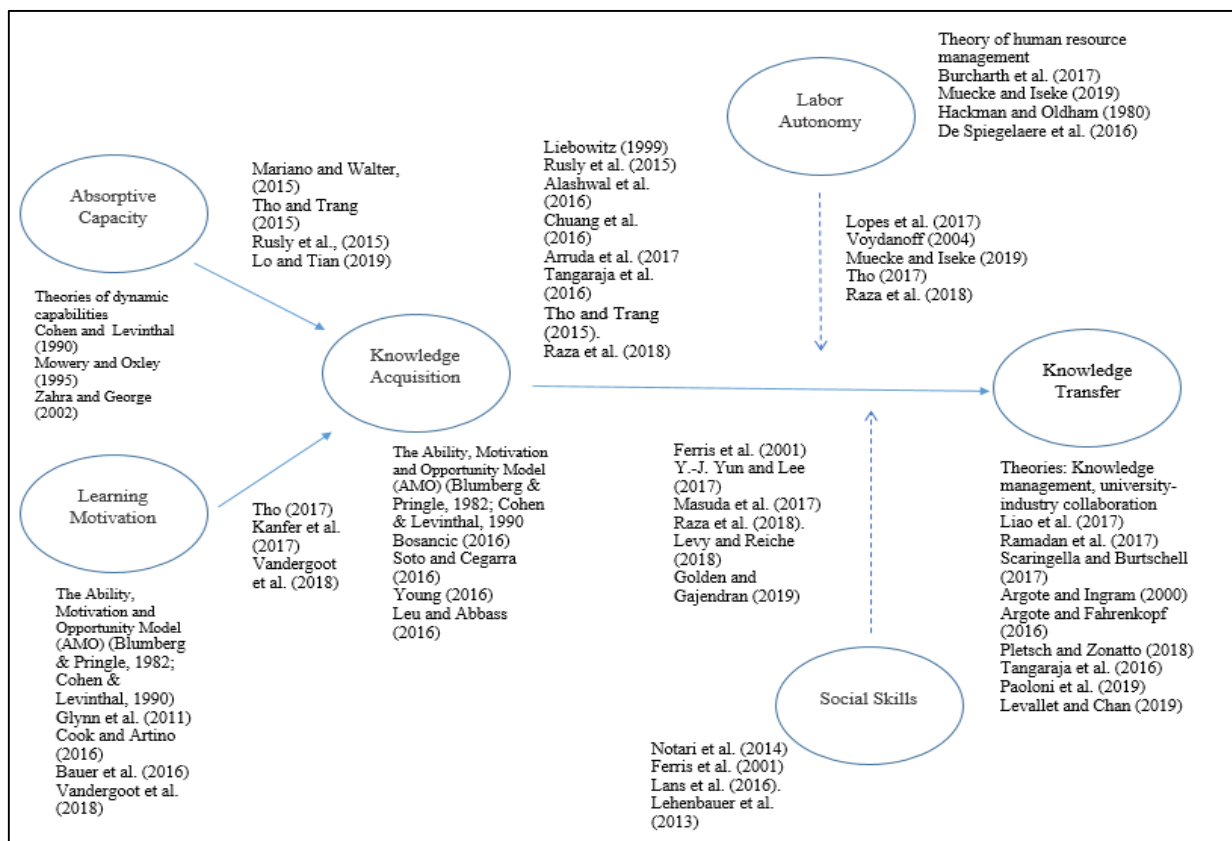


Note. Information search for the preparation of the literature review

As a result of the literature review, the conceptual map is presented in the following figure, where the citations that support each of the variables as well as their relationship are included.

Figure 4

Concept map



Note. Concept map and main citations that supported the review of the literature of this research.

Literature Review

The relationship between universities and companies is an issue that has been addressed by considering multiple approaches (Perkmann et al., 2013). During recent years, collaborative practices between university and industry have mostly been carried out through patents, licenses, joint ventures, among others (Azagra-Caro et al., 2017; de Wit-de Vries et al., 2019). However, there are other ways in which universities can ensure the application of knowledge whether formal or informal (Schaeffer et al., 2020).

Hayter et al. (2017) and Boh et al. (2016) emphasize the important role of students in the transfer of knowledge. However, considering the individual as a key agent of knowledge transfer between organizations and universities is a topic that is at an early stage and requires further study (Tho & Trang, 2015). This section is written considering a logical order that facilitates understanding, from the general theory to the variables of the conceptual model, in order to analyze the current state of the literature and identify the elements involved in the success of knowledge transfer.

The Ability, Motivation and Opportunity Model (AMO)

In today's knowledge economy, the creation of value by companies, in addition to depending on their productive and financial capacity, must be supported by their human capital, since people represent an important source for achieving higher levels of competitiveness (Bolisani & Bratianu, 2017). Therefore, an adequate management of human resources has become a necessity for companies to maximize their performance and increase the commitment of their employees in order to meet the company's objectives (Alagaraja, 2013).

Human resource management has long explored the relationship between human talent practices and performance (Malik et al., 2020). In their search, several researchers have found a positive relationship between the use of high performance work practices and business performance (Appelbaum et al., 2001; Demortier et al., 2014; Macduffie, 1995).

High performance work practices (HPW), are widely used in human resource practices to make organizations more flexible and participatory to ensure their survival in today's environment (Kalleberg et al., 2006). High performance management

practices are composed of three dimensions: skills required, jobs defined to use those skills, and an incentive structure to generate greater effort (Appelbaum et al., 2001).

On the other hand, high-performance work systems comprise a combination of high-performance work practices which together create synergistic effects (Rabl et al., 2014). Sarikwal y Gupta (2013) pointed out that capacity and motivation are independent units that do not lead to better performance, but together capacity, motivation and opportunities contribute to achieving a higher level of results.

However, there is no specific consensus that determines which set of high-performance practices are ideal for achieving desired results (Kroon et al., 2013). On the other hand, there are also no precise mechanisms for understanding how human resource systems work (Demortier et al., 2014). This enigma is commonly called the black box of human resource management (Sobaih et al., 2019).

In the literature, multiple authors recognize this enigma, but few made the attempt to identify what is in it (Boselie et al., 2005). The ability-motivation-opportunity (AMO) model is considered to be a very useful tool in an attempt to decipher the enigma (Demortier et al., 2014; Knies & Leisink, 2014). The origins of the model are based on the different theoretical positions among industrial psychologists and social psychologists. In industrial psychology, the AMO model assumes that performance is determined by training and selection (ability), while, under social psychology, motivation is considered to be a fundamental element for better performance (Beltrán-Martín & Bou-Llusar, 2018). Taking into account both positions, Vroom (1964) proposed an interactive relationship including ability and motivation as factors explaining performance. However, this proposal focuses only on personal

dimensions and does not consider other external factors that influence performance (Malik et al., 2020).

In response to this limitation, the AMO model was created, which includes capacity, motivation and opportunities as determining variables to obtain successful results (Blumberg & Pringle, 1982). Capacity refers to an employee's knowledge, skills, and experience, and reflects the health, resilience, and endurance involved in performing a specific task (Chang et al., 2012).

On the other hand, motivation involves three areas which are: the direction of the effort, the intensity of the effort and the persistence (Kanfer et al., 2017). In addition, Blumberg and Pringle (1982) mentioned that opportunity consists of uncontrollable factors surrounding the workplace such as working conditions, the leader's behavior, and company policies that admit or restrict the employee's performance of the task.

The AMO model has often been applied in the business context; however, it has recently been the basis for studies regarding knowledge transfer from universities to companies (Chang et al., 2012; Tho & Trang, 2015). Previous studies have emphasized relating knowledge acquisition to knowledge transfer through the three constructions of the model: abilities, motivation and opportunity (Raza et al., 2018; Tho, 2017; Tho & Trang, 2015).

Tho (2017) identified three factors to describe the process: a) learning motivation; b) absorptive capacity; and c) students' workplace autonomy. These authors empirically demonstrate how learning motivation and absorptive capacity help students in the process of acquiring knowledge from universities and also transfer this knowledge to companies where they carry out their professional practices, considering

the labor autonomy enjoyed by the student. Likewise, Raza et al. (2018), based on the work of Tho and Trang (2015), proposed a model composed of four variables that affect knowledge acquisition such as: a) intrinsic motivation, b) innovative culture, c) psychological resistance and d) the perceived functional value of the student.

However, some authors point out that this topic must be developed from a contingent perspective, integrating other moderating variables such as the individual characteristics of students and managers, such as their leadership style or emotional commitment, in addition to certain dimensions at the organizational level such as the climate or culture of the company (Demortier et al., 2014; Kehoe & Wright, 2013).

Absorptive Capacity

First, absorptive capacity (AC) was a concept applied at the organizational level. Cohen and Levinthal (1990), who introduced the term in the literature, defined CA as a company's ability to identify, assimilate and exploit new knowledge for commercial purposes. CAs are a set of skills needed to manage the knowledge component (Mowery & Oxley, 1995).

One of the most widely accepted definitions is that proposed by Zahra and George (2002). These authors add a component to the definition and consider that AC consists of a set of organizational routines and procedures that allow the company to acquire, assimilate, transform and exploit knowledge. Despite the different positions, the authors agree that AC constitutes a succession of the fundamental processes for the learning of an organization and at the same time contributes to its survival and success (Lane et al., 2006).

Several authors state that the AC of an organization is generated by the sum of the absorptive capacities of the individuals who participate (Augier & Teece, 2009). In

this sense, AC helps workers to identify, learn and understand new and innovative knowledge from external sources that are important for their current jobs (Cohen & Levinthal, 1990).

In the context of this study, student's AC can be defined as the ability of the students to exploit the knowledge acquired in the superior institution, identifying the value of such knowledge, assimilating it, combining it with the existing knowledge and later applying it in the tasks developed in the company where they work (Mariano & Walter, 2015). Student AC can represent an opportunity to use externally generated knowledge to benefit the organization (Lo & Tian, 2019).

Under the structure of the AMO model, AC comprises a cognitive skill that allows students to learn effectively when studying at their universities and also allows them to apply their acquired knowledge in the work environment (Tho & Trang, 2015). It also tends to positively influence the knowledge acquired and the transfer of knowledge in the organization (Tho, 2017).

Learning Motivation

Motivation has been defined as the process by which goal-oriented activities are initiated and maintained (Cook & Artino, 2016). Motivation is an internal state that provides the motive for humans to react and satisfy their needs and therefore influences the ability to produce behavior and performance (Bauer et al., 2016). In general, motivation leads an individual to make multiple efforts in order to achieve an objective of any nature (Vandergoot et al., 2018).

In the educational context, the motivation to the will power of students to perform academic activities (Di Serio et al., 2013). In addition, the level of student motivation reflects their commitment to attend and study the content of a program of

study, as well as the student's desire to contribute, learn, and accept the experience generated by the training program in the development of their profession (Furió et al., 2015).

Glynn et al. (2011) identified several motivational components that influence learning, including: a) intrinsic and b) extrinsic motivation, c) personal relevance, d) self-efficacy, and e) self-determination. In learning, intrinsic motivation implies a self-gratification caused by the pleasant sensation that learning provides. While, extrinsic motivation comprises the external stimuli for learning as a reward or to avoid a punishment (Howard et al., 2016). Personal relevance is an indicator of the importance of target-driven learning (Menard et al., 2017). Self-efficacy refers to the level of confidence students have in themselves to achieve results, and finally, self-determination refers to the control students believe they have over their learning (Bandura, 2006).

Learning motivation is a determinant of the direction, focus, and level of effort undertaken by students in their educational activities (Tho, 2017). Therefore, students with high learning motivation are more likely to capture effective learning strategies that facilitate knowledge acquisition from their educational institutions (Vandergoot et al., 2018).

On the other hand, in-service training students are active employees in various commercial enterprises whose main objective is to achieve better job performance (Blumberg & Pringle, 1982). Students' learning motivations have the power to increase the performance of each individual in the organization. By virtue of this, the support service within the higher education institution has an important role in generating more qualified and satisfied professionals, with motivation to do the job and add value to their company (Cook & Artino, 2016). Highly skilled employees must be motivated to

improve learning outcomes and for an organization to achieve excellent service quality (Kanfer et al., 2017).

Knowledge Acquisition

Knowledge is a very broad and abstract concept. In the Western philosophical tradition, the debate about its meaning had already begun among the philosophers of ancient Greece (Bosancic, 2016). A justified and true belief. Although knowledge since its origins belongs to the field of epistemology, the 20th century was seen as a fundamental component for the development of information systems thanks to the development of ICTs (Soto & Cegarra, 2016).

Consequently, today there are two meanings referring to the acquisition of knowledge. The first one conceives a philosophical concept as a learning method proposed by Aristotle and the second one is related to the process given by the knowledge based on systems (Bosancic, 2016). The acquisition of knowledge as a method of learning is the process where the student comes into contact with the contents of a given academic program (Young, 2016). Sometimes, this initial exposure is able to fix and relate the idea of content, so that the amount of what has to be learned is reduced and new knowledge is retained longer and applied more effectively (Leu & Abbass, 2016).

Therefore, knowledge acquisition is an important component of knowledge management, since it favors the codification of the available knowledge repository and also helps to increase it over time (Liebowitz, 1999). It focuses on identifying and searching for new knowledge and recognizing existing knowledge (Rusly et al., 2015). It also considers activities of creation, exploitation and development of existing and acquired knowledge as part of the acquisition process (Alashwal et al., 2016).

At the individual level, the acquisition of knowledge stimulates and accelerates the development of skills for the exploitation of opportunities which generates advantages for the student and favors the achievement of proactive initiatives (Lane & Lubatkin, 1998). In addition, it broadens the knowledge base of individuals and offers greater opportunities for the use of knowledge in the performance of their tasks (Chuang et al., 2016). In this process, human-related elements are involved; therefore, understanding the elements that affect knowledge acquisition at the individual level is crucial (Arruda et al., 2017).

In the AMO model, the knowledge that students acquire from higher education institutions is a contribution to their abilities that favors their work performance (Blumberg & Pringle, 1982; Cohen & Levinthal, 1990). Students as sources and recipients of knowledge are key agents in the process of knowledge acquisition (Rusly et al., 2015).

Knowledge Transfer

In any environment where knowledge exists it must be transferred. Knowledge transfer is fundamental to the social creation of knowledge (Ramadan et al., 2017). This activity is developed from the experience of the individual that is transmitted to the group and is manifested through changes in the performance of the units receiving the knowledge (Argote & Ingram, 2000).

In the transfer of knowledge, the recipient must be able to adapt the new knowledge to meet the needs of the organization so that in the future it will be applied and executed continuously (Argote & Fahrenkopf, 2016). In other words, it consists of the process of transferring knowledge between two parties, be they individuals, teams, departments or companies, where one party receives and applies the knowledge

provided by the other part (Pletsch & Zonatto, 2018). Therefore, it is necessary that there are at least two parties, one acts as a source of knowledge and the other participates as a receiver (Tangaraja et al., 2016).

Today, universities have become centers that promote the creation and transfer of knowledge between universities, industries and the government (Paoloni et al., 2019). More specifically, higher education institutions act as knowledge transfer agents for companies by producing high quality students (Miller et al., 2016b).

On the other hand, it should be noted that knowledge transfer actually implies the dissemination of two types of explicit and tacit knowledge (Levallet & Chan, 2019). Explicit knowledge can be transferred in various ways and can move quickly around the world; the transfer of tacit knowledge requires direct contact (Scaringella & Burtschell, 2017).

The literature points out two strategies for knowledge transfer, which are codification and personalization (Joia & Lemos, 2010). The coding strategy involves the transfer of knowledge through coded materials such as books or manuals. This type of strategy can occur at high levels, such as groups or departments, and also at the individual level (Tangaraja et al., 2016). On the other hand, personalization is a person-to-person process or a group of people and consists of the act of sharing knowledge from the source to a recipient (Song & Sun, 2018).

Under the customization strategy, in-service training students maintain constant interaction with others in the various environments in which they perform (Raza et al., 2018). In this way, internationalization of knowledge is achieved through active learning and socialization of knowledge through direct interaction with others in organizational settings (Suseno & Pinnington, 2018).

Various promoters and barriers to knowledge transfer have been identified and it is even known that explicit knowledge facilitates knowledge transfer while tacit knowledge may present some barriers (Jafari Navimipour & Charband, 2016). At the organizational level, the transfer of knowledge can be done through networks that occur intra and inter-organizational. Inter-organizational knowledge flows can lead downstream considering the clients or upstream through the interaction with suppliers, universities and other organizations (Vick & Robertson, 2018). However, to improve efficiency in knowledge transfer it is important to identify the structure of the network and the channels in knowledge transfer (Razmerita et al., 2016).

In this sense, the process of knowledge transfer involves three parties: a) students from higher education institutions who also work in companies, who act as the channel through which knowledge is transferred; b) the higher education institution as a source of knowledge and c) the companies that play the role of recipients (Tho, 2017).

Most empirical studies have shown that knowledge transfer activities implemented between industry and universities have had positive results for both parties (Lehmann & Menter, 2016; Mascarenhas et al., 2018). For example, Tho (2017) has demonstrated the effective role of students in transferring knowledge from business schools to companies, where the knowledge acquired is applied in their daily activities in the companies.

Scaringella and Burtschell (2017) stated that people play a very important role in knowledge transfer, because they transfer tacit and explicit knowledge. Tacit knowledge refers to knowledge that is not written down as problem solutions, professional experience, learning and skills, while explicit knowledge refers to information

documented through reports, manuals and documents in general (Scaringella & Burtschell, 2017).

Knowledge transfer is described as the main process of knowledge management, which aims to identify the output and input of knowledge from one person or group to another (Liao et al., 2017). Several authors consider knowledge management as a key resource to generate competitive advantage, which is why more and more companies are turning to it (Zhang & Gallagher, 2016). For its part, knowledge transfer is considered as the basis for enhancing business competitiveness as it facilitates the processes of innovation (Argote & Ingram, 2000).

Social Skills

Social skills refer to the personal ability to read, understand, and control social interactions effectively to satisfy motives and goals (Notari et al., 2014). More specifically, social skills reflect a person's ability to understand the feelings, thoughts, and behaviors of others in social situations and to persuade or influence them (Ferris et al., 2001). In essence, social skills are the competencies a person needs to interact successfully with others (Lans et al., 2016).

These skills are required in almost every area of life that involves interpersonal communication, from making friends to succeeding in school to improving their work situations (Lehenbauer et al., 2013). Consequently, individuals with strong social skills are more likely to perceive the thoughts of others accurately, adjust their behaviors to situational demands appropriately, and control the responses of others effectively (Ferris et al., 2001), particularly they are able to induce cooperation by understanding situations and providing reasons for cooperation (Y.-J. Yun & Lee, 2017).

Although it is true, the literature does not delve into the influence of social skills on the level of knowledge transfer in the university-industrial context. Several authors have suggested a possible relationship (Raza et al., 2018). Levy and Reiche (2018) demonstrated how the social skills of their employees have a significant positive effect towards the effectiveness of knowledge transfer in multinationals. Thus, it is believed that a student's confidence, respect, and friendship, which are products of social skills, can cause a higher level of knowledge transfer.

Labor Autonomy

The interest in labor autonomy has increased due to the different opportunities it generates. For example, Burcharth et al. (2017) stated that labor autonomy is a key factor for companies to take advantage of digital technologies and positively influence the experience of employees. However, there is still much skepticism from employers about the potential for job autonomy in performance (Muecke & Iseke, 2019).

In the literature, labor autonomy traditionally refers to the model of labor characteristics of Hackman and Oldham (1980). These authors define labor autonomy as the degree to which freedom, autonomy and discretion are provided to the employee to make decisions in his or her work (De Spiegelaere et al., 2016). Labor autonomy is conceived as the extent to which employees have influence and control over their work activities (Lopes et al., 2017). In general terms, labor autonomy refers to the degree of control and discretion that a worker can exercise over how to perform his or her work (Voydanoff, 2004).

Employees with greater autonomy and work freedom have the possibility of expanding their own roles in order to perform their tasks; this type of work experience leads to an appropriation of organizational problems, thus achieving a more proactive

view of performance (Kuvaas et al., 2016). In addition, employees may view labor autonomy as a sign of trust and appreciation and feel compelled to reciprocate through increased work motivation (Cropanzano et al., 2017). Highly motivated employees are more attentive and exercise higher levels of effort in their work (Muecke & Iseke, 2019).

Under the AMO framework, an empowered work environment provides employees with the opportunity to apply new and valuable knowledge to their work (Tho, 2017). In this way, students at the educational institution, who work while preparing, are more likely to apply the new knowledge gained in their current job (Raza et al., 2018). Consequently, it promotes an effective knowledge transfer between the educational institution and the associated companies.

Absorptive Capacity and Learning Motivation in the Acquisition of Knowledge

There are different sources to acquire knowledge, the literature suggests several factors that positively affect this process. Lichtenthaler (2016) discussed the relationship between knowledge acquisition and absorptive capacity. Since, absorptive capacity refers to a person's ability to acquire, assimilate, transform and exploit new knowledge in the business operation (Zahra & George, 2002).

Students' absorptive capacities to recognize and understand new knowledge are critical in the process of knowledge acquisition (Scaringella & Burtschell, 2017). Because, acquired knowledge demands assimilation into the current knowledge base; consequently, an individual's prior knowledge, skills, and understanding affect his or her ability to participate in the knowledge acquisition process (Sarala et al., 2016).

Although absorptive capacity is important for knowledge acquisition, the process of obtaining knowledge could be more complex in the absence of motivation

(Rusly et al., 2015). The literature has shown how students' absorptive capacity and learning motivation are essential to effective learning outcomes (Lane et al., 2001).

Knowledge Acquisition and its effect on Knowledge Transfer

The process of knowledge transfer involves several parts, including recipients and sources of knowledge (Tangaraja et al., 2016). Under the focus of this study, higher education institutions act as the source of information, companies as the recipients and in-service training students are the channels. Argote and Fahrenkopf (2016) highlighted the importance of identifying and possessing relevant knowledge in order to execute a successful knowledge transfer.

The knowledge and skills acquired reflect the capacity of the students (Tho & Trang, 2015). Students' perception of the skills they acquire is important to the effectiveness of knowledge transfer (Howard et al., 2018). Several studies have found that knowledge acquired from educational institutions is a precursor to knowledge transfer (Raza et al., 2018; Tho, 2017; Tho & Trang, 2015).

In the AMO framework, students are agents who acquire the knowledge provided by the educational institution, and the level of knowledge acquired plays a fundamental role in helping the agents and students who work to improve their performance (Blumberg & Pringle, 1982; Cohen & Levinthal, 1990). Tho and Trang (2015) suggested that increasing the level of knowledge acquired by students increases the probability that this new knowledge will be applied in companies; that is, there will be higher levels of knowledge transfer between educational institutions and companies, which generates a better performance of the three agents involved.

Knowledge Acquisition and Transfer: moderating effect of labor autonomy

As mentioned in previous sections, labor autonomy generates opportunities for workers to apply new and valuable knowledge provided by external sources, in the context of the study educational institutions, in the work they do in companies (Tho, 2017). Therefore, labor autonomy plays an important role in strengthening and improving the acquisition of knowledge and its subsequent transfer (Raza et al., 2018).

The role of labor autonomy has also been verified by previous research in knowledge transfer and related areas. For example, Tho (2017) confirmed the existence of a positive effect on the impact of acquired knowledge on knowledge transfer. In a similar context, Llopis and Foss (2016) found that labor autonomy positively moderates the impact of the cooperative climate and the transfer of knowledge among employees. Volmer and Niessen (2012) found that labor autonomy positively moderates the relationship between the quality of leader-member interaction and creative participation at work.

Knowledge Acquisition and Transfer: moderating effect of social skills

With respect to social skills, the literature is suggestive of the effect that this competence may have in the context of study. Several authors recommend that the relationship between acquired knowledge and transfer should be addressed by integrating other moderating variables such as individual student characteristics (Demortier et al., 2014; Kehoe & Wright, 2013). In virtue of this, this study raised the possibility that the positive effect generated by the knowledge acquired on the transfer of knowledge is stronger as soon as the student possesses higher levels of social skills.

On the other hand, the virtual work environment generates several dilemmas in communication (Golden & Gajendran, 2019). Under these conditions a problem can

occur in the contacts between employees as the lack of motivation to share ideas with people they do not know well (Alsharo et al., 2017). Thus, social skills are an important element in facilitating knowledge transfer (Lieke et al., 2012). Likewise, Masuda et al. (2017) mention that among the main advantages of teleworking is that it provides the worker with a sense of autonomy and control over tasks in the work environment.

Critique of the Literature

In the literature review, it could be seen that there is great interest in knowledge management as a strategy that generates competitive advantages for institutions (Ahmad et al., 2017). Franco and Pinho (2019) state that knowledge transfer is a key concept for carrying out the knowledge management process, as theoretical development some academics have identified the stages involved, among them Nonaka (1994), Gold, Malhotra and Segars (2001) and Law and Ngai (2008). However, in order to foster the knowledge-based development environment, it is necessary to analyze the flow of knowledge, the sources of knowledge, the recipients, the channels of knowledge and the situation of transfer (Argote & Ingram, 2000; Battistella et al., 2016; Cohen & Levinthal, 1990).

The studies developed in the university-business collaborative context, focus on the links between both institutions through formal agreements managed by technology transfer offices that have led to the commercialization of scientific knowledge, including patents, joint ventures, spin-offs (Perkmann et al., 2013; Schaeffer et al., 2020). According to Perkmann et al. (2013), knowledge transfer from universities to companies has been with respect to science, technology and mathematics (STEM) disciplines, so the literature on knowledge transfer in social disciplines is scarce. Similarly, studies on knowledge transfer have been carried out in different areas such as information systems, psychology, strategic management but there is limited literature on

business knowledge transfer (Balle et al., 2019; Lin, 2007; Tho & Trang, 2015; Zhang et al., 2017).

At the organizational level, several researchers have focused on analyzing the characteristics of knowledge transfer in companies since the study of social networks since the 1990s (Castillo et al., 2018; Zheng et al., 2016). From this perspective, social networks consist of an analysis and measurement of the links and relationships between organizations and individuals associated with networks and collaborative activities (Loitz et al., 2017).

On the other hand, previous research has indicated that there is a significant relationship between human resource management and knowledge management (Gope et al., 2018). In the organizational context, the process of knowledge transfer refers to the way in which employees in organizations share their knowledge, experience and other relevant contextual information with their colleagues (Lin, 2007).

Knowledge transfer is considered an indispensable stage of knowledge to create value in interorganizational networks (Sudhindra et al., 2017). However, knowledge transfer is a complex process that depends on a number of organizational characteristics and also on the type of management they practice (de Wit-de Vries et al., 2019).

Gope, Elia, and Passiante (2018) state that organizational knowledge management begins with the acquisition of knowledge and then its dissemination within the organization, and the cycle closes when this knowledge is effectively applied in the context of the organization. This perspective has been adopted by some authors to design models of innovation management and knowledge transfer inter and intra organizational through different formal and informal channels (Alford & Jones, 2020; Gasik, 2011). As reported below, the findings describe the knowledge acquisition and transfer between peers that takes place in university-led projects and suggest that a

combination of Model 1 and Model 2 knowledge helps entrepreneurs advance their digital marketing skills. Peer-to-peer clusters are an effective means of placing digital marketing knowledge and technology into the context of small and medium tourism business practice. The paper outlines the implications for destination marketing organizations and policymakers and offers suggestions for future research directions.

However, studies on inter- and intra-organizational knowledge transfer have been carried out considering the institution as a unit of analysis, which implies that in order to carry out the application of the survey several conditions had to be met regarding its position and experience (Lee et al., 2015). Thus, the respondents should be managers, project directors, among other senior and middle management collaborators (Chen et al., 2014).

Researchers in the area of social psychology state that the acquisition and transference of knowledge can be explained by three main factors: ability, motivation and opportunities (Alavi & Leidner, 2001; Blumberg & Pringle, 1982; Chang et al., 2012). The AMO framework has its origin in the high performance work systems of human resource practice management (Chang et al., 2012). Under the ability-motivation-opportunity model, absorption capacity and motivation in learning have been investigated as essential antecedents in the acquisition of knowledge. This model has been applied to study the intra-organizational level in the context of the employee organization (Joia & Lemos, 2010; Lai et al., 2016; Park et al., 2014). However, the role of students in knowledge transfer has been little discussed despite the emphasis on students as an informal channel through which knowledge transfer can take place from university to industry (Agrawal, 2001; Bekkers & Bodas Freitas, 2008; Tho & Trang, 2015), using a sample of 843 in-service training business students in Vietnam, the results from SEM (structural equation modeling) support the hypotheses, except for the

impact of innovative culture on knowledge transfer. However, the results from fsQCA (fuzzy-set qualitative comparative analysis) with the same data set reveal that none of the above-mentioned factors are sufficient conditions for knowledge transfer. Instead, combinations of these three factors are. Overall, it is believed that the study findings shed light on a new channel of knowledge transfer, that is, in-service training students.

The literature that develops knowledge transfer considering the student as an effective channel for knowledge dissemination is limited (Tho & Trang, 2015). However, Tho (2017) and Pletsch & Zonatto (2018), used the AMO model to carry out the study with similar characteristics has demonstrated consistent results. Minbaeva, Pedersen, Bjorkman, Fey and Park (2003) stated that one of the fundamental factors in effecting knowledge transfer is not the original knowledge of the source but the way and extent to which the recipient obtains the knowledge and applies it in their activities. Tho and Trang (2015) identify two factors required for knowledge acquisition: a) learning motivation; b) absorption capacity.

Absorption capacity allows them to identify, learn and understand new and novel knowledge from external sources that are important for their current work (Cohen & Levinthal, 1990). In the context of this study, the Absorption Capacity of the students can be defined as the ability of the students to exploit the knowledge acquired in the superior institution, identifying the value of this knowledge, assimilating it, combining it with the existing knowledge and later applying it in the tasks that they develop in the company where they work (Mariano & Walter, 2015), the purpose of this research was to provide a holistic picture of how and to what extent Cohen and Levinthal's (1990) seminal article on absorptive capacity was used in knowledge management (KM) and intellectual capital (IC) research from 1990 to 2013. In this paper, 186 articles extracted from eight KM and IC journals were reviewed by conducting both content and text

analyses. To facilitate research comparison, content analysis followed the method used by Roberts et al. (2012) and thus was based on categories, conceptualizations, levels of analysis and, additionally, temporal evolution of absorptive capacity from 1990 to 2013 was looked at. Text analysis was performed to identify major research themes developing the absorptive capacity construct. Finding showed that absorptive capacity was largely underdeveloped in the KM and IC fields. KM, knowledge transfer and innovation were the top three research areas investigating absorptive capacity in the KM and IC fields.

General motivation leads an individual to make multiple efforts in order to achieve an objective of any nature (Vandergoot et al., 2018). Learning motivation includes needs, instinct and will. This motivation acts directly as an impulse that leads students to learn, generates a need to motivate, and in turn guides the student in learning (Darling-Hammond et al., 2019). Therefore, the more motivated an individual is in learning, the greater his or her learning outcomes will be (Won et al., 2020).

The acquisition of knowledge stimulates and accelerates the development of skills for the exploitation of opportunities, which generates advantages for the student and favors the achievement of proactive initiatives (Lane & Lubatkin, 1998). In addition, it broadens the knowledge base of individuals and offers greater opportunities for the use of knowledge in the performance of their tasks (Chuang et al., 2016). The knowledge and skills acquired reflect students' abilities (Tho & Trang, 2015). Students' beliefs about the skills they acquire are important to the effectiveness of knowledge transfer (Al-Emran & Teo, 2020), this study was conducted to build a new model by extending the technology acceptance model (TAM) with knowledge acquisition and knowledge sharing to examine the e-learning adoption. A total of 403 students enrolled at Al Buraimi University College (BUC) in Oman was surveyed. Using the Partial Least

Squares-Structural Equation Modeling (PLS-SEM) to evaluate the proposed model, the results suggested that knowledge acquisition, knowledge sharing, perceived usefulness, and perceived ease of use have significant direct effects on the students' behavioral intention to adopt e-learning systems. The findings also suggested that knowledge acquisition and knowledge sharing have a significant positive influence on perceived usefulness and perceived ease of use. The evidence from these results provides holistic insights which could assist the policy-makers and educators to better understand the factors affecting the adoption of e-learning systems.

Summary

Research on knowledge transfer between higher education institutions and companies, considering in-service training students as a transfer channel, has not been widely developed. Generally, the studies that have been developed take as reference the AMO model, Abilities- Motivation-Opportunity, which emerges as a response to the need to find a set of practices, in the human resources environment, that allows to improve the performance.

In the context of university-industry relations, the authors agree that knowledge acquisition is an indispensable precedent for knowledge transfer. The models vary according to the variables that describe the acquisition of knowledge such as: motivation in learning, absorptive capacity, intrinsic motivation, innovative culture, psychological resistance, perceived functional value; and also because of other variables that directly and indirectly describe the transfer of knowledge.

The present research proposes a more complete model that evaluates the knowledge acquired and the transfer of knowledge. The model presented considers the effect generated by social skills, one of the current skills most demanded by companies;

labor autonomy to evaluate its direct impact with the transfer of knowledge and indirectly in its moderating role between acquired knowledge and knowledge transfer. The analysis of these variables is important since they are skills and faculties necessary for adaptation under the modality of telework.

The literature review has identified several studies that explain the process of knowledge transfer in the context of university-business collaboration, however, it remains an area of study underdeveloped. The AMO model has been frequently applied in the business context and has recently been the basis for studies regarding knowledge transfer. In Appendix A, a brief summary of the current study represented in the consistency matrix is presented.

Based on the AMO model, it is considered that capacity, motivation and opportunities are determining factors to obtain successful results in performance, in this specific case knowledge transfer. Under this model, based on the human resources management systems, this study recognizes the key role of the collaborators in the creation of value for the companies.

Chapter 3: Method

Based on the defined conceptual framework, we propose a design with a quantitative approach under descriptive and predictive analysis techniques. The proposed methodology is appropriately adjusted to the research questions and the contrast of the model's hypotheses. This section contains the description of the research design and its respective justification, the population and the study sample are determined to define the scope of the project. Additionally, other aspects related to the fulfillment of the ethical dimension, the process of collecting and analyzing the information, among others, are explained. The methodology proposed will ensure the obtaining of reliable and valid results that will allow extending the knowledge of the knowledge transfer process from universities to companies.

Research Design

This research project is based on a positivist philosophy following a deductive logic for the development and strengthening of theory (Saunders et al., 2016). In order to answer the research questions, meet the objectives of the study and test the hypotheses, a non-experimental, cross-sectional research design of the correlational-causal type was used (Phan & Ngu, 2017).

The study will be conducted based on primary data from the perceptions of in-service training students in programs related to third or fourth level business and management careers. This unit of analysis is considered relevant, since they are students who work and study at the same time, therefore, they have training and experience that make them effective channels for the transmission of knowledge to companies (Pletsch & Zonatto, 2018).

For the data collection process, a measurement instrument will be built using constructs that have been used in previous works, so its reliability and validity should be evaluated for little studied contexts in the area of knowledge transfer (Flake et al., 2017). Prior to the application of the survey, content validation will be carried out by means of interviews with experts who will evaluate the criteria of understanding, appropriateness and coherence of the items with respect to their factors (Oliveira et al., 2016; Tsangaris et al., 2017). The six constructs that will be examined in this study are (a) absorptive capacity; (b) learning motivation; (c) knowledge acquisition; (d) labor autonomy; (e) social skills; and (f) knowledge transfer.

The above factors will be defined as one-dimensional reflective constructs with the aim of maintaining uniqueness in the variables and improving operational efficiency (Y.-J. Yun & Lee, 2017). In addition, the indirect effect of the variables corresponding to labor autonomy and social skills will be evaluated through a moderation analysis to assess the heterogeneity of the structural model's hypotheses (Ringle et al., 2018).

For the purpose of the research, the population will be made up of students who are taking higher education programs in business and management areas at third and fourth level in institutions located in the cities of Guayaquil, Quito, Cuenca and Loja of Ecuador. In order to select the sample, the technique of probability sampling by strata will be used to obtain a good sample of the population and to obtain representatives from each institution (Gabriel et al., 2019). Therefore, it is possible to make statistical inferences to adequately answer the research questions (Gile et al., 2018).

After data collection, the data will be tabulated and analyzed through descriptive statistics to understand the behavior of the data and identify possible inconsistencies in responses (Usakli & Kucukergin, 2018). Through behavioral analysis and data

distribution, the selected estimation method will be justified (Cepeda et al., 2019). Then, the measurement model adjustment process will be carried out by means of a Confirmatory Factor Analysis (CFA) which, through various metrics, makes it possible to validate the constructs at the convergent and discriminant level with the objective of ensuring that the way of operationalizing them is adequate for the study of knowledge transfer in the case of Ecuador's higher education institutions (Salazar & Bernabé, 2015). Finally, they will contrast the hypotheses of the structural model through the estimation of structural equations model (Hair, Black, et al., 2019).

Appropriateness of Design

The defined methodological design fits the purpose of the research. Given that, it seeks to analyze the influence of a series of variables in the process of knowledge transfer. Since the factors of the conceptual model have been little studied in the context of the Latin American region, it will be necessary to refine and validate the constructs (Caqueo et al., 2019). The validation of the model will be carried out at two levels: content and construct.

To answer the research questions and to test the hypotheses of the structural model, the method of structural equations will be used. This technique has become one of the standard methods of use for the analysis of cause-effect relationships of non-observable variables for the social sciences including organizational management and human resource disciplines (Hair, Risher, et al., 2019).

The relationships to be analyzed in this research were derived from the Skills-Motivation-Opportunities (AMO) model, which identifies determining factors to perform a task successfully (Beltrán-Martín & Bou-Llugar, 2018). Recently, this model has been used in the study of knowledge transfer from universities to companies.

Previous research has shown that the variables of the conceptual model are relevant and consistent.

Research Questions

For the development of this study, the following research questions are posed:

- What is the effect of absorptive capacity on the knowledge acquisition of university in-service training students?
- What is the effect of learning motivation on the knowledge acquisition of university in-service training students?
- To what extent does the knowledge acquisition of university in-service training students influence the transfer of knowledge to companies?
- How do the social skills of university in-service training students influence the transfer of knowledge to companies?
- How does the level of labor autonomy enjoyed by university in-service training students influence the transfer of knowledge to companies?

Hypothesis

This paper seeks to contrast the following hypotheses based on the defined conceptual framework and the research questions posed:

H_1 : Absorptive capacity has a positive impact on knowledge acquisition

H_2 : Motivation in learning has a positive impact on knowledge acquisition

H_3 : Knowledge acquisition has a positive impact on knowledge transfer

H_4 : Social skills have a positive impact on knowledge transfer

H_5 : Labor autonomy has a positive impact on knowledge transfer

H_6 : Social skills positively moderate the relationship between knowledge acquisition and knowledge transfer

H_7 : Labor autonomy positively moderates the relationship between knowledge acquisition and knowledge transfer

Population

This research investigates the process of knowledge transfer from universities to companies. The research analysis unit is made up of in-service training students from higher education institutions, private universities, located nationwide in Ecuador, according to the Top 10 of the Quacquarelli Symonds ranking (2020) as shown in the following table, who study, part time, a third or fourth level training program in business and business administration areas and who work in the business sector full time. In this way, undergraduate and graduate students from other specialties are not considered in the institutions.

Table 1

QS Latin American University Rankings 2020 – Ecuador

#	Name of the University	Type of University	Location city in Ecuador
1	Universidad San Francisco de Quito (USFQ)	Private	Quito
2	Escuela Superior Politécnica del Litoral (ESPOL)	Public	Guayaquil
3	Pontificia Universidad Católica del Ecuador (PUCE)	Private	Quito
4	Escuela Politécnica Nacional (EPN)	Public	Quito
5	Universidad Central del Ecuador (UCE)	Public	Quito
6	Universidad de Cuenca (UCACUE)	Private	Cuenca
7	Universidad de las Fuerzas Armadas (ESPE)	Private	Quito

8	Universidad Técnica Particular de Loja (UTPL)	Private	Loja
9	Universidad Espíritu Santo (UEES)	Private	Guayaquil
10	Universidad de las Américas (UDLA)	Private	Quito

Note. List of universities in Ecuador in the Top 10 of QS ranking 2020, according to the type of institution and the city where they are located within Ecuador

Ecuador presents a favorable field for the strengthening of the relationship between these agents. Increasingly, universities are interested in developing strategies and collaborative work with the business sector (Lehmann & Menter, 2016). Specifically, the role of students is explored as a channel for transferring knowledge from universities to businesses. Previous studies have shown that in-service training students can be an effective channel for knowledge transfer since they have an adequate level of experience to possess job skills and have the capacity to identify their role in the company (Nguyen et al., 2017). Additionally, it explores the performance of undergraduate students who are also a channel to facilitate the flows of explicit and tacit knowledge (Jackson, 2017).

To delimit the population, it was taken into account that the area of knowledge of the students is the administrative and business area. In Ecuador, business education and administration has been the field of study with the highest number of students enrolled, representing 26.67% of total enrollment in third and fourth level programs (Senescyt, 2018). Undergraduate programs are the set of programs with the highest enrollment rate, followed by master's programs (Senescyt, 2018).

In order to obtain relevant information, students who are working in the productive sector of Ecuador's main cities: Guayaquil, Quito, Cuenca and Loja, are selected. This type of unit is selected since they fulfill the condition of being students

and employees, so that it is possible to transmit the information. Thus, the population defined for this study corresponds to students of bachelor's or master's degree programs in management and business who are working.

Informed Consent

In research on human behavior, there are three primary ethical standards: respect for persons, justice, and charity (Bracken-Roche et al., 2017). Of these, respect for individuals determines that participants should be treated as autonomous agents, which will consist of giving individuals complete freedom to decide to participate in the study. In order to comply with this rule, the respective informed consent of the students who will be part of the project will be requested (Bracken-Roche et al., 2017).

Given that the data will be collected through an online survey, the collaboration and consent will be requested, by explaining the research topic, the objective, the scope, the estimated time and indicating that your participation is free and voluntary. In this way, in the first section of the survey, a section will be placed to describe the informed consent where the student must accept or refuse to participate in the research.

Sampling Frame

The sample considered in this study will be made up of part-time students who work full-time in companies, at the undergraduate and graduate levels from several of the most representative universities from Ecuador. The participating universities are: Universidad San Francisco de Quito (USFQ), Universidad de las Américas (UDLA), Pontificia Universidad Católica del Ecuador (PUCE), Universidad de Especialidades Espíritu Santo (UEES), Universidad Católica de Cuenca (UCACUE) and Universidad Técnica Particular de Loja (UTPL).

The unit of analysis is defined as students in the field of business and administration who are studying a third or fourth level program and who are working in the productive sector of the cities of Quito, Guayaquil, Cuenca and Loja of Ecuador. On the other hand, the exclusion criterion indicates that students from the institution who are studying programs directed at more specific areas such as human resources, marketing, finance, among others, will not be considered.

In the sampling process, we considered some characteristics that are desirable according to the statistical technique to be used and the purpose of the study. In the literature, there is no general rule for the application of structural equation models; however, it is recommended to rely on studies with the same methodology (Wolf et al., 2013). Comrey (1988) proposed a minimum number of cases 200 as an appropriate number for studies whose measurement instrument has at most 40 questions. Other researchers agree that a sample of 200 cases offers adequate statistical power for data analysis and is also called critical sample size (Iacobucci, 2010; Reisinger & Turner, 1999).

For sample selection, a probability sampling technique will be followed in order to have a representative data set for the population and make statistical inferences to answer planted research questions (Gile et al., 2018). Among the different types of probability sampling, this study will employ stratified random sampling where the population is divided by institution and then randomly sampled by group in a number proportional to the size of the stratum compared to the population (Carlisle & Loadsman, 2017). In this sense, work was done to ensure that each of the universities selected as a population, have a participation proportional to the number of students.

Table 2

Students from business and management programs and sample by higher education institution

Name of University	Total Students	%	Reference Number of Surveys
Pontificia Universidad Católica del Ecuador (PUCE)	2161	45%	242
Universidad Técnica Particular de Loja (UTPL)	1084	22%	121
Universidad de Especialidades Espíritu Santo (UEES)	747	15%	84
Universidad San Francisco de Quito (USFQ)	345	7%	39
Universidad de las Américas (UDLA)	255	5%	29
Universidad Católica de Cuenca (UCACUE)	232	5%	26
Total	4824	100%	540

The total number of students from the universities considered in the proposed research is 4824. Next, For the sample size, the proposal by Kline (2011) was considered, in which he suggests as an ideal sample of 20 cases per parameter, the instrument selected has 27 parameters so the sample is 540. To ensure that the sampling process is adequate, the number of surveys per institution was estimated by applying a proportional stratified random sampling for each participating university. Additionally, the reference number of surveys per institution was calculated.

Confidentiality

In this study, the source of information is primary because of the application of the survey to in-service training students in several of the most representative institutions at the national level, located in of the cities of Guayaquil, Quito and Cuenca of Ecuador. However, the research process will guarantee the confidentiality of the data collected in order to comply with the principle of beneficence, since it expresses the

obligation of data protection, maximization of the benefits of the study, and reduction of risks (Ross et al., 2018). In addition, this requirement constitutes a necessary background for obtaining truthful answers (Saunders et al., 2016).

Therefore, it will be placed in the measurement instrument: the objectives and scope of the research, in which the anonymous participation of the respondents is clearly expressed (Ross et al., 2018). In addition, the questionnaire to be used in the study will not ask for any information that would allow individual identification of the respondents. Finally, it should be mentioned that the process of data collection will be carried out through an online platform independent of the institution collaborating with the study in order to avoid bias.

Geographic Location

The study will be conducted in the cities of Guayaquil, Quito, Cuenca and Loja of Ecuador. The project considers as a unit of analysis the students of in-service training who are studying in undergraduate or graduate programs in business and management areas and who work in the business sector of Ecuador.

Instrumentation

As a subsequent step to the literature review, the survey proposed by Pletsch & Zonatto (2018) and Tho (2017) was selected, the instrument is composed of the following dimensions: Absorptive Capacity, Learning motivation, Knowledge acquired, Knowledge transfer, Labor autonomy and Social skills; where knowledge acquisition and transfer can be explained by ability, motivation and opportunity factors (Chang et al., 2012; Tho, 2017). The instrument has been applied by researchers in the following high impact journals: Pletsch and Zonatto (2018) and Tho (2017) in Journal of

Knowledge Management, Kharel and Bhandari (2019) in *Journal of Management and Social Sciences*, and Nasution (2020) in *Jurnal Riset Teknologi dan Inovasi Pendidikan*.

The selected instrument measures the absorption capacity through 4 items that include the capacity of the student in service to identify the value of external knowledge, its assimilation, complement it with previous knowledge and finally apply this knowledge for commercial purposes (Chang et al., 2012; Zahra & George, 2002). To measure learning motivation there are four questions from studies by Cole et al. (2004) and Noe and Schmitt (1986). Knowledge acquisition will be measured through six items adopted from the Course Experience Questionnaire (CEQ) (Wilson et al., 1997). The CEQ is a widely used instrument in the literature that aims to assess various generic skills of students at the higher education level (Huybers, 2017). The transfer of knowledge will be measured through questions that form a one-dimensional construct. To this end, the proposal of Ko et al. (2005) is adapted to evaluate the capacity of students to learn from their schools and apply knowledge in their workplace.

In the study, labor autonomy and social skills are considered as moderating variables, since it has been proven that both factors have an interactive effect in relation to work performance (Llopis & Foss, 2016; Y.-J. Yun & Lee, 2017). As with the previous factors, measurement based on perception questions was chosen. Labor autonomy will be measured based on three items from a study proposed by Hackman and Oldham (1980), which has been used in several studies and has demonstrated reliability and validity (Jong, 2016). On the other hand, although the literature offers multidimensional concepts to evaluate social skills, the one-dimensional approach is chosen in accordance with the other constructs of the model. Six questions are used to capture the level of empathy, communication skills, recognition of others' traits, and adjustment of behaviors in various social situations.

Finally, the instrument is composed of 28 questions that evaluate the relevant factors of this study. The above-mentioned elements, as well as previous studies, will be evaluated through Likert scales from 1 to 5, where 1 represents a total disagreement with the given premise and 5 is indicative of a total agreement. The operationalization of the variables is shown in appendix B of this document.

The process of cultural adaptation and validation of the constructed instrument will require several interviews with experts in the area of education, marketing and communication to adjust the questionnaire (Tsangaris et al., 2017). To systematize this adjustment process, an evaluation matrix will be used that considers the level of understanding, adequacy and coherence of the questions.

In addition, a pilot test will be conducted to identify the ease and understanding of the questions. After adjusting the measurement model, the reverse translation technique will be used to ensure that the adjusted content of the questions preserves the original meaning of the items proposed in the literature (Oliveira et al., 2016).

Data Collection

The data collection process will be carried out through a measurement instrument that will be applied through the web tool Easy Survey. The use of an online platform was chosen in order to speed up the data collection process and facilitate the follow-up of the responses (Evans & Mathur, 2018). In addition, because it provides in a simple way the database in xlsx files, Excel's default format.

To improve the quality of the data collected, the survey will include details on the purpose of the study, commitment to confidentiality, informed consent, and overall survey procedure (Ross et al., 2018). In this way, risks of measurement error and social desirability bias in survey implementation are avoided (Holtkamp et al., 2019). The

students considered in the study will be those who are enrolled and studying in the training program at the participating institutes.

After the field work, data tabulation and analysis will be performed. First, the database will be transformed into .csv format, a document type compatible with the application of various statistical programs. Then, with the use of the SPSS version 22 program, a descriptive analysis will be carried out to identify possible errors in the data collection and to analyze the distribution of the information. Finally, the software Smart PLS version 3.2.8 will be used to validate the measurement model and contrast the hypotheses of the structural model.

Data Analysis

The present work is based on the study of primary data. The data will be obtained through the application of a measurement instrument composed of questions associated with the transfer of knowledge and its background, which were described in the conceptual model raised. The analysis of the study data will be carried out as a systematic process composed of several stages.

First, a descriptive analysis will be carried out in order to know the characteristics of the respondents. In the second stage, the existence of missing data, outliers and data behavior will be examined. This step is done to identify possible errors in data collection or tabulation (Usakli & Kucukergin, 2018). In the outlier analysis, the Mahalanobis.

Evaluation of data distribution is an important step in selecting the estimation method (Cepeda et al., 2019). This will be based on a graphic analysis of the variables by means of frequency histograms. The asymmetry and kurtosis coefficients of each question or variable will be estimated, where the optimal value range is an absolute

value of 1 for normality. Additionally, the Kolmogorov-Smirnov test of normality will be applied to evaluate the hypothesis of univariate normality and later the Mardia test in order to test the multivariate normality (Cain et al., 2017; Hair, Black, et al., 2019).

In the third stage, the measurement model will be evaluated by means of a Confirmatory Factor Analysis (CFA). This statistical technique allows us to prove the existence of a relationship between the observed variables, in this case the questions of the questionnaire, and the underlying latent variable, which identifies each of the factors of the theoretical model (Crede & Harms, 2019). Additionally, through criteria of reliability and validity, it makes possible the adjustment and refinement of the constructs. However, as a previous step, it will be necessary to evaluate the feasibility of the factorial analysis by means of the sample adaptation of the data. For this purpose, the Kaiser-Meyer-Olkin test (KMO) will be carried out and as a complement the Bartlett sphericity test (Yilmaz, 2016).

The fourth stage will consist of the estimation of the structural model, which is by means of the Structural Equation Model, considering PLS as the estimation method (Hair Jr et al., 2017). This methodology is characterized by being less restrictive, in terms of the non-normal distribution of variables and the size of the population, as well as allowing the evaluation of a series of relationships between latent variables from a predictive perspective. By virtue of this, it has become a tool of extended use in the evaluation of theoretical models with causal relationships of non-experimental studies (Al-Gahtani, 2016).

Finally, the predictive quality of the model will be evaluated based on the estimation of the determination coefficient R^2 , the effect of the size f^2 and the predictive relevance Q^2 and the predictive relevance (Manley et al., 2020). A

heterogeneity analysis of the model will also be carried out by including moderating variables, such as labor autonomy and social skills, in the relationship between knowledge acquisition and transfer. In this way, it will be possible to measure the invariance of the model and to deepen the results obtained (Ringle et al., 2018).

Validity and Reliability

In order to obtain accurate and useful results it is necessary to maintain a good level of validity and reliability in research (Lei & Shiverdecker, 2020). Validity consists of explaining how well the data collected correspond to the actual area of research (Jablensky, 2016). In this study, we start with the evaluation of content validity. This procedure will be carried out through the review of the measurement instrument by experts in the area of education, marketing and communication. Based on the experts' recommendations, the content will be improved and the proper understanding of the items will be ensured in order to avoid possible error biases in the information collection (Tsangaris et al., 2017).

In addition, construct validity will be performed to determine if the variables defined in the questionnaire adequately capture the relevant factors in the study (Flake et al., 2017). In this sense, the validity has two components: at a convergent and discriminant level. For convergent validity, the level of direct factor load and mean extracted variance (AVE) will be evaluated, considering a critical value of 0.7 and 0.5 respectively (Hair Jr et al., 2017). While the Heretrait-monotrait criterion (HTMT) is considered for discriminant validity, where the coefficients estimated in the matrix must be lower than the value of .90, to indicate that the constructs differ empirically from each other, otherwise it reflects an absence of discriminant validity (Hair, Black, et al., 2019).

On the other hand, in a confirmatory factorial analysis (CFA), the researcher can evaluate how much each item contributes to the scale, in the same way it is possible to know the suitability of the scale with respect to the concept it measures through reliability (Abraham et al., 2019). The scales are considered reliable when they provide consistent results in similar conditions, this quality of the scales is measured through internal consistency (Hair, Black, et al., 2019). To evaluate the internal consistency of the factors, Cronbach's Alpha coefficient is estimated with a range of 0.7 to 0.95 as critical acceptable values (Nunes et al., 2019). While, for the composite reliability it is defined as an optimal condition that its coefficients are 0.7 (Souza et al., 2017).

Summary

For the development of this research, a non-experimental quantitative methodological design of correlational-causal type with cross-sectional data will be used. In this study several constructs proposed in the literature will be used for the operationalization of the relevant factors in the process of knowledge transfer. The defined measurement model will be adjusted and validated according to the context and the unit of analysis corresponding to the professionals in the field of business and administration who are studying an undergraduate or graduate program and who are working in the productive sector in the cities of Guayaquil, Quito and Cuenca of Ecuador.

The methodology of this study includes several statistical techniques of multivariate correlation, modeling and contrast. The analysis of the data is structured in four stages that include (a) descriptive statistics for the characterization of the sample; (b) analysis of the distribution of variables; (c) AFC for the adjustment and validation of the questionnaire and (d) PLS-SEM for the contrast of the hypotheses of the structural

model. The process described in this chapter will allow obtaining consistent and valid results that will contribute, at a theoretical level, to the process of knowledge transfer in the university-business interactions.

References

- Abraham, S., Mir, B. A., Suhara, H., Mohamed, F. A., & Sato, M. (2019). Structural equation modeling and confirmatory factor analysis of social media use and education. *International Journal of Educational Technology in Higher Education*, 16(1), 32. <https://doi.org/10.1186/s41239-019-0157-y>
- Agostini, L., Nosella, A., Sarala, R., Spender, J.-C., & Wegner, D. (2020). Tracing the evolution of the literature on knowledge management in inter-organizational contexts: A bibliometric analysis. *Journal of Knowledge Management*, 24(2), 463-490. <https://doi.org/10.1108/JKM-07-2019-0382>
- Agrawal, A. K. (2001). University-to-industry knowledge transfer: Literature review and unanswered questions. *International Journal of management reviews*, 3(4), 285–302.
- Ahmad, N., Lodhi, M. S., Zaman, K., & Naseem, I. (2017). Knowledge Management: A Gateway for Organizational Performance. *Journal of the Knowledge Economy*, 8(3), 859-876. <https://doi.org/10.1007/s13132-015-0282-3>
- Alagaraja, M. (2013). HRD and HRM Perspectives on Organizational Performance: A Review of Literature. *Human Resource Development Review*, 12(2), 117-143. <https://doi.org/10.1177/1534484312450868>
- Alashwal, A. M., Abdul-Rahman, H., & Radzi, J. (2016). Knowledge Utilization

Process in Highway Construction Projects. *Journal of Management in Engineering*, 32(4), 05016006. [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000429](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000429)

Alavi, M., & Leidner, D. E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1), 107. <https://doi.org/10.2307/3250961>

Al-Emran, M., & Teo, T. (2020). Do knowledge acquisition and knowledge sharing really affect e-learning adoption? An empirical study. *Education and Information Technologies*, 25(3), 1983-1998. <https://doi.org/10.1007/s10639-019-10062-w>

Alexander, A., Martin, D. P., Manolchev, C., & Miller, K. (2020). University–industry collaboration: Using meta-rules to overcome barriers to knowledge transfer. *The Journal of Technology Transfer*, 45(2), 371-392. <https://doi.org/10.1007/s10961-018-9685-1>

Alexander, A. T., & Childe, S. J. (2013). Innovation: A knowledge transfer perspective. *Production Planning & Control*, 24(2-3), 208-225. <https://doi.org/10.1080/09537287.2011.647875>

Alford, P., & Jones, R. (2020). The lone digital tourism entrepreneur: Knowledge acquisition and collaborative transfer. *Tourism Management*, 81, 104139. <https://doi.org/10.1016/j.tourman.2020.104139>

Al-Gahtani, S. S. (2016). Empirical investigation of e-learning acceptance and assimilation: A structural equation model. *Applied Computing and Informatics*, 12(1), 27-50. <https://doi.org/10.1016/j.aci.2014.09.001>

Alsharo, M., Gregg, D., & Ramirez, R. (2017). Virtual team effectiveness: The role of knowledge sharing and trust. *Information & Management*, 54(4), 479-490. <https://doi.org/10.1016/j.im.2016.10.005>

- Ankrah, S. N., Burgess, T. F., Grimshaw, P., & Shaw, N. E. (2013). Asking both university and industry actors about their engagement in knowledge transfer: What single-group studies of motives omit. *Technovation*, 33(2-3), 50-65. <https://doi.org/10.1016/j.technovation.2012.11.001>
- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2001). Do high performance work systems pay off? En *Research in the Sociology of Work* (Vol. 10, pp. 85-107). Emerald (MCB UP). [https://doi.org/10.1016/S0277-2833\(01\)80022-4](https://doi.org/10.1016/S0277-2833(01)80022-4)
- Appelbaum, E., Bailey, T., Berg, P., Kalleberg, A. L., & Bailey, T. A. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press.
- Argote, L., & Fahrenkopf, E. (2016). Knowledge transfer in organizations: The roles of members, tasks, tools, and networks. *Organizational Behavior and Human Decision Processes*, 136, 146-159. <https://doi.org/10.1016/j.obhdp.2016.08.003>
- Argote, L., & Ingram, P. (2000). Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes*, 82(1), 150-169. <https://doi.org/10.1006/obhd.2000.2893>
- Arruda, H. F., Silva, F. N., Costa, L. da F., & Amancio, D. R. (2017). Knowledge Acquisition: A Complex Networks Approach. *Information Sciences*, 421, 154-166. <https://doi.org/10.1016/j.ins.2017.08.091>
- Attebo, K., Mitchell, P., Cumming, R., & BMath, W. S. (1997). Knowledge and beliefs about common eye diseases. *Australian and New Zealand Journal of Ophthalmology*, 25(3), 283-287. <https://doi.org/10.1111/j.1442-9071.1997.tb01516.x>
- Augier, M., & Teece, D. J. (2009). Dynamic Capabilities and the Role of Managers in Business Strategy and Economic Performance. *Organization Science*, 20(2), 410-

421. <https://doi.org/10.1287/orsc.1090.0424>

- Ayuso, A. (2018). Reframing Multilevel Interregionalism between Latin America and the EU. En *Interregionalism and the Americas* (p. 19). Lexington Books.
- Azagra-Caro, J. M., Barberá-Tomás, D., Edwards-Schachter, M., & Tur, E. M. (2017). Dynamic interactions between university-industry knowledge transfer channels: A case study of the most highly cited academic patent. *Research Policy*, *46*(2), 463-474. <https://doi.org/10.1016/j.respol.2016.11.011>
- Bailey, T. (1993). *Discretionary effort and the organization of work: Employee participation and work reform since Hawthorne* [Unpublished manuscript]. Teachers College, Columbia University.
- Balle, A. R., Steffen, M. O., Curado, C., & Oliveira, M. (2019). Interorganizational knowledge sharing in a science and technology park: The use of knowledge sharing mechanisms. *Journal of Knowledge Management*, *23*(10), 2016-2038. <https://doi.org/10.1108/JKM-05-2018-0328>
- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on psychological science*, *1*(2), 164–180. <https://doi.org/10.1111/j.1745-6916.2006.00011.x>
- Barak, M., Watted, A., & Haick, H. (2016). Motivation to learn in massive open online courses: Examining aspects of language and social engagement. *Computers & Education*, *94*, 49-60. <https://doi.org/10.1016/j.compedu.2015.11.010>
- Barley, W. C., Treem, J. W., & Kuhn, T. (2018). Valuing Multiple Trajectories of Knowledge: A Critical Review and Agenda for Knowledge Management Research. *Academy of Management Annals*, *12*(1), 278-317. <https://doi.org/10.5465/annals.2016.0041>
- Basgier, C., & Simpson, A. (2019). Trouble and transformation in higher education:

Identifying threshold concepts through faculty narratives about teaching writing.

Studies in Higher Education, 1-13.

<https://doi.org/10.1080/03075079.2019.1598967>

Battistella, C., De Toni, A. F., & Pillon, R. (2016). Inter-organisational

technology/knowledge transfer: A framework from critical literature review. *The Journal of Technology Transfer*, 41(5), 1195-1234.

<https://doi.org/10.1007/s10961-015-9418-7>

Bauer, K. N., Orvis, K. A., Ely, K., & Surface, E. A. (2016). Re-examination of

Motivation in Learning Contexts: Meta-analytically Investigating the Role Type of Motivation Plays in the Prediction of Key Training Outcomes. *Journal of Business and Psychology*, 31(1), 33-50. [https://doi.org/10.1007/s10869-015-9401-](https://doi.org/10.1007/s10869-015-9401-1)

[1](https://doi.org/10.1007/s10869-015-9401-1)

1

Bekkers, R., & Bodas Freitas, I. M. (2008). Analysing knowledge transfer channels

between universities and industry: To what degree do sectors also matter?

Research Policy, 37(10), 1837-1853. <https://doi.org/10.1016/j.respol.2008.07.007>

Bellucci, A., & Pennacchio, L. (2016). University knowledge and firm innovation:

Evidence from European countries. *The Journal of Technology Transfer*, 41(4),

730-752. <https://doi.org/10.1007/s10961-015-9408-9>

Beltrán-Martín, I., & Bou-Llusar, J. C. (2018). Examining the intermediate role of

employee abilities, motivation and opportunities to participate in the relationship between HR bundles and employee performance. *BRQ Business Research Quarterly*, 21(2), 99-110. <https://doi.org/10.1016/j.brq.2018.02.001>

[1](https://doi.org/10.1016/j.brq.2018.02.001)

Bengtsson, L. (2017). A comparison of university technology transfer offices'

commercialization strategies in the Scandinavian countries. *Science and Public*

Policy, scw086. <https://doi.org/10.1093/scipol/scw086>

- Bhatti, W. A., Larimo, J., & Carrasco, I. (2016). Strategy's effect on knowledge sharing in host country networks. *Journal of Business Research*, 69(11), 4769-4774.
<https://doi.org/10.1016/j.jbusres.2016.04.028>
- Bloodgood, J. M. (2019). Knowledge acquisition and firm competitiveness: The role of complements and knowledge source. *Journal of Knowledge Management*, 23(1), 46-66. <https://doi.org/10.1108/JKM-09-2017-0430>
- Blumberg, M., & Pringle, C. D. (1982). The Missing Opportunity in Organizational Research: Some Implications for a Theory of Work Performance. *Academy of Management Review*, 7(4), 560-569. <https://doi.org/10.5465/amr.1982.4285240>
- Boh, W. F., De-Haan, U., & Strom, R. (2016). University technology transfer through entrepreneurship: Faculty and students in spinoffs. *The Journal of Technology Transfer*, 41(4), 661-669. <https://doi.org/10.1007/s10961-015-9399-6>
- Bolisani, E., & Bratianu, C. (2017). Knowledge strategy planning: An integrated approach to manage uncertainty, turbulence, and dynamics. *Journal of Knowledge Management*, 21(2), 233-253. <https://doi.org/10.1108/JKM-02-2016-0071>
- Bonanomi, A., Olivari, M. G., Mascheroni, E., Gatti, E., & Confalonieri, E. (2018). Using a multidimensional Rasch analysis to evaluate the psychometric properties of the Motivated Strategies for Learning Questionnaire (MSLQ) among high school students. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 25, 83-100. <https://doi.org/10.4473/TPM25.1.5>
- Bosancic, B. (2016). Information in the knowledge acquisition process. *Journal of Documentation*, 72(5), 930-960. <https://doi.org/10.1108/JD-10-2015-0122>
- Boselie, P., Dietz, G., & Boon, C. (2005). Commonalities and contradictions in HRM and performance research. *Human Resource Management Journal*, 15(3), 67-94.
<https://doi.org/10.1111/j.1748-8583.2005.tb00154.x>

- Bracken-Roche, D., Bell, E., Macdonald, M. E., & Racine, E. (2017). The concept of ‘vulnerability’ in research ethics: An in-depth analysis of policies and guidelines. *Health Research Policy and Systems, 15*(1), 8. <https://doi.org/10.1186/s12961-016-0164-6>
- Bstieler, L., Hemmert, M., & Barczak, G. (2017). The changing bases of mutual trust formation in inter-organizational relationships: A dyadic study of university-industry research collaborations. *Journal of Business Research, 74*, 47-54. <https://doi.org/10.1016/j.jbusres.2017.01.006>
- Burcharth, A., Praest Knudsen, M., & Sondergaard, H. A. (2017). The role of employee autonomy for open innovation performance. *Business Process Management Journal, 23*(6), 1245-1269. <https://doi.org/10.1108/BPMJ-10-2016-0209>
- Cain, M. K., Zhang, Z., & Yuan, K.-H. (2017). Univariate and multivariate skewness and kurtosis for measuring nonnormality: Prevalence, influence and estimation. *Behavior Research Methods, 49*(5), 1716-1735. <https://doi.org/10.3758/s13428-016-0814-1>
- Calcagnini, G., Giombini, G., Liberati, P., & Travaglini, G. (2016). A matching model of university–industry collaborations. *Small Business Economics, 46*(1), 31-43. <https://doi.org/10.1007/s11187-015-9672-y>
- Caqueo, A., Urzúa, A., Loundon, A., Boucekine, M., Fond, G., & Boyer, L. (2019). The Latin American version of the internalized stigma of mental illness scale (LA-ISMI): A multicentric validation study from three Latin American countries. *Health and Quality of Life Outcomes, 17*(1), 175. <https://doi.org/10.1186/s12955-019-1238-2>
- Carayannis, E. G., Grigoroudis, E., Campbell, D. F. J., Meissner, D., & Stamati, D. (2018). The ecosystem as helix: An exploratory theory-building study of regional

co-opetitive entrepreneurial ecosystems as Quadruple/Quintuple Helix Innovation Models: The ecosystem as helix. *R&D Management*, 48(1), 148-162.

<https://doi.org/10.1111/radm.12300>

Carlisle, J. B., & Loadsman, J. A. (2017). Evidence for non-random sampling in randomised, controlled trials by Yuhji Saitoh. *Anaesthesia*, 72(1), 17-27.

<https://doi.org/10.1111/anae.13650>

Carrillo, F. J. (2015). Knowledge-based development as a new economic culture. *Journal of Open Innovation: Technology, Market, and Complexity*, 1(1), 15.

<https://doi.org/10.1186/s40852-015-0017-5>

Caruso, L. (2016). The 'knowledge-based economy' and the relationship between the economy and society in contemporary capitalism. *European Journal of Social Theory*, 19(3), 409-430. <https://doi.org/10.1177/1368431015611297>

<https://doi.org/10.1177/1368431015611297>

Castillo, T., Alarcón, L. F., & Pellicer, E. (2018). Influence of Organizational Characteristics on Construction Project Performance Using Corporate Social Networks. *Journal of Management in Engineering*, 34(4), 04018013.

[https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000612](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000612)

Cepeda, G., Cegarra, J.-G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. *Journal of Knowledge Management*, 23(1), 67-89. <https://doi.org/10.1108/JKM-05-2018-0322>

<https://doi.org/10.1108/JKM-05-2018-0322>

0322

Chang, C. L., & Lin, T.-C. (2015). The role of organizational culture in the knowledge management process. *Journal of Knowledge Management*, 19(3), 433-455.

<https://doi.org/10.1108/JKM-08-2014-0353>

Chang, Y.-Y., Gong, Y., & Peng, M. W. (2012). Expatriate knowledge transfer, subsidiary absorptive capacity, and subsidiary performance. *Academy of*

Management Journal, 55(4), 927–948.

- Chau, V. S., Gilman, M., & Serbanica, C. (2017). Aligning university–industry interactions: The role of boundary spanning in intellectual capital transfer. *Technological Forecasting and Social Change*, 123, 199–209.
<https://doi.org/10.1016/j.techfore.2016.03.013>
- Chen, Y.-H., Lin, T.-P., & Yen, D. C. (2014). How to facilitate inter-organizational knowledge sharing: The impact of trust. *Information & Management*, 51(5), 568–578. <https://doi.org/10.1016/j.im.2014.03.007>
- Cho, M.-H., & Heron, M. L. (2015). Self-regulated learning: The role of motivation, emotion, and use of learning strategies in students' learning experiences in a self-paced online mathematics course. *Distance Education*, 36(1), 80–99.
<https://doi.org/10.1080/01587919.2015.1019963>
- Chuang, C.-H., Jackson, S. E., & Jiang, Y. (2016). Can Knowledge-Intensive Teamwork Be Managed? Examining the Roles of HRM Systems, Leadership, and Tacit Knowledge. *Journal of Management*, 42(2), 524–554.
<https://doi.org/10.1177/0149206313478189>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128.
<https://doi.org/10.2307/2393553>
- Cole, M. S., Feild, H. S., & Harris, S. G. (2004). Student learning motivation and psychological hardiness: Interactive effects on students' reactions to a management class. *Academy of Management Learning & Education*, 3(1), 64–85.
- Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, 56(5), 754–761. <https://doi.org/10.1037/0022-006X.56.5.754>

- Cook, D. A., & Artino, A. R. (2016). Motivation to learn: An overview of contemporary theories. *Medical Education*, *50*(10), 997-1014.
<https://doi.org/10.1111/medu.13074>
- Crede, M., & Harms, P. (2019). Questionable research practices when using confirmatory factor analysis. *Journal of Managerial Psychology*, *34*(1), 18-30.
<https://doi.org/10.1108/JMP-06-2018-0272>
- Cricelli, L., & Grimaldi, M. (2010). Knowledge-based inter-organizational collaborations. *Journal of Knowledge Management*, *14*(3), 348-358.
<https://doi.org/10.1108/13673271011050094>
- Cropanzano, R., Anthony, E. L., Daniels, S. R., & Hall, A. V. (2017). Social Exchange Theory: A Critical Review with Theoretical Remedies. *Academy of Management Annals*, *11*(1), 479-516. <https://doi.org/10.5465/annals.2015.0099>
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97-140.
<https://doi.org/10.1080/10888691.2018.1537791>
- Darroch, J. (2003). Developing a measure of knowledge management behaviors and practices. *Journal of knowledge management*.
- De Spiegelaere, S., Van Gyes, G., & Van Hootegem, G. (2016). Not All Autonomy is the Same. Different Dimensions of Job Autonomy and Their Relation to Work Engagement & Innovative Work Behavior: Not all Autonomy is the Same. *Human Factors and Ergonomics in Manufacturing & Service Industries*, *26*(4), 515-527. <https://doi.org/10.1002/hfm.20666>
- de Wit-de Vries, E., Dolfsma, W. A., van der Windt, H. J., & Gerkema, M. P. (2019). Knowledge transfer in university–industry research partnerships: A review. *The*

Journal of Technology Transfer, 44(4), 1236-1255.

<https://doi.org/10.1007/s10961-018-9660-x>

Del Chiappa, G., & Baggio, R. (2015). Knowledge transfer in smart tourism destinations: Analyzing the effects of a network structure. *Journal of Destination Marketing & Management*, 4(3), 145-150.

<https://doi.org/10.1016/j.jdmm.2015.02.001>

Deming, D. J. (2017). The Growing Importance of Social Skills in the Labor Market*. *The Quarterly Journal of Economics*, 132(4), 1593-1640.

<https://doi.org/10.1093/qje/qjx022>

Demortier, A.-L. P., Delobbe, N., & El Akremi, A. (2014). Opening the Black Box of HR Practices - Performance Relationship: Testing a Three Pathways AMO Model. *Academy of Management Proceedings*, 2014(1), 14932.

<https://doi.org/10.5465/ambpp.2014.102>

Di Serio, Á., Ibáñez, M. B., & Kloos, C. D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586-596. <https://doi.org/10.1016/j.compedu.2012.03.002>

Dingler, A., & Enkel, E. (2016). Socialization and innovation: Insights from collaboration across industry boundaries. *Technological Forecasting and Social Change*, 109, 50-60. <https://doi.org/10.1016/j.techfore.2016.05.017>

Elton, L. (2008). Collegiality and Complexity: Humboldt's Relevance to British Universities Today. *Higher Education Quarterly*, 62(3), 224-236.

<https://doi.org/10.1111/j.1468-2273.2008.00388.x>

Evans, J. R., & Mathur, A. (2018). The value of online surveys: A look back and a look ahead. *Internet Research*, 28(4), 854-887. <https://doi.org/10.1108/IntR-03-2018-0089>

- Fauzi, M. A., Ling Tan, C. N., Thurasamy, R., & Ojo, A. O. (2019). Evaluating academics' knowledge sharing intentions in Malaysian public universities. *Malaysian Journal of Library & Information Science*, 24(1), 123-143. <https://doi.org/10.22452/mjlis.vol24no1.7>
- Feng, S.-L., & Tuan, H.-L. (2005). Using ARCS model to promote 11th graders' motivation and achievement in learning about acids and bases. *International journal of science and mathematics education*, 3(3), 463–484.
- Fernández-Esquinas, M., Pinto, H., Yruela, M. P., & Pereira, T. S. (2016). Tracing the flows of knowledge transfer: Latent dimensions and determinants of university–industry interactions in peripheral innovation systems. *Technological Forecasting and Social Change*, 113, 266-279. <https://doi.org/10.1016/j.techfore.2015.07.013>
- Ferreira, M., Avitabile, C., Botero Álvarez, J., Haimovich Paz, F., & Urzúa, S. (2017). *At a crossroads: Higher education in Latin America and the Caribbean*. The World Bank.
- Ferris, G. R., Witt, L. A., & Hochwarter, W. A. (2001). Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology*, 86(6), 1075-1082. <https://doi.org/10.1037/0021-9010.86.6.1075>
- Flake, J. K., Pek, J., & Hehman, E. (2017). Construct Validation in Social and Personality Research: Current Practice and Recommendations. *Social Psychological and Personality Science*, 8(4), 370-378. <https://doi.org/10.1177/1948550617693063>
- Flor, M. L., Cooper, S. Y., & Oltra, M. J. (2018). External knowledge search, absorptive capacity and radical innovation in high-technology firms. *European Management Journal*, 36(2), 183-194. <https://doi.org/10.1016/j.emj.2017.08.003>
- Franco, M., & Pinho, C. (2019). A case study about cooperation between University

- Research Centres: Knowledge transfer perspective. *Journal of Innovation & Knowledge*, 4(1), 62-69. <https://doi.org/10.1016/j.jik.2018.03.003>
- Furió, D., Juan, M.-C., Seguí, I., & Vivó, R. (2015). Mobile learning vs. traditional classroom lessons: A comparative study: Mobile vs. traditional learning. *Journal of Computer Assisted Learning*, 31(3), 189-201. <https://doi.org/10.1111/jcal.12071>
- Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2019). Experience Sampling Methods: A Discussion of Critical Trends and Considerations for Scholarly Advancement. *Organizational Research Methods*, 22(4), 969-1006. <https://doi.org/10.1177/1094428118802626>
- Garaus, C., Furtmüller, G., & Güttel, W. H. (2016). The Hidden Power of Small Rewards: The Effects of Insufficient External Rewards on Autonomous Motivation to Learn. *Academy of Management Learning & Education*, 15(1), 45-59. <https://doi.org/10.5465/amle.2012.0284>
- García, V. J., Ruiz, A., & Llorens, F. J. (2007). Effects of Technology Absorptive Capacity and Technology Proactivity on Organizational Learning, Innovation and Performance: An Empirical Examination. *Technology Analysis & Strategic Management*, 19(4), 527-558. <https://doi.org/10.1080/09537320701403540>
- Garrick, J., & Chan, A. (2017). Knowledge management and professional experience: The uneasy dynamics between tacit knowledge and performativity in organizations. *Journal of Knowledge Management*, 21(4), 872-884. <https://doi.org/10.1108/JKM-02-2017-0058>
- Gasik, S. (2011). A Model of Project Knowledge Management. *Project Management Journal*, 42(3), 23-44. <https://doi.org/10.1002/pmj.20239>
- Geuna, A., & Muscio, A. (2009). The Governance of University Knowledge Transfer:

A Critical Review of the Literature. *Minerva*, 47(1), 93-114.

<https://doi.org/10.1007/s11024-009-9118-2>

Gile, K. J., Beaudry, I. S., Handcock, M. S., & Ott, M. Q. (2018). Methods for Inference from Respondent-Driven Sampling Data. *Annual Review of Statistics and Its Application*, 5(1), 65-93. <https://doi.org/10.1146/annurev-statistics-031017-100704>

Glynn, S. M., Brickman, P., Armstrong, N., & Taasobshirazi, G. (2011). Science motivation questionnaire II: Validation with science majors and nonscience majors. *Journal of Research in Science Teaching*, 48(10), 1159-1176. <https://doi.org/10.1002/tea.20442>

Goel, R. K., Göktepe-Hultén, D., & Grimpe, C. (2017). Who instigates university–industry collaborations? University scientists versus firm employees. *Small Business Economics*, 48(3), 503-524. <https://doi.org/10.1007/s11187-016-9795-9>

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, 18(1), 185–214.

Golden, T. D., & Gajendran, R. S. (2019). Unpacking the Role of a Telecommuter’s Job in Their Performance: Examining Job Complexity, Problem Solving, Interdependence, and Social Support. *Journal of Business and Psychology*, 34(1), 55-69. <https://doi.org/10.1007/s10869-018-9530-4>

Gope, S., Elia, G., & Passiante, G. (2018). The effect of HRM practices on knowledge management capacity: A comparative study in Indian IT industry. *Journal of Knowledge Management*, 22(3), 649-677. <https://doi.org/10.1108/JKM-10-2017-0453>

Green, T. (2016). A methodological review of structural equation modelling in higher

education research. *Studies in Higher Education*, 41(12), 2125-2155.

<https://doi.org/10.1080/03075079.2015.1021670>

Grundel, I., & Dahlström, M. (2016). A Quadruple and Quintuple Helix Approach to Regional Innovation Systems in the Transformation to a Forestry-Based Bioeconomy. *Journal of the Knowledge Economy*, 7(4), 963-983.

<https://doi.org/10.1007/s13132-016-0411-7>

Gruzd, A., Staves, K., & Wilk, A. (2012). Connected scholars: Examining the role of social media in research practices of faculty using the UTAUT model. *Computers in Human Behavior*, 28(6), 2340-2350. <https://doi.org/10.1016/j.chb.2012.07.004>

Guerrero, M., Herrera, F., & Urbano, D. (2019). Strategic knowledge management within subsidised entrepreneurial university-industry partnerships. *Management Decision*, 57(12), 3280-3300. <https://doi.org/10.1108/MD-10-2018-1126>

Guo, Y., Jasovska, P., Rammal, H. G., & Rose, E. L. (2018). Global mobility of professionals and the transfer of tacit knowledge in multinational service firms. *Journal of Knowledge Management*, JKM-09-2017-0399.

<https://doi.org/10.1108/JKM-09-2017-0399>

Hackman, J. R. (1980). Work redesign and motivation. *Professional Psychology*, 11(3), 445-455. <https://doi.org/10.1037/0735-7028.11.3.445>

Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8 th). Cengage Learning EMEA.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.

<https://doi.org/10.1108/EBR-11-2018-0203>

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial*

least squares structural equation modeling (PLS-SEM) (2nd ed.). Sage publications.

Harrison, J., & Turok, I. (2017). Universities, knowledge and regional development.

Regional Studies, 51(7), 977-981.

<https://doi.org/10.1080/00343404.2017.1328189>

Hart, T. A., Gilstrap, J. B., & Bolino, M. C. (2016). Organizational citizenship behavior

and the enhancement of absorptive capacity. *Journal of Business Research*,

69(10), 3981-3988. <https://doi.org/10.1016/j.jbusres.2016.06.001>

Hayter, C. S., Lubynsky, R., & Maroulis, S. (2017). Who is the academic entrepreneur?

The role of graduate students in the development of university spinoffs. *The Journal of Technology Transfer*, 42(6), 1237-1254.

<https://doi.org/10.1007/s10961-016-9470-y>

Hewitt-Dundas, N. (2012). Research intensity and knowledge transfer activity in UK universities. *Research Policy*, 41(2), 262-275.

<https://doi.org/10.1016/j.respol.2011.10.010>

Holtkamp, P., Kim, S. S., & Kwak, D.-H. (2019). Measuring and Controlling Social

Desirability Bias: Applications in Information Systems Research. *Journal of the Association for Information Systems*, 317-345.

<https://doi.org/10.17705/1jais.00537>

Hou, B., Hong, J., & Shi, X. (2019). Efficiency of university–industry collaboration and

its determinants: Evidence from Chinese leading universities. *Industry and*

Innovation, 1-30. <https://doi.org/10.1080/13662716.2019.1706455>

Howard, C. M., Moret, L., Faulconer, J., Cannon, T., & Tomlin, A. (2018). Preparing

for College Success: Exploring Undergraduate Students' Perceptions of the

Benefits of a College Reading and Study Skills Course through Action Research.

Networks: An Online Journal for Teacher Research, 20(1), 1-19.

<https://doi.org/10.4148/2470-6353.1258>

Howard, J., Gagné, M., Morin, A. J. S., & Van den Broeck, A. (2016). Motivation profiles at work: A self-determination theory approach. *Journal of Vocational Behavior*, 95-96, 74-89. <https://doi.org/10.1016/j.jvb.2016.07.004>

Huybers, T. (2017). Exploring the use of best-worst scaling to elicit course experience questionnaire responses. *Assessment & Evaluation in Higher Education*, 42(8), 1306-1318. <https://doi.org/10.1080/02602938.2016.1270256>

Iacobucci, D. (2010). Structural equations modeling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20(1), 90-98. <https://doi.org/10.1016/j.jcps.2009.09.003>

Inkpen, A. (2005). Knowledge Acquisition and Transfer in Strategic Alliances. En J. Davis, E. Subrahmanian, & A. Westerberg (Eds.), *Knowledge Management: Organizational and Technological Dimensions* (pp. 97-113). Physica-Verlag HD. https://doi.org/10.1007/3-7908-1618-3_5

Iorio, R., Labory, S., & Rentocchini, F. (2017). The importance of pro-social behaviour for the breadth and depth of knowledge transfer activities: An analysis of Italian academic scientists. *Research Policy*, 46(2), 497-509. <https://doi.org/10.1016/j.respol.2016.12.003>

Jablensky, A. (2016). Psychiatric classifications: Validity and utility. *World Psychiatry*, 15(1), 26-31. <https://doi.org/10.1002/wps.20284>

Jackson, D. (2017). Developing pre-professional identity in undergraduates through work-integrated learning. *Higher Education*, 74(5), 833-853. <https://doi.org/10.1007/s10734-016-0080-2>

Jafari Navimipour, N., & Charband, Y. (2016). Knowledge sharing mechanisms and

techniques in project teams: Literature review, classification, and current trends.

Computers in Human Behavior, 62, 730-742.

<https://doi.org/10.1016/j.chb.2016.05.003>

Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2005). Managing potential and realized absorptive capacity: How do organizational antecedents matter? *Academy of management journal*, 48(6), 999–1015.

Jefferson, D. J., Maida, M., Farkas, A., Alandete-Saez, M., & Bennett, A. B. (2017). Technology transfer in the Americas: Common and divergent practices among major research universities and public sector institutions. *The Journal of Technology Transfer*, 42(6), 1307-1333. <https://doi.org/10.1007/s10961-016-9516-1>

Joia, L. A., & Lemos, B. (2010). Relevant factors for tacit knowledge transfer within organisations. *Journal of Knowledge Management*, 14(3), 410-427.

<https://doi.org/10.1108/13673271011050139>

Jong, J. (2016). The Role of Performance Feedback and Job Autonomy in Mitigating the Negative Effect of Role Ambiguity on Employee Satisfaction. *Public Performance & Management Review*, 39(4), 814-834.

<https://doi.org/10.1080/15309576.2015.1137771>

Ju, H., Zhang, S., Zhao, S., & Ju, X. (2016). Knowledge transfer capacity of universities and knowledge transfer success: Evidence from university - industry collaborations in China. *International Journal of Technology Management*,

71(3/4), 278. <https://doi.org/10.1504/IJTM.2016.078572>

Kalleberg, A. L., Marsden, P. V., Reynolds, J., & Knoke, D. (2006). Beyond Profit? Sectoral Differences in High-Performance Work Practices. *Work and Occupations*, 33(3), 271-302. <https://doi.org/10.1177/0730888406290049>

- Kanfer, R., Frese, M., & Johnson, R. E. (2017). Motivation related to work: A century of progress. *Journal of Applied Psychology, 102*(3), 338-355.
<https://doi.org/10.1037/apl0000133>
- Kehoe, R. R., & Wright, P. M. (2013). The Impact of High-Performance Human Resource Practices on Employees' Attitudes and Behaviors. *Journal of Management, 39*(2), 366-391. <https://doi.org/10.1177/0149206310365901>
- Kim, K. Y., Atwater, L., Patel, P. C., & Smither, J. W. (2016). Multisource feedback, human capital, and the financial performance of organizations. *Journal of Applied Psychology, 101*(11), 1569-1584. <https://doi.org/10.1037/apl0000125>
- Kim, S.-N. (2017). Is telecommuting sustainable? An alternative approach to estimating the impact of home-based telecommuting on household travel. *International Journal of Sustainable Transportation, 11*(2), 72-85.
<https://doi.org/10.1080/15568318.2016.1193779>
- Kline, R. B. (2011). *Convergence of structural equation modeling and multilevel modeling* (pp. 562-589). na.
- Knies, E., & Leisink, P. (2014). Linking people management and extra-role behaviour: Results of a longitudinal study: Linking people management and extra-role behaviour. *Human Resource Management Journal, 24*(1), 57-76.
<https://doi.org/10.1111/1748-8583.12023>
- Ko, D.-G., Kirsch, L. J., & King, W. R. (2005). Antecedents of knowledge transfer from consultants to clients in enterprise system implementations. *MIS quarterly, 29*, 59-85.
- Korhonen-Sande, S., & Sande, J. B. (2016). Improving customer knowledge transfer in industrial firms: How does previous work experience influence the effect of reward systems? *Journal of Business & Industrial Marketing, 31*(2), 232-246.
<https://doi.org/10.1108/JBIM-03-2014-0048>

- Kroon, B., Van De Voorde, K., & Timmers, J. (2013). High performance work practices in small firms: A resource-poverty and strategic decision-making perspective. *Small Business Economics*, *41*(1), 71-91. <https://doi.org/10.1007/s11187-012-9425-0>
- Krumrei-Mancuso, E. J., & Rouse, S. V. (2016). The Development and Validation of the Comprehensive Intellectual Humility Scale. *Journal of Personality Assessment*, *98*(2), 209-221. <https://doi.org/10.1080/00223891.2015.1068174>
- Kumar, D. S., & Purani, K. (2018). Model specification issues in PLS-SEM: Illustrating linear and non-linear models in hospitality services context. *Journal of Hospitality and Tourism Technology*, *9*(3), 338-353. <https://doi.org/10.1108/JHTT-09-2017-0105>
- Kuvaas, B., Buch, R., & Dysvik, A. (2016). Performance Management: Perceiving Goals as Invariable and Implications for Perceived Job Autonomy and Work Performance. *Human Resource Management*, *55*(3), 401-412. <https://doi.org/10.1002/hrm.21680>
- Lachar, D., & Kline, R. B. (1994). *Personality Inventory for Children and Personality Inventory for Youth*.
- Lai, J., Lui, S. S., & Tsang, E. W. K. (2016). Intrafirm Knowledge Transfer and Employee Innovative Behavior: The Role of Total and Balanced Knowledge Flows: Intrafirm Knowledge Transfer. *Journal of Product Innovation Management*, *33*(1), 90-103. <https://doi.org/10.1111/jpim.12262>
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct. *Academy of Management Review*, *31*(4), 833-863. <https://doi.org/10.5465/amr.2006.22527456>
- Lane, P. J., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational

- learning. *Strategic Management Journal*, 19, 461–477.
- Lane, P. J., Salk, J. E., & Lyles, M. A. (2001). Absorptive capacity, learning, and performance in international joint ventures. *Strategic Management Journal*, 1139–1161. <https://doi.org/10.1002/smj.206>
- Lans, T., Verhees, F., & Verstegen, J. (2016). Social Competence in Small Firms-Fostering Workplace Learning and Performance: SOCIAL COMPETENCE IN SMALL FIRMS. *Human Resource Development Quarterly*, 27(3), 321-348. <https://doi.org/10.1002/hrdq.21254>
- Larrán Jorge, M., & Andrades Peña, F. J. (2017). Analysing the literature on university social responsibility: A review of selected higher education journals. *Higher Education Quarterly*, 71(4), 302-319. <https://doi.org/10.1111/hequ.12122>
- Law, C., & Ngai, E. (2008). An empirical study of the effects of knowledge sharing and learning behaviors on firm performance. *Expert Systems with Applications*, 34(4), 2342-2349. <https://doi.org/10.1016/j.eswa.2007.03.004>
- Lee, S. J., & Jung, J. (2018). Work experiences and knowledge transfer among Korean academics: Focusing on generational differences. *Studies in Higher Education*, 43(11), 2033-2058. <https://doi.org/10.1080/03075079.2017.1301416>
- Lee, S. M., Kim, T., & Jang, S. H. (2015). Inter-organizational knowledge transfer through corporate venture capital investment. *Management Decision*, 53(7), 1601-1618. <https://doi.org/10.1108/MD-12-2014-0668>
- Lehenbauer, M., Kothgassner, O. D., Kryspin-Exner, I., & Stetina, B. U. (2013). An online self-administered social skills training for young adults: Results from a pilot study. *Computers & Education*, 61, 217-224. <https://doi.org/10.1016/j.compedu.2012.09.007>
- Lehmann, E. E., & Menter, M. (2016). University–industry collaboration and regional

wealth. *The Journal of Technology Transfer*, 41(6), 1284-1307.

<https://doi.org/10.1007/s10961-015-9445-4>

Lei, P.-W., & Shiverdecker, L. K. (2020). Performance of Estimators for Confirmatory Factor Analysis of Ordinal Variables with Missing Data. *Structural Equation Modeling: A Multidisciplinary Journal*, 27(4), 584-601.

<https://doi.org/10.1080/10705511.2019.1680292>

Leisyte, L. (2011). University commercialization policies and their implementation in the Netherlands and the United States. *Science and Public Policy*, 38(6), 437-448.

<https://doi.org/10.3152/030234211X12960315267778>

Leonard, N., & Insch, G. S. (2005). Tacit Knowledge in Academia: A Proposed Model and Measurement Scale. *The Journal of Psychology*, 139(6), 495-512.

<https://doi.org/10.3200/JRLP.139.6.495-512>

Leu, G., & Abbass, H. (2016). A multi-disciplinary review of knowledge acquisition methods: From human to autonomous eliciting agents. *Knowledge-Based Systems*, 105, 1-22. <https://doi.org/10.1016/j.knosys.2016.02.012>

Leung, L., & Zhang, R. (2017). Mapping ICT use at home and telecommuting practices: A perspective from work/family border theory. *Telematics and Informatics*, 34(1), 385-396. <https://doi.org/10.1016/j.tele.2016.06.001>

Levallet, N., & Chan, Y. E. (2019). Organizational knowledge retention and knowledge loss. *Journal of Knowledge Management*, 23(1), 176-199.

<https://doi.org/10.1108/JKM-08-2017-0358>

Levy, O., & Reiche, B. S. (2018). The politics of cultural capital: Social hierarchy and organizational architecture in the multinational corporation. *Human Relations*, 71(6), 867-894. <https://doi.org/10.1177/0018726717729208>

Leydesdorff, L., & Ivanova, I. (2016). "Open innovation" and "triple helix" models of

innovation: Can synergy in innovation systems be measured? *Journal of Open Innovation: Technology, Market, and Complexity*, 2(1), 11.

<https://doi.org/10.1186/s40852-016-0039-7>

Li, K., Peng, M. Y.-P., Du, Z., Li, J., Yen, K.-T., & Yu, T. (2020). Do Specific Pedagogies and Problem-Based Teaching Improve Student Employability? A Cross-Sectional Survey of College Students. *Frontiers in Psychology*, 11, 1099.

<https://doi.org/10.3389/fpsyg.2020.01099>

Liao, S.-H., Chen, C.-C., Hu, D.-C., Chung, Y., & Yang, M.-J. (2017). Developing a sustainable competitive advantage: Absorptive capacity, knowledge transfer and organizational learning. *The Journal of Technology Transfer*, 42(6), 1431-1450.

<https://doi.org/10.1007/s10961-016-9532-1>

Lichtenthaler, U. (2016). Determinants of absorptive capacity: The value of technology and market orientation for external knowledge acquisition. *Journal of Business & Industrial Marketing*, 31(5), 600-610. <https://doi.org/10.1108/JBIM-04-2015-0076>

Liebowitz, J. (1999). *Knowledge Management Handbook*. CRC Press.

Lieke, L., Bakker, A. B., Hetland, J., & Keulemans, L. (2012). Do new ways of working foster work engagement? *Psicothema*, 24(1), 113–120.

Lin, H. (2007). Knowledge sharing and firm innovation capability: An empirical study. *International Journal of Manpower*, 28(3/4), 315-332.

<https://doi.org/10.1108/01437720710755272>

Liou, D.-K., Chih, W.-H., Yuan, C.-Y., & Lin, C.-Y. (2016). The study of the antecedents of knowledge sharing behavior: The empirical study of Yambol online test community. *Internet Research*, 26(4), 845-868.

<https://doi.org/10.1108/IntR-10-2014-0256>

- Llopis, O., & Foss, N. J. (2016). Understanding the climate–knowledge sharing relation: The moderating roles of intrinsic motivation and job autonomy. *European Management Journal*, 34(2), 135-144. <https://doi.org/10.1016/j.emj.2015.11.009>
- Lo, M. F., & Tian, F. (2019). Enhancing competitive advantage in Hong Kong higher education: Linking knowledge sharing, absorptive capacity and innovation capability. *Higher Education Quarterly*, hequ.12244. <https://doi.org/10.1111/hequ.12244>
- Loitz, C. C., Stearns, J. A., Fraser, S. N., Storey, K., & Spence, J. C. (2017). Network analysis of inter-organizational relationships and policy use among active living organizations in Alberta, Canada. *BMC Public Health*, 17(1), 649. <https://doi.org/10.1186/s12889-017-4661-5>
- Lopes, H., Calapez, T., & Lopes, D. (2017). The determinants of labor autonomy and employee involvement: A multilevel analysis. *Economic and Industrial Democracy*, 38(3), 448-472. <https://doi.org/10.1177/0143831X15579226>
- Mabey, C., & Zhao, S. (2017). Managing five paradoxes of knowledge exchange in networked organizations: New priorities for HRM?: Five paradoxes of knowledge exchange. *Human Resource Management Journal*, 27(1), 39-57. <https://doi.org/10.1111/1748-8583.12106>
- Macduffie, J. P. (1995). Human Resource Bundles and Manufacturing Performance: Organizational Logic and Flexible Production Systems in the World Auto Industry. *ILR Review*, 48(2), 197-221. <https://doi.org/10.1177/001979399504800201>
- MacInnis, D. J., & Jaworski, B. J. (1989). Information Processing from Advertisements: Toward an Integrative Framework. *Journal of Marketing*, 53(4), 1-23. <https://doi.org/10.1177/002224298905300401>

- Major, D. A., Turner, J. E., & Fletcher, T. D. (2006). Linking proactive personality and the Big Five to motivation to learn and development activity. *Journal of Applied Psychology, 91*(4), 927-935. <https://doi.org/10.1037/0021-9010.91.4.927>
- Malik, A., Froese, F. J., & Sharma, P. (2020). Role of HRM in knowledge integration: Towards a conceptual framework. *Journal of Business Research, 109*, 524-535. <https://doi.org/10.1016/j.jbusres.2019.01.029>
- Manley, S. C., Hair, J. F., Williams, R. I., & McDowell, W. C. (2020). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*. <https://doi.org/10.1007/s11365-020-00687-6>
- Maravilhas, S., & Martins, J. (2019). Strategic knowledge management in a digital environment: Tacit and explicit knowledge in Fab Labs. *Journal of Business Research, 94*, 353-359. <https://doi.org/10.1016/j.jbusres.2018.01.061>
- Marchiori, D., & Franco, M. (2020). Knowledge transfer in the context of inter-organizational networks: Foundations and intellectual structures. *Journal of Innovation & Knowledge, 5*(2), 130-139. <https://doi.org/10.1016/j.jik.2019.02.001>
- Mariano, S., & Walter, C. (2015). The construct of absorptive capacity in knowledge management and intellectual capital research: Content and text analyses. *Journal of Knowledge Management, 19*(2), 372-400. <https://doi.org/10.1108/JKM-08-2014-0342>
- Marques, J. M. R., La Falce, J. L., Marques, F. M. F. R., De Muylder, C. F., & Silva, J. T. M. (2019). The relationship between organizational commitment, knowledge transfer and knowledge management maturity. *Journal of Knowledge Management, 23*(3), 489-507. <https://doi.org/10.1108/JKM-03-2018-0199>
- Marulanda, C. E., Valencia, F. J., & Marín, P. F. (2019). Principales Obstáculos para la

Transferencia de Conocimiento en los Centros e Institutos de Investigación del Triángulo del Café en Colombia. *Información Tecnológica*, 30(3), 39–46.

<https://doi-org.ezproxybib.pucp.edu.pe/10.4067/S0718-07642019000300039>

- Mascarenhas, C., Ferreira, J. J., & Marques, C. (2018). University–industry cooperation: A systematic literature review and research agenda. *Science and Public Policy*, 45(5), 708-718. <https://doi.org/10.1093/scipol/scy003>
- Masuda, A. D., Holtschlag, C., & Nicklin, J. M. (2017). Why the availability of telecommuting matters: The effects of telecommuting on engagement via goal pursuit. *Career Development International*, 22(2), 200-219. <https://doi.org/10.1108/CDI-05-2016-0064>
- Meissner, D., & Carayannis, E. G. (2017). Value generation from industry-science linkages in light of targeted open innovation. *Journal of Knowledge Management*, 21(2), 295-307. <https://doi.org/10.1108/JKM-11-2016-0510>
- Menard, P., Bott, G. J., & Crossler, R. E. (2017). User Motivations in Protecting Information Security: Protection Motivation Theory Versus Self-Determination Theory. *Journal of Management Information Systems*, 34(4), 1203-1230. <https://doi.org/10.1080/07421222.2017.1394083>
- Meng, D., Li, X., & Rong, K. (2019). Industry-to-university knowledge transfer in ecosystem-based academic entrepreneurship: Case study of automotive dynamics & control group in Tsinghua University. *Technological Forecasting and Social Change*, 141, 249-262. <https://doi.org/10.1016/j.techfore.2018.10.005>
- Menges, J. I., Tussing, D. V., Wihler, A., & Grant, A. M. (2017). When Job Performance is All Relative: How Family Motivation Energizes Effort and Compensates for Intrinsic Motivation. *Academy of Management Journal*, 60(2), 695-719. <https://doi.org/10.5465/amj.2014.0898>

- Meroño, A. L. (2016). Perceived benefits of and barriers to the adoption of teleworking: Peculiarities of Spanish family firms. *Behaviour & Information Technology*, 1-12. <https://doi.org/10.1080/0144929X.2016.1192684>
- Miller, K., McAdam, R., Moffett, S., Alexander, A., & Puthusserry, P. (2016a). Knowledge transfer in university quadruple helix ecosystems: An absorptive capacity perspective. *R&D Management*, 46(2), 383–399.
- Miller, K., McAdam, R., Moffett, S., Alexander, A., & Puthusserry, P. (2016b). Knowledge transfer in university quadruple helix ecosystems: An absorptive capacity perspective: Knowledge transfer in University Quadruple Helix ecosystems. *R&D Management*, 46(2), 383-399. <https://doi.org/10.1111/radm.12182>
- Minbaeva, D., Pedersen, T., Björkman, I., Fey, C. F., & Park, H. J. (2003). MNC knowledge transfer, subsidiary absorptive capacity, and HRM. *Journal of International Business Studies*, 34(6), 586-599. <https://doi.org/10.1057/palgrave.jibs.8400056>
- Mowery, D. C., & Oxley, J. E. (1995). *Inward technology transfer and*.
- Muecke, S., & Iseke, A. (2019). How Does Job Autonomy Influence Job Performance? A Meta-analytic Test of Theoretical Mechanisms. *Academy of Management Proceedings*, 2019(1), 14632. <https://doi.org/10.5465/AMBPP.2019.145>
- Nguyen, H., Johnson, A., Collins, C., & Parker, S. K. (2017). Confidence Matters: Self-efficacy Moderates the Credit that Supervisors Give to Adaptive and Proactive Role Behaviours: Confidence Matters. *British Journal of Management*, 28(2), 315-330. <https://doi.org/10.1111/1467-8551.12149>
- Noe, R. A. (1986). Trainees' Attributes and Attitudes: Neglected Influences on Training Effectiveness. *Academy of Management Review*, 11(4), 736-749.

<https://doi.org/10.5465/amr.1986.4283922>

- Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: Test of a model. *Personnel psychology*, 39(3), 497–523.
- Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14–37.
- Notari, M., Baumgartner, A., & Herzog, W. (2014). Social skills as predictors of communication, performance and quality of collaboration in project-based learning: Social skills in project-based learning. *Journal of Computer Assisted Learning*, 30(2), 132-147. <https://doi.org/10.1111/jcal.12026>
- Nunes, A. F., Bezerra, C. O., Custódio, J. dos S., Friedrich, C. F., Oliveira, I. S. de, & Lunardi, A. C. (2019). Clinimetric Properties of the Brief Fatigue Inventory Applied to Oncological Patients Hospitalized for Chemotherapy. *Journal of Pain and Symptom Management*, 57(2), 297-303.
<https://doi.org/10.1016/j.jpainsymman.2018.10.508>
- Obeidat, B. Y., Al-Suradi, M. M., Masa'deh, R., & Tarhini, A. (2016). The impact of knowledge management on innovation: An empirical study on Jordanian consultancy firms. *Management Research Review*, 39(10), 1214-1238.
<https://doi.org/10.1108/MRR-09-2015-0214>
- Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404-414.
<https://doi.org/10.1016/j.chb.2016.03.030>
- Orth, M., & Volmer, J. (2017). Daily within-person effects of job autonomy and work engagement on innovative behaviour: The cross-level moderating role of creative self-efficacy. *European Journal of Work and Organizational Psychology*, 26(4),

601-612. <https://doi.org/10.1080/1359432X.2017.1332042>

OVTT. (2020). *Red Universidad Empresa—América Latina, Caribe y Europa*.

<https://www.ovtt.org/red-universidad-empresa-america-latina-caribe-europa>

Paoloni, P., Cesaroni, F. M., & Demartini, P. (2019). Relational capital and knowledge transfer in universities. *Business Process Management Journal*, 25(1), 185-201.

<https://doi.org/10.1108/BPMJ-06-2017-0155>

Park, N. K., Mezas, J. M., Lee, J., & Han, J.-H. (2014). Reverse knowledge diffusion: Competitive dynamics and the knowledge seeking behavior of Korean high-tech firms. *Asia Pacific Journal of Management*, 31(2), 355-375.

<https://doi.org/10.1007/s10490-013-9349-5>

Patel, P. C., Kohtamäki, M., Parida, V., & Wincent, J. (2015). Entrepreneurial orientation-as-experimentation and firm performance: The enabling role of absorptive capacity: Entrepreneurial Orientation-as-experimentation and Firm Performance. *Strategic Management Journal*, 36(11), 1739-1749.

<https://doi.org/10.1002/smj.2310>

Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., Fini, R., Geuna, A., Grimaldi, R., Hughes, A., Krabel, S., Kitson, M., Llerena, P., Lissoni, F., Salter, A., & Sobrero, M. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations.

Research Policy, 42(2), 423-442. <https://doi.org/10.1016/j.respol.2012.09.007>

Phan, H. P., & Ngu, B. H. (2017). Undertaking Experiments in Social Sciences:

Sequential, Multiple Time Series Designs for Consideration. *Educational*

Psychology Review, 29(4), 847-867. <https://doi.org/10.1007/s10648-016-9368-0>

Pletsch, C. S., & Zonatto, V. C. da S. (2018). Evidence of the effects of psychological capital on the transfer of knowledge from accounting students to business

organizations. *Journal of Knowledge Management*, 22(8), 1826-1843.

<https://doi.org/10.1108/JKM-04-2018-0270>

Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47(11), 1451-1458. <https://doi.org/10.1016/j.ijnurstu.2010.06.004>

Rabl, T., Jayasinghe, M., Gerhart, B., & Kühlmann, T. M. (2014). A meta-analysis of country differences in the high-performance work system–business performance relationship: The roles of national culture and managerial discretion. *Journal of Applied Psychology*, 99(6), 1011.

Radhakrishnan, A., Davis, J. S., Sridharan, S. V., Moore, D. W., & David, D. (2018). The impact of inter-organizational information systems-enabled external integration on capabilities of buyer–supplier dyads. *European Management Journal*, 36(4), 558-572. <https://doi.org/10.1016/j.emj.2017.09.006>

Ramadan, B. M., Dahiyat, S. E., Bontis, N., & Al-dalahmeh, M. A. (2017). Intellectual capital, knowledge management and social capital within the ICT sector in Jordan. *Journal of Intellectual Capital*, 18(2), 437-462.
<https://doi.org/10.1108/JIC-06-2016-0067>

Ramayah, T., Yeap, J. A. L., & Ignatius, J. (2014). Assessing Knowledge Sharing Among Academics: A Validation of the Knowledge Sharing Behavior Scale (KSBS). *Evaluation Review*, 38(2), 160-187.
<https://doi.org/10.1177/0193841X14539685>

Raza, S. A., Najmi, A., & Shah, N. (2018). Transferring knowledge from universities to organizations by business students: Findings from a developing country. *Journal of Workplace Learning*, 30(3), 199-215. <https://doi.org/10.1108/JWL-06-2016-0054>

- Razmerita, L., Kirchner, K., & Nielsen, P. (2016). What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication. *Journal of Knowledge Management*, 20(6), 1225-1246.
<https://doi.org/10.1108/JKM-03-2016-0112>
- RedUE. (2020). *Acerca De RedUE*. <https://www.redue-alcue.org/website/about.php>
- Reisinger, Y., & Turner, L. (1999). Structural equation modeling with Lisrel: Application in tourism. *Tourism Management*, 20(1), 71-88.
[https://doi.org/10.1016/S0261-5177\(98\)00104-6](https://doi.org/10.1016/S0261-5177(98)00104-6)
- Renaud-Dubé, A., Guay, F., Talbot, D., Taylor, G., & Koestner, R. (2015). The relations between implicit intelligence beliefs, autonomous academic motivation, and school persistence intentions: A mediation model. *Social Psychology of Education*, 18(2), 255-272. <https://doi.org/10.1007/s11218-014-9288-0>
- Riggio, R. E. (1986). Assessment of basic social skills. *Journal of Personality and social Psychology*, 51(3), 649.
- Riggio, R. E., Tucker, J., & Coffaro, D. (1989). Social skills and empathy. *Personality and individual differences*, 10(1), 93-99.
- Ringle, C. M., Sarstedt, M., Mitchell, R., & Gudergan, S. P. (2018). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, 1-27.
<https://doi.org/10.1080/09585192.2017.1416655>
- Robertson, Jane, & Bond, C. (2005). The Research/Teaching Relation: A View from the Edge. *Higher Education*, 50(3), 509-535. <https://doi.org/10.1007/s10734-004-6365-x>
- Robertson, Jennifer, Barling, J., & Unsworth, K. (2015). Environmental Leadership. *Academy of Management Proceedings*, 2015(1), 13791.

<https://doi.org/10.5465/ambpp.2015.13791symposium>

Ross, M. W., Iguchi, M. Y., & Panicker, S. (2018). Ethical aspects of data sharing and research participant protections. *American Psychologist, 73*(2), 138-145.

<https://doi.org/10.1037/amp0000240>

Roy, S., & Mitra, J. (2018). Tacit and explicit knowledge management and assessment of quality performance of public R&D in emerging economies: An Indian perspective. *Journal of Organizational Change Management, 31*(1), 188-214.

<https://doi.org/10.1108/JOCM-06-2017-0236>

Rusly, F. H., Sun, P. Y.-T., & Corner, J. L. (2015). Change readiness: Creating understanding and capability for the knowledge acquisition process. *Journal of Knowledge Management, 19*(6), 1204-1223. <https://doi.org/10.1108/JKM-02-2015-0092>

Sadiq Sohail, M., & Daud, S. (2009). Knowledge sharing in higher education institutions: Perspectives from Malaysia. *VINE, 39*(2), 125-142.

<https://doi.org/10.1108/03055720910988841>

Sandberg, J., Holmström, J., Napier, N., & Levén, P. (2015). Balancing diversity in innovation networks: Trading zones in university-industry R&D collaboration. *European Journal of Innovation Management, 18*(1), 44-69.

<https://doi.org/10.1108/EJIM-09-2013-0088>

Sarala, R. M., Junni, P., Cooper, C. L., & Tarba, S. Y. (2016). A Sociocultural Perspective on Knowledge Transfer in Mergers and Acquisitions. *Journal of Management, 42*(5), 1230-1249. <https://doi.org/10.1177/0149206314530167>

Sarikwal, L., & Gupta, J. (2013). The impact of high performance work practices and organisational citizenship behaviour on turnover intentions. *Journal of Strategic Human Resource Management, 2*(3), 11.

- Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students* (7 th). Prentice Hall.
- Scaringella, L., & Burtschell, F. (2017). The challenges of radical innovation in Iran: Knowledge transfer and absorptive capacity highlights — Evidence from a joint venture in the construction sector. *Technological Forecasting and Social Change*, *122*, 151-169. <https://doi.org/10.1016/j.techfore.2015.09.013>
- Schaeffer, V., Öcalan-Özel, S., & Pénin, J. (2020). The complementarities between formal and informal channels of university–industry knowledge transfer: A longitudinal approach. *The Journal of Technology Transfer*, *45*(1), 31-55. <https://doi.org/10.1007/s10961-018-9674-4>
- Schmoltdt, A., Bente, H. F., & Haberland, G. (1975). Digitoxin metabolism by rat liver microsomes. *Biochemical Pharmacology*, *24*(17), 1639-1641.
- Schwabbauer, M. L. (1975). Use of the latent image technique to develop and evaluate problem-solving skills. *The American Journal of Medical Technology*, *41*(12), 457-462.
- Seeck, H., & Diehl, M.-R. (2017). A literature review on HRM and innovation – taking stock and future directions. *The International Journal of Human Resource Management*, *28*(6), 913-944. <https://doi.org/10.1080/09585192.2016.1143862>
- Senescyt. (2018). *Cuadros estadísticos (índice de tabulados) sobre los datos históricos de educación superior a nivel nacional. Incluye registro de títulos, oferta académica, matriculados, docentes, becas y cupos. – Senescyt – Secretaría de Educación Superior, Ciencia, Tecnología e Innovación.* <https://www.educacionsuperior.gob.ec/cuadros-estadisticos-indice-de-tabulados-sobre-los-datos-historicos-de-educacion-superior-a-nivel-nacional-incluye-registro-de-titulos-oferta-academica-matriculados-docentes-becas-y-cupos/>

- Sharma, G., & Bansal, P. (Tima). (2020). Cocreating Rigorous and Relevant Knowledge. *Academy of Management Journal*, 63(2), 386–410. <https://doi-org.ezproxybib.pucp.edu.pe/10.5465/amj.2016.0487>
- Shi, G., Ma, Z., Feng, J., Zhu, F., Bai, X., & Gui, B. (2020). The impact of knowledge transfer performance on the artificial intelligence industry innovation network: An empirical study of Chinese firms. *PLoS ONE*, 15(5), 1–22. <https://doi-org.ezproxybib.pucp.edu.pe/10.1371/journal.pone.0232658>
- Shiau, W.-L., Sarstedt, M., & Hair, J. F. (2019). Internet research using partial least squares structural equation modeling (PLS-SEM). *Internet Research*, 29(3), 398–406. <https://doi.org/10.1108/IntR-10-2018-0447>
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*, 53(11), 2322–2347. <https://doi.org/10.1108/EJM-02-2019-0189>
- Sobaih, A. E. E., Ibrahim, Y., & Gabry, G. (2019). Unlocking the black box: Psychological contract fulfillment as a mediator between HRM practices and job performance. *Tourism Management Perspectives*, 30, 171–181. <https://doi.org/10.1016/j.tmp.2019.03.001>
- Song, S., & Sun, J. (2018). Exploring effective work unit knowledge management (KM): Roles of network, task, and KM strategies. *Journal of Knowledge Management*, 22(7), 1614–1636. <https://doi.org/10.1108/JKM-10-2017-0449>
- Soto, P., & Cegarra, J.-G. (2016). New ICTs for Knowledge Management in Organizations. *Journal of Knowledge Management*, 20(3), 417–422. <https://doi.org/10.1108/JKM-02-2016-0057>
- Souza, A. C. de, Alexandre, N. M. C., Guirardello, E. de B., Souza, A. C. de,

Alexandre, N. M. C., & Guirardello, E. de B. (2017). Propriedades psicométricas na avaliação de instrumentos: Avaliação da confiabilidade e da validade.

Epidemiologia e Serviços de Saúde, 26(3), 649-659.

<https://doi.org/10.5123/S1679-49742017000300022>

Stephens, T. M. (1978). *Social skills in the classroom*. Cedars Press Columbus, OH.

Stiglbauer, B., & Kovacs, C. (2018). The more, the better? Curvilinear effects of job autonomy on well-being from vitamin model and PE-fit theory perspectives.

Journal of Occupational Health Psychology, 23(4), 520-536.

<https://doi.org/10.1037/ocp0000107>

Stutz, F., Schaffner, E., & Schiefele, U. (2017). Measurement invariance and validity of a brief questionnaire on reading motivation in elementary students: Reading motivation questionnaire. *Journal of Research in Reading*, 40(4), 439-461.

<https://doi.org/10.1111/1467-9817.12085>

Sudhindra, S., Ganesh, L. S., & Arshinder, K. (2017). Knowledge transfer: An information theory perspective. *Knowledge Management Research & Practice*, 15(3), 400-412. <https://doi.org/10.1057/s41275-017-0060-z>

Sung, S. Y., & Choi, J. N. (2018). Building knowledge stock and facilitating knowledge flow through human resource management practices toward firm innovation.

Human Resource Management, 57(6), 1429-1442.

<https://doi.org/10.1002/hrm.21915>

Suseno, Y., & Pinnington, A. H. (2018). Building social capital and human capital for internationalization: The role of network ties and knowledge resources. *Asia Pacific Journal of Management*, 35(4), 1081-1106.

<https://doi.org/10.1007/s10490-017-9541-0>

Tangaraja, G., Mohd Rasdi, R., Abu Samah, B., & Ismail, M. (2016). Knowledge

- sharing is knowledge transfer: A misconception in the literature. *Journal of Knowledge Management*, 20(4), 653-670. <https://doi.org/10.1108/JKM-11-2015-0427>
- Taskin, L., & Bridoux, F. (2010). Telework: A challenge to knowledge transfer in organizations. *The International Journal of Human Resource Management*, 21(13), 2503-2520. <https://doi.org/10.1080/09585192.2010.516600>
- Taylor, S., & Todd, P. (1995). Understanding Household Garbage Reduction Behavior: A Test of an Integrated Model. *Journal of Public Policy & Marketing*, 14(2), 192-204. JSTOR.
- Terhorst, A., Lusher, D., Bolton, D., Elsum, I., & Wang, P. (2018). Tacit Knowledge Sharing in Open Innovation Projects. *Project Management Journal*, 49(4), 5-19. <https://doi.org/10.1177/8756972818781628>
- Tho, N. (2017). Knowledge transfer from business schools to business organizations: The roles absorptive capacity, learning motivation, acquired knowledge and job autonomy. *Journal of Knowledge Management*, 00-00. <https://doi.org/10.1108/JKM-08-2016-0349>
- Tho, N. D., & Trang, N. T. M. (2015). Can knowledge be transferred from business schools to business organizations through in-service training students? SEM and fsQCA findings. *Journal of Business Research*, 68(6), 1332-1340. <https://doi.org/10.1016/j.jbusres.2014.12.003>
- Tian, A. W., Cordery, J., & Gamble, J. (2016). Staying and performing: How human resource management practices increase job embeddedness and performance. *Personnel Review*, 45(5), 947-968. <https://doi.org/10.1108/PR-09-2014-0194>
- Todorova, G., & Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *The Academy of Management Review*, 32(3), 774-786.

JSTOR. <https://doi.org/10.2307/20159334>

- Toro, M. A., Ponce, I. E., & Güemes, D. (2016). Methodology for the of building process integration of Business Model Canvas and Technological Roadmap. *Technological Forecasting and Social Change, 110*, 213-225. <https://doi.org/10.1016/j.techfore.2016.01.009>
- Tsangaris, E., Riff, K. W. Y. W., Vargas, F., Aguilera, M. P., Alarcón, M. M., Cazalla, A. A., Thabane, L., Thoma, A., & Klassen, A. F. (2017). Translation and cultural adaptation of the CLEFT-Q for use in Colombia, Chile, and Spain. *Health and Quality of Life Outcomes, 15*(1), 228. <https://doi.org/10.1186/s12955-017-0805-7>
- Tseng, F.-C., Huang, M.-H., & Chen, D.-Z. (2020). Factors of university–industry collaboration affecting university innovation performance. *The Journal of Technology Transfer, 45*(2), 560-577. <https://doi.org/10.1007/s10961-018-9656-6>
- Urbano, D., & Guerrero, M. (2013). Entrepreneurial Universities: Socioeconomic Impacts of Academic Entrepreneurship in a European Region. *Economic Development Quarterly, 27*(1), 40-55. <https://doi.org/10.1177/0891242412471973>
- Usakli, A., & Kucukergin, K. G. (2018). Using partial least squares structural equation modeling in hospitality and tourism: Do researchers follow practical guidelines? *International Journal of Contemporary Hospitality Management, 30*(11), 3462-3512. <https://doi.org/10.1108/IJCHM-11-2017-0753>
- Van Steenbergen, E. F., van der Ven, C., Peeters, M. C. W., & Taris, T. W. (2018). Transitioning Towards New Ways of Working: Do Job Demands, Job Resources, Burnout, and Engagement Change? *Psychological Reports, 121*(4), 736–766. <https://doi-org.ezproxybib.pucp.edu.pe/10.1177/0033294117740134>
- Vandergoot, S., Sarris, A., Kirby, N., & Ward, H. (2018). Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and

perceived impact of learning conflict resolution skills. *Journal of Interprofessional Care*, 32(2), 211-219.

<https://doi.org/10.1080/13561820.2017.1383975>

Vick, T. E., & Robertson, M. (2018). A systematic literature review of UK university–industry collaboration for knowledge transfer: A future research agenda. *Science and Public Policy*, 45(4), 579-590. <https://doi.org/10.1093/scipol/scx086>

Villani, E., Rasmussen, E., & Grimaldi, R. (2017). How intermediary organizations facilitate university–industry technology transfer: A proximity approach. *Technological Forecasting and Social Change*, 114, 86-102.

<https://doi.org/10.1016/j.techfore.2016.06.004>

Volmer, J., Spurk, D., & Niessen, C. (2012). Leader–member exchange (LMX), job autonomy, and creative work involvement. *The Leadership Quarterly*, 23(3), 456-465. <https://doi.org/10.1016/j.leaqua.2011.10.005>

Voydanoff, P. (2004). Implications of Work and Community Demands and Resources for Work-to-Family Conflict and Facilitation. *Journal of Occupational Health Psychology*, 9(4), 275-285. <https://doi.org/10.1037/1076-8998.9.4.275>

Vroom, V. H. (1964). *Work and motivation*. Wiley.

Walsh, B. M., & Magley, V. J. (2018). Workplace civility training: Understanding drivers of motivation to learn. *The International Journal of Human Resource Management*, 1-21. <https://doi.org/10.1080/09585192.2018.1441164>

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131. <https://doi.org/10.1016/j.hrmr.2009.10.001>

Wang, T., Tian, M., & Liu, Z. R. (2019). Unpacking the Influence of Major Cities on Corporate Environmental Performance in China: A Perspective of Spatial

- Knowledge Spillover. *Applied Ecology & Environmental Research*, 17(6), 14561–14576. https://doi-org.ezproxybib.pucp.edu.pe/10.15666/aeer/1706_1456114576
- Wang, Z., Wang, N., & Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management Decision*, 52(2), 230-258.
<https://doi.org/10.1108/MD-02-2013-0064>
- Weckowska, D. M. (2015). Learning in university technology transfer offices: Transactions-focused and relations-focused approaches to commercialization of academic research. *Technovation*, 41-42, 62-74.
<https://doi.org/10.1016/j.technovation.2014.11.003>
- Wilson, K. L., Lizzio, A., & Ramsden, P. (1997). The development, validation and application of the Course Experience Questionnaire. *Studies in Higher Education*, 22(1), 33-53. <https://doi.org/10.1080/03075079712331381121>
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety. *Educational and Psychological Measurement*, 73(6), 913-934.
<https://doi.org/10.1177/0013164413495237>
- Won, S., Anderman, E. M., & Zimmerman, R. S. (2020). Longitudinal relations of classroom goal structures to students' motivation and learning outcomes in health education. *Journal of Educational Psychology*, 112(5), 1003-1019.
<https://doi.org/10.1037/edu0000399>
- Xia, T., & Roper, S. (2008). From capability to connectivity—Absorptive capacity and exploratory alliances in biopharmaceutical firms: A US–Europe comparison. *Technovation*, 28(11), 776-785.
<https://doi.org/10.1016/j.technovation.2008.03.007>
- Yao-Ping Peng, M., Zhaohua Zhang, & Shi-Huei Ho, S. (2019). A Study on the

Relationship among Knowledge Acquisition Sources at the Teacher- and College-Level, Student Absorptive Capacity and Learning Outcomes: Using Student Prior Knowledge as a Moderator. *Educational Sciences: Theory & Practice*, 19(2), 22–39. <https://doi-org.ezproxybib.pucp.edu.pe/10.12738/estp.2019.2.002>

- Yilmaz, R. (2016). Knowledge sharing behaviors in e-learning community: Exploring the role of academic self-efficacy and sense of community. *Computers in Human Behavior*, 63, 373-382. <https://doi.org/10.1016/j.chb.2016.05.055>
- Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic Management Journal*, 22(6-7), 587-613. <https://doi.org/10.1002/smj.183>
- Young, M. R. (2016). Knowledge Acquisition and Readiness Assurance Testing: The Connected Notes Intervention. *Journal of Marketing Education*, 38(3), 145-156. <https://doi.org/10.1177/0273475316639630>
- Yun, J. J., Won, D., & Park, K. (2016). Dynamics from open innovation to evolutionary change. *Journal of Open Innovation: Technology, Market, and Complexity*, 2(1), 7. <https://doi.org/10.1186/s40852-016-0033-0>
- Yun, Y.-J., & Lee, K.-J. (2017). Social skills as a moderator between R&D personnel's knowledge sharing and job performance. *Journal of Managerial Psychology*, 32(5), 387-400. <https://doi.org/10.1108/JMP-05-2016-0156>
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of management review*, 27(2), 185–203.
- Zeyer, A. (2018). Gender, complexity, and science for all: Systemizing and its impact on motivation to learn science for different science subjects: GENDER, COMPLEXITY, AND SCIENCE FOR ALL. *Journal of Research in Science Teaching*, 55(2), 147-171. <https://doi.org/10.1002/tea.21413>

- Zhang, D., Zhang, F., Lin, M., & Du, H. S. (2017). Knowledge sharing among innovative customers in a virtual innovation community: The roles of psychological capital, material reward and reciprocal relationship. *Online Information Review*, 41(5), 691-709. <https://doi.org/10.1108/OIR-08-2016-0226>
- Zhang, F., & Gallagher, K. S. (2016). Innovation and technology transfer through global value chains: Evidence from China's PV industry. *Energy Policy*, 94, 191-203. <https://doi.org/10.1016/j.enpol.2016.04.014>
- Zheng, X., Le, Y., Chan, A. P. C., Hu, Y., & Li, Y. (2016). Review of the application of social network analysis (SNA) in construction project management research. *International Journal of Project Management*, 34(7), 1214-1225. <https://doi.org/10.1016/j.ijproman.2016.06.005>
- Zunda, S., Zeps, A., & Strode, S. (2020). Creation of a Sustainable Model for Building and Maintaining a Relationship between Universities and Entrepreneurs. *Business, Management & Education / Verslas, Vadyba Ir Studijos*, 18(1), 33–55. <https://doi-org.ezproxybib.pucp.edu.pe/10.3846/bme.2020.11287>

Appendix A. Consistency Matrix

General Problem	General Objective	Theoretical Framework	General Hypothesis	Variables	Methodology
<p>What is the relationship between absorptive capacity, learning motivation, knowledge acquisition, labor autonomy and social skills in the transfer of knowledge of in-service training students?</p>	<p>To identify the relationship between absorptive capacity, learning motivation, knowledge acquisition, labor autonomy and social skills in the transfer of knowledge of in-service training students</p>	<p>The AMO framework was initially proposed by Bailey (1993), who explains that three components are necessary to achieve an employee's discretionary effort: employees must have skills, adequate motivation, and employers must provide the opportunity to participate. Based on this framework and high performance work systems (HPWS) concepts, the model was developed by Appelbaum et al. According to the AMO model, the three elements needed to improve employee performance are: skills (A), motivation (M), and opportunity to participate (O).</p>	<p>There is a relationship between absorptive capacity, learning motivation, knowledge acquisition, labor autonomy and social skills in the transfer of knowledge of in-service training students</p>	<p>Independent Variables: Absorptive Capacity Learning Motivation Knowledge Acquisition Labor autonomy Social Skills Dependent variable: Knowledge Transfer</p>	<p>Type of Research: Quantitative Scope of research: Correlational Research Design: Not experimental Population: Students of bachelor or master programs in business and administration who are working in the cities of Guayaquil, Quito Cuenca and Loja of Ecuador Sampling technique: stratified random sampling for each university Sample: 540 students Technique: Survey Instruments: Questionnaire</p>
<p>Specific Problems</p>	<p>Determine the effect of absorptive capacity on the knowledge acquisition of in-service training students in universities</p>	<p>Based on the AMO framework and the study by Chang (2012), Pletch and Zonatto (2018), Tho (2017) and Yun and Lee (2017), the following variables are evaluated: Absorptive capacity: Multidimensional approach (Cohen and Levinthal (1990); Heeley (1997); Lane and Lubatkin (1998); Lane et al. (2001); Jansen et al. (2005); Todorova and Durisin (2007); Xia and Roper (2008); Zahra and George (2002). One-dimensional approach (Chang et al., (2012), Garcia et al. (2007). Learning Motivation: Cole et al. (2004); Feng and Tuan (2005); Noe and Schmitt (1986).</p>	<p>Absorptive capacity has a positive effect on knowledge acquisition</p>	<p>Independent variable: Absorptive Capacity Dependent variable: Knowledge Acquisition</p>	<p>Independent variable: Motivation in learning Dependent variable: Knowledge Acquisition</p>
<p>What is the effect of learning motivation on the knowledge acquisition of university in-service training students?</p>	<p>To determine the effect of learning motivation on the knowledge acquisition of university in-service training students</p>	<p>Knowledge Acquisition: Darroch (2003); Wilson et al. (1997); Yli Renko et al. (2001) Workplace Autonomy: Hackman and Oldham (1980)</p>	<p>Motivation in learning has a positive effect on knowledge acquisition</p>	<p>Independent variable: Motivation in learning Dependent variable: Knowledge Acquisition</p>	<p>Independent variable: Knowledge Acquisition Dependent variable: Knowledge Transfer</p>
<p>To what extent does the knowledge acquisition of university in-service training students influence the transfer of knowledge to companies?</p>	<p>To determine how the knowledge acquisition of university in-service training students influences the transfer of knowledge to companies</p>	<p>Knowledge Acquisition: Darroch (2003); Wilson et al. (1997); Yli Renko et al. (2001) Workplace Autonomy: Hackman and Oldham (1980)</p>	<p>Knowledge acquisition has a positive effect on knowledge transfer</p>	<p>Independent variable: Knowledge Acquisition Dependent variable: Knowledge Transfer</p>	<p>Independent variable: Knowledge Acquisition Dependent variable: Knowledge Transfer</p>

How do students' social skills influence the transfer of knowledge to companies?	To determine how students' social skills influence the transfer of knowledge to companies	Social Skills: Ferris et al. (2001); Lachar and Kline (1994); Riggio (1986); Riggio et al. (1989); Stephens (1978) Knowledge Transfer: Argote and Ingram (2000); Ko et al. (2005); Taylor and Todd (1995)	Social skills have a positive effect on knowledge transfer	Independent variable: Knowledge Skills Dependent variable: Knowledge Transfer
How does the level of labor autonomy enjoyed by university students influence the transfer of knowledge to companies?	To determine how the level of labor autonomy enjoyed by university students influences the transfer of knowledge to companies		Labor autonomy has a positive effect on knowledge transfer	Independent variable: Labor autonomy Dependent variable: Knowledge Transfer
What is the influence of social skills on the relationship between knowledge acquisition and transfer of in-service training students?	To determine the influence of social skills on the relationship between knowledge acquisition and transfer of in-service training students		Social skills positively moderate the relationship between knowledge acquisition and knowledge transfer	Independent variable: Knowledge Acquisition Moderator Variable: Knowledge Skills Dependent variable: Knowledge Transfer
What is the influence of labor autonomy on the relationship between knowledge acquisition and transfer of in-service training students?	To determine the influence of labor autonomy on the relationship between knowledge acquisition and transfer of in-service training students		Labor autonomy positively moderates the relationship between knowledge acquisition and knowledge transfer	Independent variable: Knowledge Acquisition Variable Moderator: Labor Autonomy Dependent variable: Knowledge Transfer

Appendix B. Operationalization of the model constructions

Dimensión	Autor	Ítems
Knowledge transfer	Ko, Kirsch and King (2005)	I have acquired a lot of knowledge and skills applicable to my current job
		I have acquired enough knowledge and skills necessary for my current job
		I have acquired many knowledge and skills that help me improve my job performance
Labor autonomy	Hackman and Oldham (1980)	I have effectively applied my knowledge and skills acquired from business school to my current job
		I have significant autonomy to determine how I do my job
		I can decide on my own how to do my job
Social skills	Ferris, Witt and Hochwarter (2001)	I have a considerable opportunity for independence and freedom in the way I do my job.
		I find it easy to put myself in the position of others
		I can usually accurately recognize the traits of others by looking at their behavior
		I can feel comfortable with all kinds of people
		I can easily adapt to having many people around me
		I can adjust my behavior and become the type of person dictated by any situation
		I can communicate with others easily and effectively