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# Knowledge Management in Higher Education: Effectiveness, Success factors, and Organisational Performance

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# DAKOTA STATE UNIVERSITY

# KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION: EFFECTIVENESS, SUCCESS FACTORS, AND ORGANISATIONAL PERFORMANCE

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## DISSERTATION APPROVAL FORM

This dissertation is approved as a credible and independent investigation by a candidate for the Doctor of Philosophy degree and is acceptable for meeting the dissertation requirements for this degree. Acceptance of this dissertation does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department or university.

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# ABSTRACT

In today business environment, Higher education institutions are facing a common challenge in the wake of rapid changes due to substantial drops in public funding for public colleges and universities, a larger number of calls for transparency, rapid expansion of the global business. To survive, organizations of higher education must improve their performance continually. Researchers reported that knowledge and effectively managing knowledge can help HEIs improve their performance by solving many of these problems and acquire and sustain competitive advantage. It is beneficial to explore the factors that impact the effective implementation of knowledge management within higher education institutions. These factors are organizational culture, and leadership styles. Additionally, it is essential to investigate the leadership style that best supports effective implementation of knowledge management.

This study sought to examine the relationship between organizational culture (mission, adaptability, involvement, consistency), leadership styles (transformational and transactional), knowledge management effectiveness, and organizational performance. The study also analyzed the mediating role of organizational culture on the relationship between leadership styles and knowledge management effectiveness.

Based on existing literature, eight hypotheses and a conceptual model were developed regarding the relationships of the five constructs: organizational culture, transformational and transformational leadership, knowledge management effectiveness and organizational performance. All constructs are measured by multi-items scales. For this study, organizational performance and knowledge management effectiveness were taken as dependents variables. Leadership styles of transformational and transactional and organizational culture were taken as independent variables. Organizational culture (mission, consistency, adaptability, and involvement) served as mediator variable.

A questionnaire was used to collect data; this questionnaire was administered to 251 faculty and administrative leaders employed at 20 universities and colleges across the United States of America. Only 136 were entirely completed and deemed useful for the study. Structural equation modeling and Confirmatory Factor Analysis within SEM were adopted for data analysis. Results were presented using frequency distribution tables and graphs.

Key findings suggested that organizational culture and transformational leadership impacted knowledge management effectiveness. But transactional leadership did not.

Consequently, knowledge management effectiveness impacted organizational performance. While organizational culture mediated the effects of transformational leadership on knowledge management effectiveness, no mediating effect of organizational culture was found on the effect of transactional leadership on knowledge management effectiveness. Organizational culture has the largest positive impact on knowledge management effectiveness.

These results may inform the successful implementation of KM practices, which in term improve the performance of higher educational institutions across the United States of America.

## DECLARATION

I hereby certify that this dissertation constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

I declare that the dissertation describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

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Armel B Djangone

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# CHAPTER 1

# INTRODUCTION

## Background of the Problem

This study answers the call by (Iqbal et al., 2019) who recommended that future studies give serious attention to the relationship between knowledge management and organizational performance. They also requested future studies to consider larger random sample sizes drawn from public and private Higher Education Institutions (HEIs). And they explained that such a study with different cultures and structures would add value to this field of study. Therefore, this dissertation answers the call of Iqbal et al. (2019) by focusing on the relationships between Knowledge Management and Organizational Performance, in addition to the relationship between Organizational Leadership and Organizational Culture on Knowledge Management with a random sample of HEIs in the United States of America.

Across the world, businesses are now facing a common challenge in the wake of rapid changes in the corporate ecosystem (Obeidat et al., 2016). To survive in this economic environment, organizations must improve their performance continually. Chien (2015) asserted that effective knowledge management would enhance organizational performance. Additionally, organizations increasingly view Knowledge Management (KM) as their most valuable strategic asset, and they are striving to find new ways to increase business performance by developing effective KM processes (Alrubaiee et al., 2015).

In developing such an effective KM practice, managing their knowledge by expanding, disseminating, and exploiting it is essential. Additionally, organizations must understand knowledge management (KM) success factors to implement KM practices effectively. This gives organizations a competitive advantage, which leads to organizational success. Many studies have investigated KM implementation's critical success factors (CSF) in business organizations (Al-Dalaien et al., 2021). Critical success factors (CSF) are also known as KM enablers. They refer to all those factors, such as organizational leadership (OL) and organizational culture (OC) behaviours, that facilitate knowledge management (KM) processes or activities (Areed et al., 2021). Organizational leadership (OL) behaviour is an essential and fundamental aspect of a business context (Millar et al., 2015). It is argued that successes and failures depend on a leader's

ability to grow and exploit their team's potential and, thus, overall organizational capability (Millar et al., 2015). As for organizational culture (OC), theorists of the human relations school perceived it as the informal, nonmaterial, interpersonal, and moral bases of cooperation and commitment that are more important than the formal, material, and instrumental controls stressed by the scientific management theorists (Baker et al., 2002). Organizational culture (OC) is the normative glue for coordination and stability.

Since their inception, higher education institutions (HEIs) have been considered by researchers as knowledge-driven organizations. They are primarily involved in learning and knowledge creation, developing, preserving, and dissemination through publications. Therefore, they have their place in society by generating new ideas (N. Ahmad et al., 2015; Veer Ramjeawon & Rowley, 2017). Also, higher education institutions (HEIs) can apply KM to support their missions by expanding knowledge-based practices in line with their institutional successes, particularly the increase in their performance. Fullwood and Rowley (2017) also argue that if knowledge management techniques and technologies in higher education are done effectively, this can lead to better decision-making capabilities.

Despite the amplified importance of KM in organizations in general and specifically in higher education institutions, KM strategies adopted by universities need to be revised or consistent (Fullwood & Rowley, 2017). Many studies that explored KM focused largely on organizational KM activities and did not consider their effectiveness. There need to be more studies exploring the interaction of knowledge management, critical success factors of KM, and organizational performance from the perspective of HEIs. Only a few studies, such as Ahmady et al. (2016), Donate and Canales (2012), Fullwood and Rowley (2017), and Veer Ramjeawon and Rowley (2017) explored the interaction between KM, culture, leadership and the effect of KM on OP in the context of higher education institutions. This study expands the knowledge body by assessing the critical success factors of knowledge management, including organizational leadership and culture, and examines the relationship between knowledge management and organizational performance.

**Problem Statement**

The shift from natural resources to the knowledge era in the corporate setting has positioned knowledge as an essential asset to gain a sustainable competitive advantage (Si Xue, 2017). Therefore, establishing knowledge management practices is vital for organizations to

improve performance and remain competitive. Rapid shifts in the economy and the constantly increasing competition in today's business environment forced organizations to continually search for strategies and techniques to adapt to change and to improve their performance. Higher Education Institutions (HEIs), like several other corporate organizations, have not been spared the burden exercised by introducing the knowledge economy (Kabilwa, 2018). They are suffering the same operational pressures that have pushed the use of KM in the corporate sector.

Decreased in local, state and federal's funding for public schools (Wiley University Services, 2021), the major transformations in the technological environment (Fernández-López et al., 2018), the enrollment drops, the rising operational costs, the substantial social shifts in higher education (Quarchioni et al., 2020), and the rapid development of the global marketplace are just a few of the issues these organizations are persistently facing when deciding how to acquire, manage, and transfer knowledge. Therefore, HEIs should evaluate their knowledge management practices and, most importantly, know how to manage their knowledge by effectively expanding, disseminating, and exploiting it.

Organizations need to understand knowledge management success factors that impact the effectiveness of KM. In understanding such factors, there is a need for an organizational culture to support the knowledge management process so that it is available to obtain and transfer the required knowledge with ease. In addition to the support of organizational culture for knowledge management, understanding ways in which leaders can influence the successful implementation of knowledge management processes in HEIs is becoming increasingly important (Ather & Awan, 2021; Gil et al., 2021; Ugwu & Okore, 2020).

There is a need to research the corresponding gap in the literature surrounding knowledge management effectiveness, organizational culture, and leadership behaviour to support the operations of HEIs. Higher education institutions will benefit from seeing the relationship between knowledge management effectiveness processes, specific leadership styles and different trait of organizational culture and their impacts on improving HEIs performance.

**Research Objective**

This study investigates the relationship between transformational leadership, transactional leadership, organizational culture (mission, adaptability, involvement, and consistency), knowledge management (KM) effectiveness and HEIs performance. More specifically, the study examines the mediating effect of organizational culture on the relationship between leadership

styles and KM effectiveness in the context of HEIs. The study explored the following research questions:

1. What is the relationship between transactional leadership, transformational leadership, and knowledge management effectiveness in higher education?
2. How does knowledge management effectiveness affect organizational performance?
3. Does organizational culture mediate the relationship between knowledge management effectiveness and organizational leadership styles?

**Research Significance**

This study may increase an understanding of knowledge management (KM) and KM factors by recognizing improved HEIs' performance as a result of effective implementation of knowledge management practices. Understanding the KM contribution may help HEIs leaders and practitioners better plan and implement KM practices for improved educational organization performance.

This study also expanded the current scope of knowledge management, organizational leadership styles, organizational culture, and organizational performance theories. The study provided empirical context to explain the relationship between the five constructs: organizational culture, transformational and transformational leadership, knowledge management effectiveness and organizational performance.

**Chapter Summary**

This study explores the relationship between knowledge management and organizational performance, focusing on the impact of organizational leadership and culture on knowledge management. Higher education institutions (HEIs) are known for their knowledge-driven nature, but many studies on KM strategies have focused on organizational activities. HEIs must evaluate their practices and expand, disseminate, and exploit knowledge to improve performance and remain competitive. Understanding knowledge management success factors and the mediating effect of organizational culture on leadership styles and KM effectiveness is crucial for HEIs to improve their performance. The study's significance lies in recognizing the impact of knowledge management practices on HEIs' performance and helping leaders and practitioners plan and implement KM practices for improved educational organization performance.

# CHAPTER 2

# LITERATURE REVIEW

This study examines the relationship between organizational culture, leadership styles, and organizational performance. Knowledge of the impact of organizational culture and leadership styles on organizational performance is essential to improve an organization. This section aimed to understand better the relationship between critical success factors such as organizational leadership styles and organizational culture, the effective implementation of knowledge management, and organizational performance in higher education institutions by reviewing relevant theories. It presents opportunities and challenges for higher education institutions regarding implementing and using knowledge management practices. An overview of organizational performance is also presented. The section concluded by critically reviewing the current literature to identify the research gaps and adopt a research method.

## Knowledge and Knowledge Management

To understand knowledge management (KM), one must start by clearly defining the concept of "knowledge". Understanding what constitutes knowledge, why it is so important, and what falls under the category of information or data. In everyday language, we use knowledge all the time. Sometimes we mean know-how, while other times, we talk about wisdom. In several instances, we even use knowledge to refer to information. Part of the complexity of defining knowledge evolves from its association with two other concepts, data and information. There are important differences between knowledge, data, and information.

From the perspective of (Uriarte, 2008), data is a number or word, or letter deprived of any context; for example, numbers like 500 or 100, with no context, are plain data. Without quotation to any space or time, these numbers or data are meaningless things in space and time. The main phrase here is "out of context." And because it is out of context, it has no significant relation to anything else. Uriarte (2008) further explained that information is more than just a simple data collection where there is no relation between the pieces of data. Instead, information is the understanding of the relations between the pieces of data or between the collection of data. In other words, context is essential in making information, that is, the relation between the pieces of data. When information is further treated, it can convert to knowledge. Information is further processed

when one discovers a pattern between data and information. When one can realize and understand the patterns and their implications, then this collection of data and information becomes knowledge. But unlike mere context-dependent information, knowledge tends to create its context. In other words, the patterns representing knowledge tend to be self-contextualizing.

Early researchers, including Davenport and Prusak (1998), provided a widely accepted hierarchical construction of the relationships between data, information, and knowledge. They argued that knowledge is derived from information, information derives from data, and there is a need for human intervention to convert information into knowledge. In other words, human beings successfully apply their capability, experience, skills, culture, and values through some activity or transformation to change the information and convert it into knowledge. This, thereby, becomes a major part of organizational knowledge. The 'transformation' of information to knowledge happens across the so-called four Cs: consequences (what outcomes does the information have for actions and decisions?), comparison (how is this information compared with others?), connections (relation of the bits with others) and conversations (what different individuals consider about the provided information) (Davenport & Prusak, 1998).

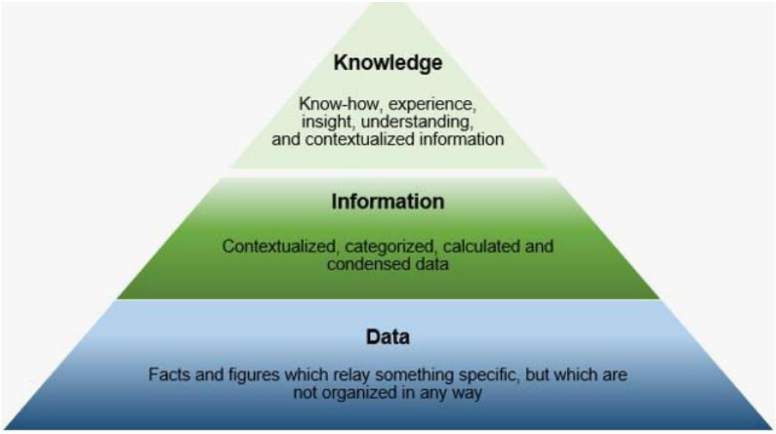


Figure 1 *From Data to Information to Knowledge* (Hajric, 2018)

More recent researchers, such as Harjric (2018), defined data as facts and figures that relay something specific but are not organized in any way and provide no further information regarding patterns, context, etc. As shown in Figure 1 above, Harjric (2018) contends that for data to become information, it must be contextualized, categorized, calculated, and condensed (Davenport & Prusak, 1998). Knowledge for this part is closely linked to doing and implies know-how and understanding. The knowledge possessed by each individual is a product of his experience and

encompasses the norms by which he evaluates new inputs from his surroundings (Davenport & Prusak, 1998).

**Types of Knowledge**

To converse knowledge management theory, it is essential to understand the different types of knowledge and why it is vital. Knowledge is the relevant information that could be developed and transferred to be readily available to the right persons at the right time and place to uphold the effectiveness of future/strategic decisions. It is widely recognized as an essential and reliable component of sustainable competitive advantage. Alavi and Leidner (1999), cited in Renukappa (2020), defined knowledge as enhancing an individual's capabilities for taking practical actions. KM scholars often categorize knowledge as either tacit knowledge or explicit knowledge. Tacit knowledge can be defined as knowledge that resides in a person's mind. Dhamdhere (2015) explained that tacit knowledge covers insights, perceptions, expertise views, techniques, and skills unique to the person and cannot be communicated. It is embedded within the heads/minds of the institution, organization or research unit researchers. Explicit knowledge is organized and well-structured information that helps take action and express informal language; hence, it is easily communicated Dhamdhere (2015). Examples include books, databases, procedure manuals, course syllabi, and reports from an experiment.

**Knowledge Management**

Knowledge management is a fast-growing academic discipline (Serenko & Bontis, 2017). However, varying definitions have stressed different thoughts regarding the meaning of knowledge management. Some researchers describe knowledge management as a set of procedures to achieve organizational goals. For instance, Davenport and Prusak (1998) defined knowledge management as a process of collection, distribution, and efficient use of knowledge resources. Prelipcean and Bejinaru (2016) maintain that knowledge management is a firm's organizational strategy to ensure its functioning. Bratianu and Bolisani (2015) termed knowledge management as a process of knowledge creation, validation, presentation, distribution, and application. Bell DeTienne et al. (2004) define knowledge management as a set of procedures, infrastructures, and technical and managerial tools designed to create, share, and leverage information and knowledge within and around organizations.

Other studies perceived knowledge management (KM) as the careful leveraging of information, data, and knowledge to help organizations become more competitive and improve

organizational performance (N. Ahmad et al., 2015; Bratianu & Bolisani, 2015; Colnar et al., 2019; Mahdi et al., 2019; Obeidat et al., 2016). This has been endorsed by Zaim (2015), who emphasized that knowledge management is the only favourable medium that lets organizations gain sustainable competitive advantages in the long term. Accordingly, organizations increasingly view KM as their most valuable strategic asset, striving to find new ways to increase business performance by developing effective KM processes (Alrubaiee et al., 2015).

Knowledge management also refers to an approach to formalize knowledge, expertise, and experience that generates new competencies leading towards enhanced organizational performance. It describes the highly significant aspects of an organization's procedures using technologies well-suited to connecting different knowledge assets. Ahmad et al. (2017) Contends that knowledge management processes significantly impact/improve organizational processes like innovation, collaborative decision-making, and individual and collective learning.

Despite their differences, KM's various definitions, as described above, agree that it includes explicit and implicit knowledge. Both are essential features of the effective implementation of knowledge management practice. Shahzad et al. (2016) argue that knowledge in an organization can only guarantee organizational success and sustained competitive advantage if managed effectively through a proper system. This has led researchers to investigate ways to manage knowledge. This study is being conducted to investigate factors that impact the effective implementation of knowledge management in the educational sector.

**Knowledge Management processes**

A lot of scholarly work has been conducted in the past on KM processes. Knowledge management processes are considered organized activities and give the researchers immense importance in organizational capabilities (Alaarj et al., 2017; Chang & Chuang, 2011a; Darroch, 2005) describe KM process capability as the extent to which an organization creates, acquires, shares, and utilizes knowledge. Darroch (2005) suggested that knowledge creation and acquisition, knowledge dissemination, and responsiveness to knowledge are the main components of knowledge management practice. Three standard processes can be extracted from the previous models: knowledge generation (or acquisition for this study), knowledge sharing, and knowledge utilization.

It has been argued that KM's effectiveness depends on how new knowledge is generated and how existing knowledge is transferred throughout the organization. Previous studies have

expressed considerable interest in knowledge-sharing practices (Mahdi et al., 2019). While researchers have widely studied the process of knowledge sharing from the university perspective, empirical evidence about knowledge acquisition and utilization still needs to be more specific in the educational context (Dei & Walt, 2020). Thus, the current study focuses on knowledge generation (in this study, we will use the term acquisition), knowledge utilization, and knowledge sharing. Each one of these is discussed in more detail below.

*Knowledge Acquisition*

Knowledge acquisition refers to generating, creating, and developing new ideas, knowledge, and skills that increase the existing stock of organizational knowledge (Kater, 2017). Organizations acquire knowledge in quite a few ways. Imitation, benchmarking, replication, substitution, purchasing, outsourcing, and discovering are a few knowledge acquisitions (Dzenopoljac et al., 2018). According to Chiu and Chen (2016), knowledge acquisition results from employees' participation and interaction with people, resources, and technology. It also encompasses creating knowledge or innovation using existing knowledge in an organization.

*Knowledge Sharing*

Knowledge sharing refers to the exchange or diffusion of learning, knowledge, skills, and experience among the organization's people or departments (Gharakhani & Mousakhani, 2012). Various practices encourage knowledge sharing within the organization, such as incentives, rewards, and community of the procedure. Technologies such as the intranet, internet, and web 2.0 encourage and promote employee interaction, leading to sharing and exchanging knowledge. Besides encouraging interaction, these technologies capture and store the exchanged ideas. According to (Armbrecht et al., 2001), a company's culture and structure will be the critical factors enabling knowledge flow, affecting knowledge sharing. Knowledge-sharing results will improve organizational performance. Knowledge sharing is essential in universities as it promotes academic research collaboration (Tan & Noor, 2013).

*Knowledge Utilization*

Knowledge utilization, also called knowledge application, refers to the process oriented toward the actual use of knowledge (Gold et al., 2015). It is characterized by knowledge storage, retrieval, application, and donation (Gold et al., 2015) and defined as an activity to apply and exploit knowledge to the operations of business, products, and services to achieve superior organizational performance.

**Knowledge Management Effectiveness**

An effectiveness study measures the realization of goals. In other words, effectiveness shows the extent of efforts to achieve the considered results. It was stated that effectiveness means doing things right. Knowledge-management effectiveness in organizations comprehends a range of perspectives in the literature. For instance, Sabherwal and Becerra-Fernandez (2003) measured the effectiveness of four theoretical processes of knowledge creation: combination, internalization, socialization, and externalization. These four processes sprung from Nonaka and Takeuchi (1995) research about the knowledge creation process based on knowledge's nature, albeit explicit or implicit.

KM effectiveness can generally be analyzed from a process perspective (Gold et al., 2015; Zheng, 2005). In KM, processes are considered systematic activities and given immense importance by researchers in organizational capabilities (Alaarj et al., 2017; Chang & Chuang, 2011a; Darroch, 2005). The following processes are identified as critical processes of KM: create (acquire), share, and utilize knowledge (Chang & Chuang, 2011a), and knowledge creation, capturing, organization, access, and use. The three standard processes are distilled from these models: knowledge generation (acquisition), knowledge sharing, and knowledge utilization. Operationally, this study will define KM effectiveness as knowledge generation, knowledge sharing, and knowledge utilization effectiveness.

**Critical Success Factors to Knowledge Management**

It is widely accepted that KM is a crucial factor for all organizations. However, different critical success factors (CSF) influence KM's outcome and the measurement of its effectiveness. An extensive research study on CSFs for KM has been conducted in social settings, including higher education. These studies have provided strategic directions for public universities' management to deal more effectively with KM practices and key strategic enablers. Additionally, the studies have identified several CSFs in KM. These CSFs include leadership, culture, rules, structure, responsibilities, information technology infrastructure, measurement, employee training, employee involvement, teamwork, employee empowerment, knowledge structure, and organizational strategies (Alshahrani, 2018; Razmerita et al., 2016; Akhavan et al., 2014; Devi Ramachandran et al., 2013; Hameed & Badii, 2012). According to Dhamdhere (2015), effective KM requires attention given to human and cultural aspects of business, particularly employees'

experiences and tacit knowledge. Therefore, this study concerns two CSFs: organizational leadership and cultural behaviours. Each of these is discussed in more detail below.

**Organizational Leadership (OL)**

Several people say that good leaders are made, not born. Leadership behaviour is an essential aspect of business (Millar et al., 2015). It enormously impacts KM practices within an organization (Abebe, 2016; Fischer et al., 2015; Kumar et al., 2012). The role of leadership is to communicate fundamental knowledge among employees by initiating communication, encouraging flexibility, and displaying the transformational characteristics that contribute to success through effective decision-making and commitment (Noruzy et al., 2013). Leadership ensures a platform in the organization that creates common ground between diverse employees to interact with each other in ways that lead to socialization and, eventually, sharing knowledge and information. Leaders act as role models when followers see leaders actively help create new knowledge and share it with others. Therefore, leadership plays a critical role in an organization; studies support that successes and failures depend on the integrity of the leader, team diversity management, organization of the staff's knowledge, and the leader's ability to grow and exploit their team's potential and thus overall organizational capability (Millar et al., 2015). Leadership is the process by which the leader persuades the followers towards a particular goal (Avolio & Bass, 1995). It contributes significantly to the success or failure of an organization and generally exists within people and organizations.

*Leadership Theory*

Almost as long as there has been research on leadership, there has been recognition that different types of leaders are best adapted to different situations. Bass and Bass (2008) defined leadership style as the behaviour pattern a leader exhibits when interacting with those they influence. We investigate how transformational and transactional leadership motivates employees to commit to an organizational ideation program so that they subsequently generate ideas that benefit the organization. To resolve the mixed and contradictory findings of earlier studies about these leadership styles, we propose that more attention needs to be devoted to the leader's personal beliefs. Specifically, we study the degree to which a leader identifies with an organization and how this possibly unlocks the effects of transformational or transactional leadership. Using multilevel data collected in a large multinational company, our findings reveal that both transformational and transactional leadership is effective in motivating followers to commit to the goals of an ideation

program. Increased commitment, in turn, is associated with more ideas that followers generate. In contrast to the effect of transactional leadership, however, the effect of transformational leadership is contingent on how strongly leaders identify with the organization; leadership style is determined by the leader's identification with the organization (Deichmann & Stam, 2015). Different types of leaders were viewed as successful in several situations. Heilbrum (1994) divides leadership theories into three concentrated areas for discussion. The first area is to identify leadership as leader traits. The second area is to define leadership as leader behaviours. Such leadership theories focus on the characteristics and behaviours of a successful leader. The third area is contingency or situational leadership, which focuses on the interaction with personnel and concerns eventual and material matters between leaders and subordinates.

Contingency leadership theory and transactional and transformational leadership theory tend to consider the role of followers and the contextual nature of leadership. Complex leadership is based on the unpredictable and uncontrollable nature of integrated systems. Leadership literature shows an evolving series from trait theory to complex leadership. It is important to comprehend early leadership theories better to understand modern theories and their significance to business practices. This study reviews five main leadership theories, including trait theories; behavioural theories; contingency and situational theories; transactional and transformational leadership, and complex theories of leadership, which is one of the latest theories.

*Trait Theories of Leadership*

One of the first theories concerning leadership emerged from the study of leadership traits. In the 1920s and 1930s, leadership research focused on identifying traits. This approach arose from the “Great Man” theory to identify the key characteristics of successful leaders. Trait theory identifies the personal qualities that distinguish leaders from non-leaders. This theory posited that leaders were born, not made and that the traits necessary to be an effective leader were inherited. Early research on leadership was based on the psychological focus of the day, which was on people having inherited characteristics or
traits.

However, many research studies have not offered convincing evidence that a specific trait collection is essential for leader success (Yukl, 1989). Thus the conception of leadership traits has been regenerated. The traits owned by leaders not only can be learned but also can be developed.

In addition, possessing leadership traits inherently is not the only way to make a person a successful leader; leaders must also take necessary actions. Studies moved to examine the behaviours employed by leaders which made them effective in various organizations.

*Behavioral Theories of Leadership*

The results of the trait studies were indefinite. Traits, among other things, took a lot of work to measure. Behavioural theories of leadership do not seek inherent traits or capabilities. Rather, they look at what leaders do and begin attempting to define successful leaders' activities. This was the focus of much research from the 1940s through the 1960s. Behavioural theorists identified determinants of leadership so that people could be trained to be leaders. This research concentrated mainly on leadership style or behaviours. The behavioural leadership theory is critically different from the earlier trait theory of leadership that assumed leaders were born and not made.

Three well-known behavioural leadership projects include Ohio State University (OSU) Studies, University of Michigan Studies, and the Managerial Grid. OSU studies emphasized two independent dimensions of leadership behaviour: individualized consideration and structure initiation (Bass, 1990). Initiation of structure is how a leader starts and controls activity within the group, organizes the group and directs how the work is to be accomplished. Individualized consideration defines how leaders treat group members as individuals with separate considerations while maintaining a fair and equitable relationship with the entire team. Michigan Studies classified leader behaviours as two opposing styles that are job-centered and employee-centered. The Managerial Grid focuses on two dimensions of leader behaviour: a concern for people and a concern for production. Leadership studies in the 1960s began to see the importance of going beyond measuring leaders' behaviour and examining the setting in which they exercised their leadership behaviours. A collection of researchers shifted to examine the approach to understanding how leadership was used within an organization in specific situations.

*Contingency Theories of Leadership*

Successful leaders must be able to identify clues in an environment and adapt their leadership behaviour to meet the needs of their followers and the specific situation. Indeed, most researchers today conclude that leadership style is only right for some managers. Instead, contingency theories were developed to illustrate that the style used is contingent on factors such as the situation, the people, the task, the organization, and other environmental variables. Even

with good diagnostic skills, leaders may only be effective if they can adapt their leadership style to meet the demands of different situations. Contingency theory proposes that certain leadership styles will be effective in different situations.

There are two familiar studies in contingency theories of leadership: Fiedler (1967) Contingency Model and the Path-Goal Leadership Theory developed by Robert House (Robbins, 1996). Fiedler's Contingency Model focuses realized there are only so many best ways for managers to lead. Thus, leadership effectiveness depends on interacting the leader's qualities with certain situational characteristics (Fiedler, 1967). Fiedler's contingency theory combines positional power, the task, and the relationship between the leader and the follower(s) as leader effectiveness determinants. In contingency theory, the leader is either task-oriented or relationship-oriented and matched with situations conducive to that style (Claudet, 2016).

Another contingency leadership model is the path-goal approach. A leader's role is to push performance and reinforce change by setting goals, identifying and clearing the path to those goals and rewarding performance. Variables in the situation determine leader behaviour. Path-goal is an exchange theory wherein followers recognize productivity as a path to achieving personal goals (Claudet, 2016).

*Situational Theories of Leadership*

Situational leadership theories have been studied for many years. Hersey and Blanchard developed the Situational Leadership Model, which focuses on behaviours rather than traits (Bass, 1990). The model design recognizes the differences in leadership styles, the relationship between the situation and the leadership style, and the relationship between follower task maturity and leadership style. Hersey and Blanchard developed the model, believing that the leader diagnoses the situation and adapts leader behaviour to achieve effectiveness based on multiple factors (Bass, 1990). In situational theory, leaders acquire competence from previous leadership experiences. The leader is a product of the situation. Were the situation not available, the leader would not emerge because each situation requires a unique set of traits and competencies that each unique situation helps to create. Situational theory is like contingency theory in that there is an assumption of no simple one right way. The main difference is that situational theory focuses more on the behaviours the leader should adopt, given situational factors (often about follower behaviour). In contrast, contingency theory takes a broader view that includes contingent factors about leader capability and other variables within the situation.

*Transactional and Transformational Leadership*

Transactional views of leadership shift the focus from the traits of the leader to the interaction of the leader-member exchange. Burns (1978) studied the leadership behaviours to motivate followers as transactional or transformational. (Bass, 1990) generalized Burn's model and applied it to generic organizational settings.

Burns (1978) distinguished between transactional and transformational leadership, emphasizing the importance of leadership as an interactional and innovative phenomenon. Transformational leadership was initially measured with three dimensions: charisma, individualized consideration, and intellectual stimulation; transactional leadership with two: contingent reward and management by exception (Bass, 1990). Three dimensions of transformational leadership were defined by four dimensions later on: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Bass distinguished between a transformational and a transactional leadership style and added a third type, namely the laissez-faire (non-leadership) style (Bass & Avolio, 1994). The transactional factors mostly focus on economic exchanges, as Bass (1985) conceptualized, are presented next.

Transactional leadership is centred on the exchange between subordinates and leaders ( Bass & Bass, 2008; Bass & Avolio, 1994). In other words, transactional leaders provide subordinates with resources and rewards in exchange for motivation, productivity, and effective task accomplishment. Therefore, Smith et al. (2004) suppose demands orient transactional leadership. Transactional leaders create an atmosphere of employee commitment to creativity and idea development via direct communication (Deichmann & Stam, 2015). This direct communication can provide insight into the importance of setting and achieving organizational goals. Transactional leadership is based on contingency, in that reward or punishment is contingent upon performance. Namely, leaders will affirm and reward subordinates' efforts and satisfy their relevant demands to reach esteem and support from these activities. It is called contingent reward. A contingent reward is the primary component of transactional leadership. The leader offers these rewards to subordinates in response to performance (Bass, 1985). Rewards may be economic such as bonuses, commissions, or pay raises, or they may be psychological, such as recognition. These rewards may be positive, such as monetary or recognition, or negative, such as demotions, criticism, or withholding rewards. In this paradigm, followers are motivated by the promise of reward or the avoidance of punishment. Transactional leadership is task-focused, clearly

understanding expectations, rewards, and punishment to ensure that goals are achieved. A contingent reward is focused on acquiring or meeting purposes, creating a competitive environment.

Transactional leaders focus on risk avoidance and prioritize, keeping the operations efficient (Birasnav, 2014). In addition to contingent rewards, transactional leadership has another type: management by exception. Leaders monitor their team members' performance and distribute rewards defined by the contract terms with the members. Workers exceeding set standards are positively rewarded. Conversely, subordinates are punished for not meeting established performance parameters (Bass, 1990). When necessary, the manager exerts his influence to maintain control and influence the members' performance. Management by exception is further defined by the activity level of the leader and is described as active or passive. Active management by exception leaders sets standards and then continuously scrutinizes the performance of each of their team members (Bass, 1985). These active leaders are quick to clarify assignments and standards. They will reinforce the importance of the contract with the member by letting the member know their performance is under continual examination. Active management by exception leaders is constantly monitoring the activities of their organizations and taking action when appropriate. In contrast to active management by exception, passive management by exception is the intervention of managers only when standard performance is not achieved (Bass, 1985). Rather than searching for variation from an expected performance like an active manager, these passive managers only react after an incident.

Research in the 1980s brought transformational leadership to the fore as an important extra dimension of leadership. According to Pradhan and Pradhan(2015), transformational leadership allows leaders to influence followers, creating an inspiring vision (Pradhan & Pradhan, 2015). These leaders inspire followers to do more than required (Bass & Bass, 2008). Leaders who exhibit transformational leadership styles encourage an environment conducive to creative ideas that afford a safe environment for experimentation. They motivate subordinates to do more than expected, making them more self-confident, setting more challenging expectations, and achieving higher goals. This transformational leadership approach lies in the leader's ability to inspire trust, loyalty, and admiration in followers, who can then be motivated to merge their individual goals into a collective goal. Transformational leaders do more with colleagues and subordinates than set up simple exchanges or agreements (Avolio & Bass, 1995). The transformational leader always

encourages subordinates by acting as a role model, motivating through inspiration, stimulating intellectually, and giving individualized consideration for needs and goals (Bass & Avolio, 1994).

According to Bass and Avolio (1994), transformational leadership has been defined by characteristics referred to as the 4 I's, including idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence is when followers idealize and emulate their leader. Inspirational motivation occurs when workers are motivated to achieve a common goal. Intellectual stimulation encourages followers to break away from old ways of thinking. And individualized consideration is where followers' needs are individually and equitably met (Bass, 1985; Bass & Avolio, 1994). Idealized influence includes leaders' charisma. Idealized influence is the degree of trust and respect determined by the leader's behaviour and personality. Leaders are trusted and admired and serve as role models to others in the organization. Bass and Avolio (1994) defined charisma as the ability to generate strong emotions in followers. Charismatic leaders are confident in themselves, have a strong conviction in their beliefs, and evoke passion in their followers. Research has shown idealized influence to be the most important of the four components of transformational leadership (Avolio et al., 1999).

Charismatic leaders often place team members' needs before their own and share risks with the team (Bass & Bass, 2008). Charismatic leaders use their emotional intelligence to control their own emotions and understand their team's emotions. They can use this knowledge as a tool to influence the team. This understanding of the values and hopes of the members facilitates the leader's use of optimum words and actions to communicate the vision to the team and inspire members to implement the new vision and exceed their previous efforts. These leaders set the example for behaviour and guide the organizational culture. Bass (1985) originally defined inspirational leadership as a sub-component of charismatic leadership. The charisma of a leader is helpful in inspiring members, but it is not a requirement. Inspirational leaders may use other devices, such as symbols, body language, and cultural icons, to stimulate the inspiration of the organizational members. Quiet leaders may inspire an organization as well as the most charismatic leaders. Followers may be motivated by a vision of the future and put the group's needs above their self-interests. This sense of higher purpose and challenging tasks motivate workers to exceed normal performance levels.

Workers are often inspired by meaningful and challenging tasks and not solely by extrinsic rewards (Bass & Avolio, 1994). An additional component of transformational leadership is

intellectual stimulation. Leaders use intellectual stimulation to teach followers to challenge current assumptions, values, and expectations and to attempt new techniques to improve results (Bass, 1985). Importance is placed on taking risks and being creative in solving new and existing problems. Members are solicited for creative ideas, and workers are motivated by engaging their minds to positively impact their team's performance (Bass, 1985). By supporting and encouraging innovation and creativeness, transformational leaders convert challenges from threats into opportunities. Transformational leaders use intellectual stimulation to encourage and exercise subordinates' creative abilities to improve individual performance and problem-solving skills and become more valuable assets to the team (Bass, 1985). Leaders exhibit individualized consideration when they address team members by acknowledging their differences and treating them according to those differences (Bass, 1985). Follower needs are addressed individually while the entire team is treated equitably.

Team members receiving individualized consideration feel they have a personal relationship with the leader and trust the leader to address their unique needs. Less skilled members are given close supervision, while more experienced members are given appropriate autonomy and responsibility. Subordinates may develop their skills and capabilities and increase their ability to aid the team by receiving mentoring and coaching from the leader. These developmental actions by transformational leaders include delegation, informal communication, and mentoring of subordinates to aid in transforming a team into a more effective organization. As can be deduced, the four factors are conceptually related and mutually reinforcing. For instance, by intellectually stimulating a follower, the leader is also individually considerate in that they better understand how the follower thinks. Both factors motivate the follower, especially if the leader communicates heightened expectations and creates an emotional attachment with charisma. Transformational leadership is a process in which leaders take action to try to increase their subordinates' awareness of what is right and important. They convince their subordinates to strive for a higher level of achievement as well as higher levels of moral and ethical standards. Through their associates' development, they also optimize their organization's development.

Laissez-faire leadership is the third leadership style, often called a lack of leadership. It also includes a style of passive management by exception: avoiding interfering with workers if established procedures are working and performance goals are being met (Geyer & Steyrer, 1998). Tasks are delegated to subordinates with little instruction or oversight. Bass (1985) included a

laissez-faire style to describe a lack of leadership. This lack of leadership includes avoidance of intervention and a lack or loss of influence by the leader. Laissez-faire leadership does not incorporate the inspiration of transformational leadership or the contractual agreements for performance included in transactional leadership.

In the context of higher education institutions (HEIs), leadership is seen as the ability of an organization to configure knowledge management behaviours with organizational strategy, identify opportunities, encourage knowledge management (KM) values, and promote learning in the organization (Koohang et al., 2017). Effective leadership in higher education institutions is essential for learning and understanding the components of successful KM. Paliszkiewicz et al. (2015) asserted that efficient and effective leadership, which includes creating positive relationships and a trustworthy environment, can provide a solid basis for knowledge activities leading to employee job satisfaction and organizational superiority.

As discussed above, the three leadership styles that can impact followers are laissez-faire, transformational, and transactional (Bass & Bass, 2008). However, transformational and transactional are predominant topics in the literature surrounding the case of leadership. They influence creative thinking and idea generation (Deichmann & Stam, 2015). Wu et al. (2016) suggested that transformational and transactional leadership styles motivate followers through intrinsic and extrinsic means. In contrast, a transformational leadership style may more effectively foster innovative behaviour in an established organization through inspirational motivation (Wu et al., 2016). Transformational and transactional leadership could be complementary. Therefore, this study has employed these two dominant styles of leadership, which are transformational and transactional leadership.

**Organizational Culture (OC)**

The concept of organizational culture emerged from the organization's human relations view in the 1940s (Baker et al., 2002). Theorists of the human relations school perceived organizational culture (OC) as the informal, nonmaterial, interpersonal, and moral basis of cooperation and commitment more important than the formal, material, and instrumental controls stressed by the scientific management theorists (Baker et al., 2002). This concept suggests that shared history, unwritten rules, social customs, and expectations shape individuals' behaviours within an organization (Ling, 2013). The culture of an organization helps to create the norms and values that exist in the working environment. These factors are essential for implementing KM (Ling, 2013).

This is supported by Razmerita et al. (2016), who posited that organizational culture could be used in KM implementation, particularly in knowledge sharing.

In the view of knowledge management, organizational culture is an interlinked pattern of employee behaviour. It is a complex set of human values and attitudes that simplifies knowledge sharing (Ho, 2008). Knowledge-based culture is a major originator of KM activities and illustrates the extent to which employees perceive knowledge as a valuable resource and asset (Chang & Chuang, 2011). A knowledge-friendly culture is an important organizational factor for research universities to promote knowledge processes or practices (Muqadas et al., 2017).

One of the powerful conceptual frameworks in organizational culture (OC) is Denison and Mishra (1995). They linked OC with organizational effectiveness and explored the relationship between four cultural traits. These include involvement, consistency, adaptability, and mission. All these traits within the organizational culture can influence the overall success of KM implementation. These traits are discussed in more detail based on Denison and Mishra (1995). Adaptability refers to the employees' ability to understand what the customer wants, learn new skills, and change in response to demand. The focus of adaptability is external and flexible. Consistency refers to shared values and efficient systems and processes and reflects an internal and stable focus. Involvement is concerned with the personal engagement of individuals within the organization and focuses on the organization's internal dynamics and flexibility. The mission represents an organization's purpose and direction and reflects an external focus on the organization and stability. In this study, organizational cultural characteristics followed their framework. Their dimensions were derived from qualitative and quantitative studies, and their sizes have been proven valid and reliable.

Effective KM in higher education requires a significant change in culture, values, organizational structures, and reward systems (Ranjan & Khalil, 2007). Unfortunately, universities/higher-educational institutions are giving less importance to institutional structure, culture, and process, which positively impact organizational performance. This study assesses organizational factors such as leadership and culture and examines their relationship to KM effectiveness in higher education institutions.

**Knowledge Management in the Context of Higher Education Institutions**

Higher education institutions (HEI) in the United States have previously relied on conventional economic models, primarily enrolling a balanced number of tuition-paying students

and receiving public and private funding from states, federal and other stakeholders (Wiley University Services, 2021). However, this sector has suffered significant changes over the past decades. These challenges include a major transformation in the technological environment (Fernández-López et al., 2018), a complex social demand in HEIs (Quarchioni et al., 2020), and a rapid development of the global marketplace (Quarchioni et al., 2020). Additionally, the decrease in public funding for colleges and universities and a growing number of normative calls for transparency, competitiveness, and quality (Quarchioni et al., 2020) have put increasing pressure on HEIs.

The above scenario demands sustainable solutions to the challenges facing higher education. While charging economic fees is part of the solution that can see efficiency and effectiveness in higher education operations, more is needed. In addition, it disadvantages other stakeholders, particularly students, who come from poor homes yet with so much academic potential. Consequently, the need for more sustainable solutions to the challenges faced by HEIs is reinforced. Thus, suggestions by Nawaz et al. (2014) that HEIs need to change their overall management style are unsurprising.

As a result of these growing pressures and needs in the higher education field, scholars have been interested in showcasing the potential benefits of KM in the context of HEIs (Sunalai & Beyerlein, 2015). Sunalai and Beyerlein (2015) suggest that HEI use knowledge to acquire and sustain competitive advantage. Before we discuss the potential benefits of KM for HEIs, it is beneficial to establish the need for these institutions to utilize and experience the same benefits that other corporate organizations have experienced by using knowledge to improve their organizational performance. Researchers have spent significant time trying to establish the need and show KM's great potential for HEIs, which could be used to improve research and learning processes (Quarchioni et al., 2020; Rowley, 2000). Rowley (2000) investigated the readiness of HEI for corporate KM. They concluded that the core activities of HEI are associated with knowledge creation, dissemination, and learning and that HEI is inherently knowledge intensive. Therefore, such organizations contribute to the public good. Other researchers (Kidwell et al., 2000) examined the applicability of corporate KM to HEI. They outlined basic concepts of corporate KM and considered trends to determine whether HEI were ready to embrace corporate KM.

The study suggests that HEI have substantial chances to apply KM practices to support the core activities of its mission. External forces such as market competition, internalization, and the global business environment led to new ways of understanding the role and functions of HEI and the increased potential of KM in such a context (Dhamdhere, 2015; Rowley, 2000). According to Kidwell et al. (2000), KM can help address such challenges resulting in improved decision-making skills, enhanced academic and administrative services, and decreased expenditures.

A comprehensive approach to KM can lead to exponential improvements in sharing knowledge, explicit and implicit, and the subsequent surge in benefits for an educational institution. All college and university missions could be supported if KM practices are applied - from education to public service to research. Maponya (2004) stated that using it effectively can result in better decision-making capabilities, shorten "product" development cycle time, improve academic and administrative services, and reduce costs. The knowledge management application may provide collaborative solutions and higher learning, technological issues, learning, knowledge, competition, teacher training, resolution of student problems, assistance to business and industry, adoption of projects at more extended levels, movement of resources for enhancing development, and achievement of sustainability.

Higher education institutions (HEIs) have a long record in several facets of knowledge, and the primary mission of HEIs is knowledge management. It was demonstrated that universities could reach their goals by utilizing knowledge management activities involving creating, storing, distributing, and disseminating knowledge. Obviously, KM can positively impact the performance of HEI by promoting the services and processes by promoting the services and processes (Ahmad et al., 2020; Iqbal et al., 2019; Ahmad et al., 2015). A Wisconsin Center for Education Research study examined how HEIs could improve their operations' efficiency and effectiveness through KM. It demonstrated how KM objectives could be applied in an educational setting (Khakpour, 2015b). Examples of the many processes that KM can improve include creating curriculum aids, creating knowledge repositories, transforming information into knowledge to improve access to the developed knowledge, and enhancing the knowledge environment.

Rowling(2000) stated that higher education institutions are in the knowledge business since they are involved in knowledge creation, dissemination, and learning. He examined the applicability of knowledge management concepts to higher education institutions in the United Kingdom and identified several existing facilities, systems, or projects. These contribute to

knowledge management in higher education, such as libraries, electronic collections of learning materials, networks for e-mail communication, and management information systems that provide data on the student profile. Universities and higher education institutions share a shared vision—discovering, developing, preserving, and disseminating knowledge. Various policies and practices can shape an educational organization's values during KM. According to Ahmad et al. (2015), knowledge management promotes the services and processes of HEIs. These services and procedures include research, curriculum development, teaching and learning processes, student and alumni services, administrative services, and strategic planning.

Knowledge management supports management processes (administrative subsystem) in HEIs' administration. Managerial responsibilities include attracting prospective students, supplying information about HEI resources and programs, and providing a rich information-filled environment for decision-making. Knowledge management could be the enabling activity capable of bringing about transformative change. Table 1 below summarizes KM activity functions and influence in HEIs as studied by Khakpour (2015).

*Table 1. Functions and Influence of Knowledge Management Activities in Educational Systems (Khakpour, 2015)*

| | |
|---|---|
| **Research Activities (Technical subsystem)** | Increase the accountability and competitiveness of research.<br>Reduce research time and cost.<br>Facilitate interdisciplinary research.<br>Link universities into industry and market research and opportunities.<br>Improve the quantity and quality of the studies through linking researchers into electronic resources, databases, researchers, data banks, etc.<br>Facilitate the implementation of cross-cultural research in universities and to assist data collection and information gathering with e-mail, web, etc. |
| **Educational planning and curriculum development (Technical subsystem)** | Promote quality of academic programs (by identifying and applying best practices and monitoring outputs).<br>Improve and update educational planning rapidly.<br>Improve administrative services related to educational processes.<br>Improve accountability to students and faculty by using previous experiences.<br>Design, plan, and coordinate interdisciplinary education. |
| **Administrative Services (Administrative subsystem)** | Improve services to students and faculties.<br>Improves service to internal and external stakeholders<br>Increase efficiency and effectiveness of services provided<br>Support management Processes<br>Enhance capabilities in identifying activities.<br>Attempt to remove the centralization in providing services and connect all sections into knowledge resources. |
| **HRM (Human resource subsystem)** | Prepare and update human resources.<br>Establish a fair system of Salary and bonuses across the organization.<br>Improve responsiveness capabilities and effective communications.<br>Develop and strengthens informal communication to achieve |

| | |
|---|---|
| | university goals. |
| **Students Activities** | Improve student cooperative activities and learning by providing the socio-technological factors for the sharing of knowledge and experiences.<br>Create an attractive and flexible environment for continuous and overlapped learning.<br>Create a context of social growth for a student from various cultures and communities by providing a cyber-climate for their discourses. |
| **Structure subsystem** | Use KM to improve their organizations' (education system) mission.<br>Preserve organizational assets by optimizing the knowledge within the the organization, encouraging a knowledge-creation process, and utilizing that knowledge of teaching and learning.<br>Combine both explicit and implicit information .and shared by staff and faculty through KM.<br>Lead to the integration of KM concepts in the academic sphere to enhance the effectiveness of external alliance partnerships and to increase the productivity of organizational operations |

## Challenges facing HEIs in Managing Knowledge

Despite the benefits of the knowledge management system in educational institutions, KM faces some challenges and obstacles. Most of these challenges arise from the need for more compatibility between technology and socio-cultural issues. Some activities in this area focused on sharing knowledge among school knowledge workers; for instance, Khakpour (2015) suggests that teachers are often unwilling to share their knowledge with colleagues, mainly when their good reputation results from an excellent store of knowledge. On the other hand, knowledge exchange can also be problematic in educational settings as teachers often need help finding an acceptable way to transfer it to their colleagues.

To provide more innovative services to a demanding public, universities must be involved in creating new knowledge, utilization, and sharing. Managing knowledge assets is mandatory for organizational success (Pai et al., 2022). The study reported that the education sector experiences issues and challenges in implementing knowledge management in the university environment. Some of the challenges/barriers are listed below.

- Lack of understanding concerning what knowledge is and how it is different from information.
- Rigid organizational structure.
- Insufficient inclusion of knowledge management techniques in academic and administrative services/operations.

- Lack of planning and slow pace to incorporate societal changes.
- Lack of leader participation and insufficient time for employees to develop knowledge activities; the diminutive willingness of faculty and staff to share knowledge.
- Employees training in knowledge management techniques; low awareness of the benefits of knowledge management.

Khakpour (2015) summarizes some of the internal and external challenges of knowledge management activities in HEIs, shown in Table 2 below.

*Table 2. Internal and External Challenges of KM Activities in HEIs*

| | | |
|---|---|---|
| **Internal challenges** | **Challenges related To Research subsystem** | Lack of trust about reliability, validity, and results of research published and presented on the internet.<br>Lack of consistency between studies conducted in different regions.<br>Lack of overlap between the concepts and variables in different cultures. |
| | **Challenges related To Technical subsystem** | Lack of technology support for knowledge management<br>The inability of the technology to transfer and manage tacit knowledge |
| | **Challenges related To (Administrative subsystem)** | Lack of Stakeholders' basic knowledge in the field of education.<br>Challenges associated with the management of experiences and tacit knowledge. |
| | **Challenges related To Human resource subsystem** | Lack of Fair system rewards and benefits in exchange for knowledge management activities.<br>Lack of precise criteria and standards to calculate the knowledge and<br>knowledge workers in production and added value |
| | **Challenges related To Students Activities** | Lack of purpose in knowledge activities.<br>Lack of integrated management.<br>Lack of consistency in content knowledge.<br>Possibility of misuse and plagiarism |
| | **Challenges related to Structure subsystem** | Stiff and rigid structures.<br>Emphasis on explicit knowledge and negligence of tacit knowledge<br>due to formal structure |
| **External challenges** | **Dominance of the materialist view** | Use of business models in higher education.<br>Effects of the commercialization of IT on national identity |
| | **Globalization And cultural challenges** | Globalization and cultural dominance of the dominant economies on<br>the developing and underdeveloped countries.<br>Cultural challenges in a multi-ethnic, multi-lingual learning environment. |

**Related work and the research gap**

KM can positively impact the performance of HEI by promoting the services and processes (Ahmad et al., 2020; Iqbal et al., 2019; Ahmad et al., 2015). For instance, using 300 responses from teaching staff, Ahmad et al.(2020) studied the relationship between the KM processes and job performance in HEI in Pakistan. The study found that seven KM processes, including knowledge creation, sharing, and utilization, positively influence job performance in the context of HEI, and job performance significantly influences organizational performance. Their effort is essential to the current study as it demonstrates that KM processes are also critical to the performance of educational institutions. The study by Ahmad et al. (2015) supported these findings. The scholars studied the effects of KM components such as information technology, organizational learning, and knowledge on the performance of HEI. They used a sample size of 113 faculty and administrative staff from 26 universities. The findings indicate that KM significantly affects higher educational institutions' organizational performance. Similarly, Sahibzada et al. (2020) investigated the multifaceted correlations between KM processes (acquisition, sharing and utilization), knowledge worker satisfaction, and organization of HEIs. Therefore, using a sample of 238 academics and administrative staff, the results support that KM processes significantly affect knowledge worker satisfaction, improving HEI's performance.

While KM is broadly recognized as an essential strategic resource for the performance of HEI, various factors influence its effectiveness, including leadership and culture. Ather and Awan (2021) examined the effect of KM practices and transformational and transactional leadership on university teachers' performance. Data collected from 260 teaching faculty members were analyzed through regression analysis. The study demonstrated the positive effects of KM practices on university teacher performance. Moreover, the study suggested that transformational and transactional leadership are essential to KM practices and that transformational leadership performs better than transactional leadership. This research is relevant to our study as it investigates the effects of transformational and transactional leadership on KM practices. These findings reinforced a study by Iqbal et al. (2019) on the effects of KM enablers on KM initiatives. Employing a sample size of 217 academic and administrative personnel from research universities in Pakistan, the hypothesized relationships were tested through the partial least squares structural equation modelling technique. The research found that leadership support, organizational culture, and incentives are vital for successfully implementing knowledge management practices

(knowledge acquisition, sharing, and utilization) in HEIs. Their research is crucial to the current study, providing insights into the interplay between leadership, culture, knowledge management effectiveness, and organization performance in HEI. Ugwu and Okore (2020) reported a direct and positive effect of transformational and transactional leadership on KM effectiveness. They further reported that transformational leadership impacted KM more than transactional leadership. This study appears relevant to our research as it highlights the leadership style that impacts KME and demonstrates that transformational leadership is more influential than transactional leadership. Akhavan et al. (2014) studied the role of leadership style and organizational culture in the effectiveness of KM. A sample size of 224 employees from four research centres was analyzed, and the result showed a positive impact of culture and leadership on KM implementation within research centres. This study is relevant to our research as it explains the important factors facilitating KM processes in research centres. Alshahrani(2018) conducted a similar study to understand the effects of various factors on KM processes in HEI using a semi-structured interview. The analysis of the 25 participants' responses showed that various factors, including organizational culture and leadership, influence the implementation of KM practices.

Despite the richness of research exploring the influence of various factors on KM implementation, the interplay between transformational and transactional leadership, organization culture, knowledge management, and organizational performance still needs to be studied in HEI. While the literature shows much interest in organizational knowledge management activities, little attention was given to exploring KM's collective role in the HEI context and the roles of various critical factors that facilitate its proper implementation in such context. Therefore, recognizing the complexity of the educational business environment and its distinguishing characteristics, this study aims to complement the existing literature by investigating the joint role of organizational culture, leadership styles, KM, and organizational performance in HEI.

**Chapter Summary**

This study explores the relationship between organizational culture, leadership styles, and performance in higher education institutions. This chapter aims to understand the impact of these factors on organizational performance and the effective implementation of knowledge management practices. Knowledge management theory emphasizes the importance of different types of knowledge, such as tacit and explicit knowledge. Critical success factors influence knowledge management effectiveness, including leadership, culture, rules, structure,

responsibilities, information technology infrastructure, measurement, employee training, teamwork, empowerment, knowledge structure, and organizational strategies. Organizational leadership is crucial in business, communicating fundamental knowledge, encouraging flexibility, and displaying transformational characteristics. Five main leadership theories are reviewed: trait theories, behavioral theories, contingency and situational theories, transactional and transformational leadership, and complex leadership theories. Understanding early leadership theories is essential for modern business practices. Organizational culture shapes individuals' behaviours and helps create norms and values. Leadership styles like transformational, laissez-faire and transactional leadership are crucial in shaping employee behaviour and promoting knowledge-sharing within organizations.

# CHAPTER 3

# THEORETICAL MODEL

The current study examined the relationship between KM critical success factors and KM processes, the direct influence of KM processes on OP and the mediating effect of organizational culture in the relationship between KM and organizational leadership in higher education institutions. The following independent variables are employed: transactional leadership, transformational leadership, and organizational culture (mission, adaptability, involvement, and consistency). The dependent variables are KM effectiveness and organizational performance. Figure 1 demonstrates the relationship between all the variables. Organizational leadership has two subscales, organizational culture has four subscales, and knowledge management has three subscales. Figure 2 depicts the conceptual model of the study.

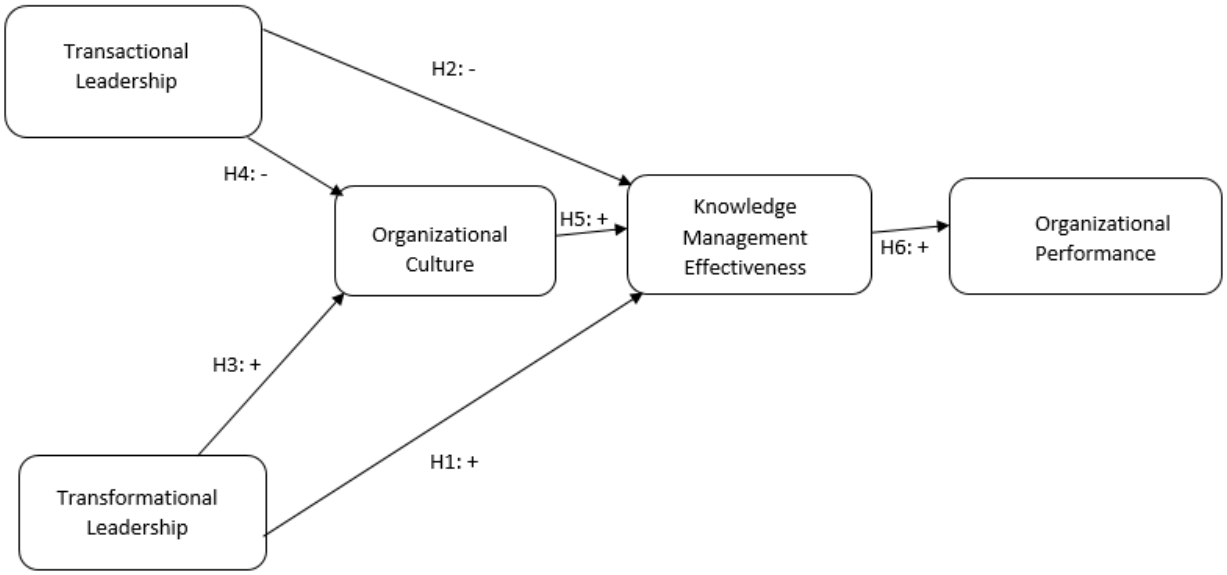


Figure 2 *Conceptual Model of the Study*

**The relationship between leadership styles and knowledge management**

Effective leadership plays a significant role in ensuring the success of an organizational initiative. Nothing substantially impacts an organization more than leadership, which models the behaviour the organization seeks to promote (Berraies et al., 2014). Two components of the "leadership" approach (transactional and transformational leadership) were adopted in this study

(Deichmann & Stam, 2015). Transformational leadership (TL) promotes innovative solutions and encourages faculty and staff to gather information from inside and outside the institution. Transformational behaviour lies in the leader's ability to inspire trust, loyalty, and admiration in followers, who then can be motivated to merge their interests into a collective goal. Transformational leadership focuses on intangible qualities such as vision, shared values, and ideas to build relationships, give broader meaning to separate activities, and provide a common ground to enlist followers in the change process. Research has demonstrated that transformational leadership behaviour positively influences knowledge creation (Al Amiri et al., 2020; Ugwu & Okore, 2020; Crawford, 2005). Sayyadi (2019) and Birasnav (2014) discovered that components of transformational leadership, such as idealized influence, inspirational motivation, and intellectual stimulation, inspire followers to take risks and generate innovative solutions that support knowledge management.

Birasnav (2014) has shown the crucial role of transformational leadership in facilitating knowledge acquisition. Transformational leaders improve knowledge integration through intellectual stimulation that enhances knowledge sharing (Eom et al., 2015). The study by Sayyadi (2019) revealed that transformational leaders are essential in developing relationships for creating social capital, social networks, and opportunities for employees to explore new ideas and knowledge. Another study by Lin (2014) found that transformational leaders build a climate that inspires followers to share knowledge. Based on the above arguments, the following research hypothesis can be deducted:

H1. Transformational leadership has a significantly positive effect on the knowledge management effectiveness of Higher Education Institutions.

Transactional leadership relates to traditional leadership when exchanging leaders and followers (Bass & Bass, 2008). The process builds upon exchange: the leader offers rewards (or threatens punishments) for performing desired behaviours and completing specific tasks. Transactional leadership can improve an organization's learning efficiency by emphasizing existing values and routines and focusing on increasing efficiency in current practices, which enables transactional leaders to foster rule-based ways of doing things (Avolio & Bass, 1995). Transactional leaders also provide organizational members with formal systems and training programs that disseminate existing learning to guide future actions and decisions. Some scholars have shown that transactional leadership positively influence KM (Al Amiri et al., 2020; Ugwu &

Okore, 2020; Birasnav, 2014). Ather and Awan (2021) found that transactional leadership was positively and significantly associated with knowledge sharing. Obeidat et al. (2016) also discovered a positive relationship between transactional leadership and knowledge sharing. The scholars further stated that this relationship is explained by the fact that transactional leaders can use contingent rewards to motivate employees to share knowledge.

H2. Transactional leadership has a significantly positive effect on the knowledge management effectiveness of Higher Education Institutions.

**The relationship between leadership styles and organizational culture**

An organization's core values begin with its leadership, which will then evolve into a leadership style. Studying organizational culture and leadership is critical in understanding and forecasting organizational effectiveness. Leadership is one of the biggest influential factors in an organization's culture. Organizational cultures, seen as contextual factors, profoundly influence the advent and success of leadership in an organizational setting. On the other hand, an essential aspect of leadership in organizations is to influence the values, beliefs, and behavioural expectations that organizational members hold, and therefore, leaders put a lot of effort into the preservation, expansion, and transformation of organizational cultures (Bass & Avolio, 1994; Xenikou, 2017).

Transformation leadership trait plays an essential role in shaping organizational culture (Mandal, 2023), and therefore improving organizational outcomes. Transformational leaders inspire their group to create a shared vision by developing their teams, motivating and building team that would adhere to their vision. Therefore, they positively influence an organizational culture led subordinates to perceive the culture as more innovative. Transformational trait of leadership positively influences organizational culture by modifying and adapting the obsolete elements of an organization's culture (Xenikou, 2017). In supporting Bass (1985), (2017) contends that transformational leaders seek to transform the organization through their shared vision. The study by Purwana (2015) reported that transformational leadership directly affects academic culture. The scholar further concluded that applying a transformational leadership style can improve the quality of the academic culture. These studies are confirmed by Gholamzadeh et al. (2014), and Khan et al. (2021) who reported a positive influence of transformational leadership on culture. Clarinval (2023) discussed how an organizational culture is shaped by the transformational trait of leadership. The scholar contends that inspiration and motivation presented by the

transformational leader result in the team succeeding the unexpected. Clarinval (2023) reported that all four components of Bass and Avolio' (1994) theory known as the 4 I's (Idealized Influence, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration) are all essential spoke of the metaphorical wheel of Bass' transformational leadership and critical elements in shaping an organizational culture. Thus, the following hypothesis: can be deduced:

H3. Transformational leadership has a significantly positive effect on the organizational culture.

A body of research that demonstrated a positive association between transactional leadership and organizational culture (Gholamzadeh et al., 2014) contend that transactional leadership positively influences organizational culture. When managers' over-reliance on rewards and punishment to exert influence and mainly focus on economic and instrumental transactions in treating employees, as well as when they exert more control, they work within the culture as it exists (Bass, 1985). They accept and use the rituals, stories, and role models belonging to the organizational culture to communicate their values (Bass, 1985).

Leadership styles (transformational and transactional) and organizational culture are highly debated in academia because how leadership affects culture is not straightforward (Acar, 2012). However, the organization's success depends on the leader's capability. The academic literature has revealed a level of interchangeability between leadership approaches and their applied situations (Bass & Avolio, 1994). This interchangeability is also found in transactional and transformational leadership styles, which makes contrasting them challenging, as they are different in theory but can have the same organizational effects.

H4. Transactional leadership has a significantly positive effect on the organizational culture.

**The relationship between organizational culture and knowledge management effectiveness**

From the literature review in Chapter 2, culture is regarded as one of the principal determinants of the success of knowledge management practices in organizations. Paying attention to organizational culture to improve knowledge management is a subject that has recently attracted many researchers. Organizational culture influences the way people work, cooperate, and collaborate within the organization. It is also involved in human relations behaviour, common standards and procedures, common values and all the initiatives for how to make the organization

function well professionally and socially. In this view, organizational culture is seen as the main essence of attitudes and beliefs of an organization which reflect in employees and their performance (Seyedyousefi et al., 2016). The relationship between knowledge management effectiveness and organizational culture is explained in the following next lines.

According to Seyedyousefi et al. (2016), organizational culture has a twofold role: The strengthening and weakening role in knowledge management. They further stated that for successful knowledge management, organizations require an environment with a continuous learning culture, which must occur at all levels of the organization. In a learning culture, employees seek problems and will be encouraged to learn. Through learning tools such as implementation learning, they will reinforce knowledge management. By strengthening the learning culture, the capacity for knowledge management implementation will be increased (Seyedyousefi et al., 2016).

According to Shakeri and Baqutayan (2020), a significant issue in implementing knowledge management initiatives is the preliminary preparation of the organization to accept, adopt, and utilize new knowledge management processes. Furthermore, preparing an organization for knowledge management projects requires adjusting or adapting the organizational culture to facilitate, support, and encourage knowledge sharing, utilization, and creation. Shakeri and Baqutayan (2020) concluded that knowledge creation requires an organizational culture that can help knowledge to be fostered. With culture, claiming that knowledge creation can be accomplished is reasonable.

The impacts of the four dimensions (mission, adaptability, involvement, and consistency) of the Denison Organization culture survey (DCOS) knowledge management effectiveness were demonstrated (Farzin & Azizi, 2014; Zheng, 2005). Zheng (2005) demonstrated the positive impact of the four dimensions of organizational culture (mission, adaptability, involvement, consistency) on knowledge management effectiveness. Consequently, Farzin and Azizi (2014) studied the effect of these four dimensions of culture on knowledge. They discovered a positive effect of mission, adaptability, involvement, and consistency on knowledge management effectiveness.

Given the above literature that indicates the beneficial effect of each dimension of organizational culture on knowledge management, it is hypothesized that organizational culture, represented by adaptability, consistency, mission, and involvement, favourably contributes to knowledge management effectiveness. Therefore, the following hypothesis is deducted:

H5. Organizational culture has a significantly positive effect on the knowledge management effectiveness of Higher Education Institutions.

**The relationship between KM Effectiveness and organization performance**

This study examined three KM processes where researchers have received the most consensus (Alaarj et al., 2017; Iqbal et al., 2019; Obeidat et al., 2016). These three processes include knowledge acquisition, sharing, and utilization. KM is essential in HEIs, such as research universities, due to its potential contribution to their performance (Obeidat et al., 2016). For instance, knowledge acquisition, sharing, and utilization improve organizational collective learning and decision-making and enhance productivity and profitability (Chiu & Chen, 2016; Obeidat et al., 2016). Many recent studies revealed a significant, positive, and direct association between KM processes and OP (Chiu & Chen, 2016). Ahmad et al. (2015) also confirmed a positive and direct association between KM processes and university performance. Supporting Ahmad et al. (2015), the study by Nemwel (2013) the research results have established that there was an overall positive effect of knowledge management practices on the organizational performance of HEIs. Consequently, the following hypothesis can be extrapolated:

H6. KM effectiveness has a positive direct impact on organizational performance in the context of higher education institutions.

**The mediating role of organizational culture in the relationship between leadership and knowledge management effectiveness**

Organizational culture is a critical factor that has a profound influence on the effectiveness of leadership in organizational settings. Organizational culture is crucial as it influences the way somebody behaves, processes stimuli and determines what is valued. The cultural context conditions our actions, our beliefs, and widely held values, including leadership. For instance, Xenikou (2017) explained that transformational leadership is useful to lead subordinates to perceive the culture of an organization as innovative, whereas transactional leadership leads employees to perceive the culture as more goal. On the other hand, an essential aspect of leadership is to encourage the values, beliefs, and behavioral expectations that organizational members hold, and therefore, leaders put a lot of effort into the maintenance, development, and change of organizational cultures (Xenikou, 2017; Avolio & Bass, 1995). Furthermore, transformational

leadership plays an important role in creating and positively influencing organizational culture (Elshanti, 2017).

While according to Elshanti (2017), there are little studies exploring the mediating effect of organizational culture on the relationship between leadership styles and organizational learning, some researchers demonstrated some empirical evidence about the effect of organizational culture on the relationship between leadership and organizational performance. For instance, Ogbonna and Harris (2000) suggested that leadership was indirectly and positively linked to performance via innovative and competitive cultures. In addition, Xenikou and Simosi (2006) established that the relationship between leadership styles especially transformational and performance is mediated by the nature and form of the organizational culture that exists. In light of the above arguments, and the works of Elshanti (2017), the following hypothesis was deducted:

H7. Organizational culture mediates the relationship between transformational leadership and KME.

H8. Organizational culture mediates the relationship between transactional leadership and KME.

**Chapter Summary**

This chapter explores the relationship between knowledge management (KM) critical success factors and KM processes in higher education institutions. It employs two leadership approaches: transactional and transformational leadership. Transformational leadership promotes innovative solutions and fosters relationships, while transformational leadership positively influences knowledge creation. Organizational culture is crucial in knowledge management effectiveness, influencing human relations behaviour, standards, procedures, values, and professional and social functioning. A continuous learning culture is essential for successful knowledge management, as employees seek problems and are encouraged to learn. The four dimensions of organizational culture (mission, adaptability, involvement, and consistency) positively impact knowledge management effectiveness. In HEIs, adaptability, consistency, mission, and involvement significantly improve collective learning, decision-making, productivity, and profitability. By focusing on these dimensions, organizations can enhance their knowledge management practices and improve overall performance.

# CHAPTER 4

# RESEARCH METHODOLOGY

## Survey Instrument

A survey (Appendix A) was used to collect data. Its design was based on the objectives of the study. The survey had three parts. That is the demographic, including some demographic questions such as gender, age, and the current position at the university or college. The second part contained the research questions related to the different constructs; the first item-questions for organizational performance are presented, followed by the item questions for knowledge management effectiveness. Next are presented item questions for organizational leadership, and then item questions for organizational culture are given. The last part includes open-ended questions provided for questions where explanations and details were required. The survey included two separate sets of questions. Whether you consider yourself in a leadership role or not, there is a set of questions for leaders to rate themselves and another set for Rater or team members to rate their immediate supervisor.

In this study, measures of two dimensions of organizational leadership (transactional & transformational styles), four dimensions of organizational culture (mission, adaptability, involvement, and consistency), three dimensions of knowledge management effectiveness (generation, sharing, utilization), and one dimensions of organizational performance are included in the questionnaire. Most of the research constructs have already been validated and used for other studies on knowledge management, organizational design, learning, or information technology management.

## Items Measuring Knowledge Management and Organizational Performance

Items measuring both the construct of higher education institutions' performance and knowledge management effectiveness were derived from the study of Ahmad et al. (2015). Their research showed that all variables used in their research, including organizational performance, have high reliability ($\alpha > .70$). This is acceptable. Their study's organizational performance has a coefficient $\alpha$ of .869, which is above the allowable range. This study has used a total of seven questions adopted from Ahmad et al. (2015).

Consequently, the coefficient α for knowledge management effectiveness was .845, which is above the acceptable coefficient of 7. Therefore, this study has adopted all items for knowledge in Ahmad et al. (2015) as follows: 6-items to test the knowledge acquisition process, 5-items to test the knowledge sharing process, and 5-items to test the knowledge utilization process.

**Items Measuring the Construct of Leadership**

Items measuring the construct of leadership were derived from the Multifactor Leadership Questionnaire (MLQ-5X) developed by Avolio and Bass (1995). The MLQ specifies the terms and measures the constructs of Bass's leadership model and was designed by Avolio and Bass (1995). These measurements have been used to determine relationships between leadership behaviours and subordinates' willingness to exert effort, subordinate satisfaction with their leader, and the subordinate's perception of their leader's effectiveness (Avolio & Bass, 1995). A rater form and a leader form are the two main forms of the MLQ. Respondents use the rater form to describe their immediate supervisor or manager in their organizations. A leader form is a self-rating tool for respondents to measure their leadership behaviours. This research will use both the leader and rater forms (MLQ 5X). The MLQ Form 5X is a self-reporting questionnaire consisting of 45 questions that address how often the leader displays a spectrum of leadership behaviours. It was further validated by Antonakis and Avolio (2001) examined the validity of the measurement model and the factor structure of Avolio and Bass's (1995) Multifactor Leadership Questionnaire (MLQ-5X). Using largely homogenous business samples consisting of 2279 pooled male and 1089 pooled female raters who evaluated same-gender leaders, their research confirmed the validity of the 9-factor leadership construct proposed by Bass and Avolio (1995). This study received permission to use all the 8-item questions for the transactional leadership style and 20-item questions for the transformational leadership style.

**Items Measuring Organizational Culture**

Items capturing organizational culture's properties - mission, adaptability, involvement, and consistency - were modified from Fey and Denison (2003), with contributions from Denison himself. Denison and his associates (Fey & Denison, 2003; Denison & Mishra, 1995) have been developing and improving an instrument measuring organizational culture through a series of empirical studies since 1990.

The four dimensions showed adequate convergence and discrimination in all studies. For example, in Fey and Denison's (2003) 36-item instrument (nine items for each dimension),

Coefficient alphas for each dimension exceeded .70. In assessing construct validity, Fey and Denison (2003) found factor loadings ranging from .67 to .89, indicating acceptable construct validity. Due to the large number of items employed in this study, three of the nine items (each one has four questions) that showed the highest factor loadings within each dimension were selected. Thus, the 36 items were reduced to 12.

Since the four dimensions showed adequate convergence and discrimination in all studies, the study has received Denison's permission to use them all. Additionally, some modifications were made to the questions. For instance, the word "institution" was changed to "university" to align with the context of higher education institutions.

*Table 3: Instruments used to collect the data*

| Instruments | Number of items | Likert scale | Source |
|---|---|---|---|
| Multifactor Leadership Questionnaire (MLQ-5X) | 28 | 5 points | Avolio and Bass '(1994) |
| Knowledge Management | 16 | 5 points | Ahmad et al (2015) |
| Organizational Culture | 12 | 5 points | Fey and Denison (2003), Denison and Mishra (1995) |
| Organizational Performance | 7 | 5 points | Ahmad, et al (2015) |

**Pilot study**

Pretesting was conducted to evaluate the research instrument at Dakota State University. A total of 37 participants responded to the pretest of the questionnaire. The responses of the pilot study group were not included in the final sample. The pilot analysis revealed many issues, including missing questions, incorrect questions, and inaccurate Likert scales used for the survey. The input of the respondents was used to improve the survey instrument. They were testing the instrument with the pilot group allowed this researcher to enhance the instrument's validity.

**Data Collection and Procedure**

This study used a probability sampling method with simple random sampling. The primary data was collected employing surveys circulated to a sample population of diverse faculty and administrative leaders across 19 higher education institutions in the US. Survey Monkey was the tool of choice for designing and distributing the survey. Since the study aimed to examine the relationship among constructs in higher education institutions, the unit of analysis was higher

education institutions. The following comprises individuals with diverse roles that were deemed adequate and representative of the university operations: Faculty member, Faculty Chair, Assistant Director, Director, Associate Dean, Associate Vice-President, Dean, Associate Provost, Manager, and Senior Manager from US-based universities and colleges. This screening criterion was established because the most senior person within each higher education (HE) organization can comment on the flow of knowledge around the entire organization rather than within one or a few departments. Faculty and staff are assumed to comment on the flow of knowledge within their respective departments but only on the part of the organization. If the participant's job title is not listed in the survey, a comment box was available to fill in their title.

Approval to conduct the study was granted by the Institutional Review Board (IRB) at Dakota State University (Appendix C). The approval number is 2020-19-7. The online survey included a consent email that presented the study's title, explained its purpose, how to participate using a Survey Monkey link and the confidential nature of their responses (Appendix).

The data were downloaded from Survey Monkey into an Excel spreadsheet for a preliminary analysis. The data were reviewed for completion. There was a total of 251 respondents that attempted the survey. If a respondent failed to complete the survey, the survey was discarded. Of the 251 responses to this study, 104 surveys were eliminated due to failure to complete the survey, which left 165 completed surveys. Two responses (18, 20) were removed because it appeared that the respondent did not fall under the target population of leaders and faculty. The respondent indicated that they are students. Two other responses were removed because these responses were found to be part of the pilot study sample due to the start and end dates. Seven respondents indicated that their geographic location was outside of the United States. Therefore, these seven responses were removed. The remaining 136 responses were used for the analysis.

**Sample Size**

Henseler et al. (2014) wrote that sample sizes of 300 are no longer appropriate for structural equation modelling (p. 572). According to Kock and Hadaya (2018), PLS-SEM is a "desirable multivariate data analysis method because of its remarkable ability to achieve acceptable power at very small sample sizes." There are several options to ensure a minimum sample size is calculated correctly. Kock and Hadaya (2018) offer three methods for calculating the sample size. Those three methods include the Monte Carlo simulation and the minimum R-squared method. The third and most common method is the ten times rule. If this common rule of

thumb were chosen for this study, the minimum sample size would be 40. The number 40 is derived from selecting the maximum number of inner or outer model links pointing to any latent variable in the model and multiplying that by ten. In this case, organizational culture has four links. For this study, a minimum sample size of 100 is ideal. Henseler et al. (2014) specify that a minimum sample size of 100 is sufficient when the models contain "five or fewer constructs, each with more than three items (observed variables) and with high item communalities (.6 or higher)" (p. 574).

### *Parceling*

Since the survey instrument contains many indicators, items within constructs were parcelled before testing hypotheses (Lee & Whittaker, 2021). For instance, for transformational leadership, there are 20 indicators; the transactional leadership construct has eight indicators; organization performance has seven indicators. The knowledge management construct has 16 indicators and 12 indicators for organizational culture. The use of parcels is appealing because it reduces model complexity; that is, the number of indicators of a latent factor is reduced to a smaller number. Parceling of items is the creation of composite scales (sums or average scores across multiple items) of individual items and then submitting these composite scales, rather than the individual items themselves, to analysis with structural equation modelling (Lee & Whittaker, 2021). parceling of items in SEM is common and is desirable for several reasons. Kishton and Widaman (1994) have suggested that using individual items can be "problematic because individual items have low reliability, low intercorrelations, and restricted correlations.. A parcel allocation is a choice of which items to allocate to a given parcel, given the researcher's desired number of items per parcel and the number of parcels per construct. Practical experience indicates that more than four items per latent variable in SEM often creates serious problems of model fit. Kishton and Widaman (1994) have suggested the domain representative approach as one of the parceling strategies. The researcher perform a second-order factor analysis of the individual items based on this approach. This study would sample one item from each factor to form each parcel.

## Data Analysis

Henseler et al. (2014) explained that multivariate data analysis "refers to all statistical techniques that simultaneously analyze multiple measurements" (p. 28). The authors continued to explain that multivariate data analysis is a powerful tool because "proper application of these techniques reveals relationships that otherwise would not be identified" (p. 28). Some common linear analysis methods include factor analysis, logistic regression, multiple regression, and

structural equation modelling. Statistical techniques were employed through SPSS, including descriptive statistics and factor analysis. Factor analysis checked discriminant validity (Quoquab & Mohammad, 2020). Because each variable was measured by multi-item constructs, factor analysis with varimax was adopted to check the unidimensionality among items. Pallant (2011) notes that factor analysis evaluates the underlying structure of the related variables. This is helpful when there is a large number of related variables. Descriptive statistics is a basic analysis in SPSS to examine the mean, standard deviation, and the number of responses for each variable.

**Structural Equation Modeling**

Cozby and Bates (2017) explained that structural equation modelling refers to an advanced statistical method that examines sets of relationships. In this case, examining the relationships between two dimensions of organizational leadership (transactional and transformational styles), four dimensions of organizational culture (mission, adaptability, involvement, and consistency), three dimensions of knowledge management effectiveness (generation, sharing, and utilization), and organizational performance as shown in Figure 2 requires such an advanced statistical technique. Figure 3 depicts some aspects and statistics considerations in PLS-SEM analysis. Partial least squares structural equation modelling (PLS-SEM) is a popular tool for analyzing complex variables' relationships.

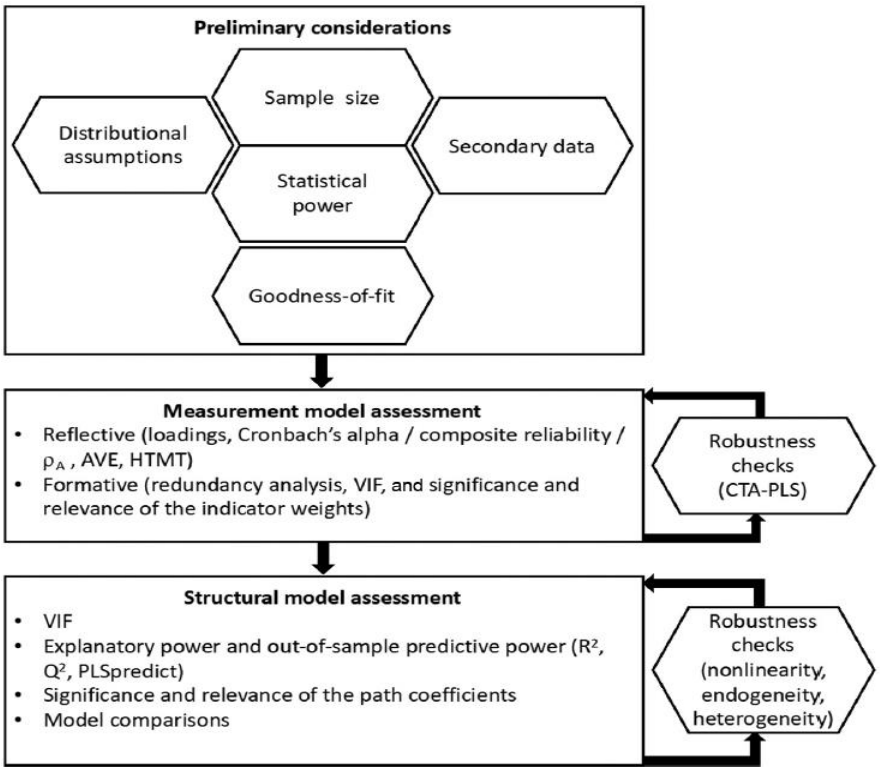


Figure 3 aspects and statistical consideration in PLS-SEM from (Hair et al., 2019)

Pallant (2011) described structural equation modelling as a "relatively new, and quite sophisticated, technique that allows to test various models concerning the interrelationships among a set of variables" (pp. 104-105). Structural equation modelling was used to test measurement and structural models with the survey data.

The PLS-SEM structural equation model consists of two major architectural elements: the measurement model and the structural model (K.-K. Wong, 2019). Figure 4 presents an example of a PLS-SEM model. The outer measurement model represents relationships between observed indicators and their corresponding latent variable constructs. A measurement model denotes how to measure latent variables. The measurement model can be reflective or formative depending on its indicators (Hair et al., 2013). Reflective measurement models have direct relationships from the construct to the indicators and treat the indicators as error-prone manifestations of the underlying construct. Formative indicators cause changes in the latent variable, have varying correlation levels, and are not interchangeable (Hair et al., 2011; Wong, 2013). In this study, we adopted a reflective model.

The Structural theory shows the latent variables (exogenous) to be considered in analyzing a certain phenomenon (endogenous) and their relationships. The structural model is also identified as the inner model. Exogenous latent variables are also known as the independent latent variables, and endogenous latent variables are the dependent variables. Related coefficients for these relationships are referred to as path coefficients. Path coefficients represent the effect of an independent variable on a dependent variable. Based on the sum effect of all independent variables pointing to a dependent variable, Coefficient of Determination (R2) values are calculated, representing the total variance explained by the independent variables on the dependent variable (Wong, 2019).

### *Validity of Measures*

Measurement elements to ensure greater validity in this study include large sample size and validation of the survey instrument through a pilot study. After pretesting, corrections were made to the questions. The committee's chair also reviewed the research instruments to ensure the instruments' content validity, an appropriate step according.

*Reliability*

The data collected from the pilot study was used to compute the reliability of the instruments. Coefficient alpha was calculated using SmartPLS version 3 to determine the internal consistency of the items. Items were considered reliable if they yielded a reliability coefficient of 0.70 and above. This statistic is desirable for internal consistency levels (Fraenkel et al., 2011). In this study, the reliability coefficient of the items in the questionnaire was 0.70 and above.

Since single-item measures frame concepts narrowly, measuring a complex organizational phenomenon is typically done through multiple-item measures. Additionally, multiple-item measures enhance confidence that the variable is more consistent (Zhang et al., 2018). Multiple-item measures are used to improve the reliability and validity of the measure. This study employed a multiple-item question structure. Therefore, to capture the different constructs, variables were measured with a 5-point Likert-type scale that provides the advantage of standardizing and quantifying relative effects.

## Chapter Summary

The study aimed to collect data on organizational leadership, knowledge management, and culture using a survey instrument. This chapter described the research methodology including instrument

(demographics, research questions, and open-ended questions). It measured two dimensions of leadership (transactional & transformational styles), four dimensions of culture (mission, adaptability, involvement, and consistency), three dimensions of knowledge management effectiveness (generation, sharing, utilization), and one dimension of organizational performance. The research instrument was evaluated using pretesting and simple random sampling at 20 colleges and universities across the US. The reflective model was adopted, considering latent variables. The reliability coefficient of the items was 0.70 and above, indicating internal consistency.

# CHAPTER 5

# RESULTS

This research examined the relationships among leadership style, organizational culture, knowledge management, and the organization performance of higher education institutions. The aim was to evaluate the impact of organizational culture and leadership style of college and university employees on knowledge management, and the role KM plays in improving the performance of HEIs. First, the preliminary analysis is presented to evaluate the descriptive of the sample. Next, we present the results of a descriptive analysis of the data, including construct measurements and demographics. We concluded by discussing statistical analysis of the measurement and structural models.

## Demographic Information

The general demographics of this research, such as age, gender, and position, are described in Table 3 below. The target sample group of this research was composed of three school types: public, private not-for-profit, and private for-profit. As shown in Table 3, regarding the school type, 85% of respondents were collected from public schools. Private for-profit and not-for-profit represented about 15%. Regarding gender, 63% of respondents were female, and 35% were male. Faculty members represented 79% of the population.

Table 4 *Demographic information*

| **Variables** | **Values** | **N** | **%** |
|---|---|---|---|
| | **Gender** | | |
| Gender | Male | 47 | 35% |
| | Female | 86 | 63% |
| | Other | 1 | 1% |
| | I prefer not to say | 2 | 1% |
| | **Age** | | |
| | Under 31 years | 6 | 46% |
| | 31 to 35 years | 5 | 4% |
| | 36 to 40 years | 20 | 15% |
| Age | 41 to 45 years | 21 | 15% |
| | 46 to 50 years | 24 | 18% |
| | Over 60 years | 58 | 43% |
| | **Respondent's Position** | | |
| | Faculty member | 108 | 79% |
| | Assistant Director | 1 | 1% |

| | | | |
|---|---|---|---|
| Respondents' position at the institutions | Director | 8 | 6% |
| | Associate Dean | 3 | 2% |
| | Dean | 3 | 2% |
| | Senior Manager | 6 | 4% |
| | Department chair | 7 | 5% |
| | **Working knowledge of Information Systems or Data Management** | | |
| Working knowledge of information Systems or Data Management | Familiar | 14 | 10% |
| | Advanced Beginner | 21 | 16% |
| | Competent | 37 | 27% |
| | Expert | 13 | 10% |
| | Novice | 29 | 21% |
| | Proficient | 21 | 16% |
| | **Worked in current area/position** | | |
| Time spent at current position | Less than one year | 10 | 7% |
| | More than one and less than 2 | 7 | 5% |
| | More than 2 and less than 3 | 6 | 4% |
| | More than 3 and less than 4 | 10 | 7% |
| | More than 4 and less than 5 | 3 | 2% |
| | More than 5 years | 99 | 73% |
| | **Worked for institute** | | |
| Time spent at the institution | Less than 1 year | 7 | 5% |
| | More than 1 and less than 2 | 9 | 7% |
| | More than 2 and less than 3 | 10 | 7% |
| | More than 3 and less than 4 | 8 | 6% |
| | More than 4 and less than 5 | 5 | 4% |
| | More than 5 years | 96 | 71% |
| | **Type of institution** | | |
| Type of institution | Public | 115 | 85% |
| | Private, not-for-profit | 15 | 11% |
| | Private, for-profit | 6 | 4% |
| | **Highest level of degrees awarded by your institution** | | |
| Highest degree conferred by the institutions | Associate | 54 | 40% |
| | Bachelor | 10 | 7% |
| | Masters | 17 | 13% |
| | Doctoral | 51 | 38% |
| | Professional (e.g., MD, JD, DDS) | 4 | 2% |

Note. $N = 136$

**Description of the sample**

The results of the statistical measures of central tendency and dispersion for demographic related data are summarized in table 4. For the assumption of normality of variables, skewness and Kurtosis values for each variable was assessed see Table 4 above. Skewness assesses the extent to which a variable's distribution is symmetrical. At the same time, Kurtosis measures whether the distribution is too peaked (a very narrow distribution with most of the responses in the center (Hair et al., 2017). Even though PLS-SEM makes no assumptions regarding distribution (K. K.-K. Wong, 2013) and is less sensitive to concerns of normality (Hair et al., 2017), it is essential to consider its presence as a part of the analysis process.. A skewness value greater than two and a kurtosis value greater than four (when using SPSS) is considered an extreme departure from normality (Hae-Young, 2013). According to Table 4, there are no seriously unacceptable violations of the normality that may affect results when running Structural Equation Modeling.

Table 5 *Statistical Measures of Central Tendency and Dispersion – Measurement Instrument*

| Latent variables | Indicators | Mean | Median | Min | Max | Std Dev | Excess Kurtosis | Skewness |
|---|---|---|---|---|---|---|---|---|
| OP | OP1 | 3.674 | 4 | 1 | 5 | 0.847 | -0.235 | -0.12 |
| | OP2 | 3.4 | 3 | 1 | 5 | 0.901 | 0.169 | -0.337 |
| | OP3 | 3.448 | 4 | 1 | 5 | 1.075 | -0.39 | -0.438 |
| | OP4 | 2.862 | 3 | 1 | 5 | 1.09 | -0.47 | 0.112 |
| | OP5 | 3.201 | 3 | 1 | 5 | 1.042 | -0.271 | -0.022 |
| | OP6 | 3.224 | 3 | 1 | 5 | 0.975 | -0.327 | 0.11 |
| | OP7 | 3.515 | 3 | 1 | 5 | 1.111 | -0.25 | -0.379 |
| KA | KA1 | 3.007 | 3 | 1 | 5 | 1.204 | -0.91 | -0.04 |
| | KA2 | 3.471 | 4 | 1 | 5 | 1.272 | -0.758 | -0.53 |
| | KA3 | 3.39 | 3 | 1 | 5 | 1.139 | -0.592 | -0.298 |
| | KA4 | 3.602 | 4 | 1 | 5 | 1.043 | -0.612 | -0.313 |
| | KA5 | 3.06 | 3 | 1 | 5 | 1.076 | -0.479 | -0.015 |
| | KA6 | 3.526 | 4 | 1 | 5 | 1.13 | -0.212 | -0.622 |
| KS | KS1 | 3.441 | 4 | 1 | 5 | 1.168 | -0.517 | -0.528 |
| | KS2 | 3.252 | 3 | 1 | 5 | 1.217 | -0.871 | -0.323 |
| | KS3 | 3.618 | 4 | 1 | 5 | 1.118 | -0.609 | -0.506 |
| | KS4 | 3.39 | 4 | 1 | 5 | 1.171 | -0.773 | -0.329 |
| | KS5 | 3.478 | 4 | 1 | 5 | 1.157 | -0.574 | -0.494 |
| KU | KU1 | 3.2 | 3 | 1 | 5 | 1.193 | -0.831 | -0.185 |
| | KU2 | 2.454 | 2.454 | 1 | 5 | 1.164 | -0.601 | 0.396 |
| | KU3 | 2.955 | 3 | 1 | 5 | 1.124 | -0.663 | -0.099 |
| | KU4 | 3.284 | 3 | 1 | 5 | 1.096 | -0.524 | -0.248 |
| | KU5 | 3.274 | 3 | 1 | 5 | 1.172 | -0.778 | -0.247 |
| CI | CI1 | 2.838 | 3 | 1 | 5 | 1.226 | -0.896 | 0.072 |
| | CI2 | 3.294 | 3 | 1 | 5 | 1.243 | -0.95 | -0.275 |
| | CI3 | 3.221 | 3 | 1 | 5 | 1.253 | -0.903 | -0.313 |
| CC | CC1 | 3.081 | 3 | 1 | 5 | 1.301 | -1.077 | -0.092 |
| | CC2 | 2.699 | 3 | 1 | 5 | 1.094 | -0.603 | 0.249 |
| | CC3 | 2.652 | 3 | 1 | 5 | 1.127 | -0.798 | 0.036 |
| CA | CA1 | 3.044 | 3 | 1 | 5 | 1.15 | -0.666 | 0.001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CA2 | 3.132 | 3 | 1 | 5 | 1.212 | -0.88 | -0.132 |
| | CA3 | 2.778 | 3 | 1 | 5 | 1.241 | -1.04 | 0.035 |
| CM | CM1 | 2.971 | 3 | 1 | 5 | 1.366 | -1.211 | -0.121 |
| | CM2 | 2.86 | 3 | 1 | 5 | 1.335 | -1.105 | 0.203 |
| | CM3 | 2.772 | 3 | 1 | 5 | 1.328 | -1.03 | 0.332 |
| TFL | IA1 | 3.537 | 4 | 1 | 5 | 1.281 | -0.614 | -0.603 |
| | IA2 | 3.733 | 4 | 1 | 5 | 1.183 | -0.386 | -0.678 |
| | IA3 | 3.754 | 4 | 1 | 5 | 1.227 | -0.272 | -0.843 |
| | IA4 | 3.481 | 3.481 | 1 | 5 | 1.102 | -0.595 | -0.285 |
| | IS1 | 3.415 | 3.415 | 1 | 5 | 1.143 | -0.56 | -0.312 |
| | IB1 | 3.388 | 4 | 1 | 5 | 1.236 | -0.583 | -0.495 |
| | IS2 | 3.619 | 4 | 1 | 5 | 1.181 | -0.555 | -0.574 |
| | IB2 | 3.425 | 4 | 1 | 5 | 1.184 | -0.707 | -0.424 |
| | IC1 | 3.187 | 3 | 1 | 5 | 1.313 | -1.048 | -0.194 |
| | IC2 | 3.872 | 4 | 1 | 5 | 1.239 | -0.124 | -0.925 |
| | IB3 | 3.827 | 4 | 1 | 5 | 1.102 | -0.073 | -0.816 |
| | IC3 | 3.224 | 4 | 1 | 5 | 1.326 | -0.944 | -0.44 |
| | IS3 | 3.231 | 3 | 1 | 5 | 1.26 | -0.873 | -0.269 |
| | IC4 | 3.218 | 3 | 1 | 5 | 1.368 | -1.151 | -0.229 |
| | IS4 | 3.173 | 3 | 1 | 5 | 1.263 | -0.875 | -0.244 |
| | IB4 | 3.422 | 4 | 1 | 5 | 1.228 | -0.836 | -0.397 |
| | IM1 | 3.664 | 4 | 1 | 5 | 1.111 | -0.19 | -0.666 |
| | IM2 | 3.56 | 4 | 1 | 5 | 1.147 | -0.36 | -0.606 |
| | IM3 | 3.439 | 3.439 | 1 | 5 | 1.214 | -0.731 | -0.38 |
| | IM4 | 3.714 | 4 | 1 | 5 | 1.102 | -0.548 | -0.541 |
| TSL | CR1 | 3.624 | 4 | 1 | 5 | 1.095 | -0.491 | -0.491 |
| | CR2 | 3.402 | 4 | 1 | 5 | 1.2 | -0.726 | -0.385 |
| | CR3 | 3.182 | 3 | 1 | 5 | 1.218 | -0.781 | -0.209 |
| | CR4 | 3.75 | 4 | 1 | 5 | 1.19 | -0.235 | -0.768 |
| | MA1 | 3.06 | 3 | 1 | 5 | 1.187 | -0.806 | 0.15 |
| | MA2 | 3.149 | 3 | 1 | 5 | 1.228 | -0.91 | -0.121 |
| | MA3 | 2.648 | 2.648 | 1 | 5 | 1.216 | -0.776 | 0.292 |
| | MA4 | 2.545 | 2.545 | 1 | 5 | 1.262 | -0.588 | 0.495 |

**Parceling**

Items within constructs were parceled prior to testing hypotheses due to the large number of indicators. Adopting the domain representative approach (Kishton & Widman, 1994), each parcel represents the larger domain: four parcels for transformational leadership, three for transactional leadership, and four for knowledge management effectiveness. These parcels were labelled in the following models and tables as Transfo1, Transfo2, Transfo3, and Transfo4 for transformational leadership; Transac1, Transac2, and Transac3 for transactional leadership; KME1, KME2, KME3, and KME4 for knowledge management effectiveness; and OC1, OC2, and OC3 for organization culture. For parcelled items, an item scale analysis procedure was used to assess again the internal consistency for each item of the measurements. Cronbach's alpha coefficients were used to estimate the item reliability as well. Skewness and kurtosis were also checked for the normality

test. These 14 newly created parcels will be used as indicators for the hypothesis testing in SmartPLS, as suggested by Lee et al. (2021).

Table 6 *Summary of parcels, items, and constructs*

| Constructs | Parcels | Items |
|---|---|---|
| Transformational leadership | Transfo1 | IA1, IB1, IM1, IS1, IC1 |
| | Transfo2 | IA2, IB2, IM2, IS2, IC2 |
| | Transfo3 | IA3, IB3, IM3, IS3, IC3 |
| | Transfo4 | IA4, IB4, IM4, IS4, IC4 |
| Transactional leadership | Transac1 | CR1, MA1, CR1 |
| | Transac2 | CR2, MA2, CR2 |
| | Transac3 | CR3, MA3 |
| Organizational culture | OC1 | CI1, CA2, CM1, CC1 |
| | OC2 | CI2, CA2, CM2, CC2 |
| | OC3 | CI3, CA3, CM3, CC3 |
| Knowledge management effectiveness | KME1 | KA1, KS1, KU1, KA5 |
| | KME2 | KA2, KS2, KU2, KS5 |
| | KME3 | KA3, KS3, KU3, KU5 |
| | KME4 | KA4, KS4, KU4, KA6 |
| | **Total** | 14 |

## Statistical Analysis

Figure 4 represents the research model post-analysis using SmartPLS. Displayed are all indicators (yellow) and loadings for each latent variable construct (white). Arrows pointing to the indicators are indicative of a reflective model (K.-K. Wong, 2019). Endogenous variables are identified with their corresponding composite reliability. The indicators and their associated constructs are representative of the measurement model whereas the exogenous and endogenous variables and their relationships represent the structural model. The following sections present the test results of both models.

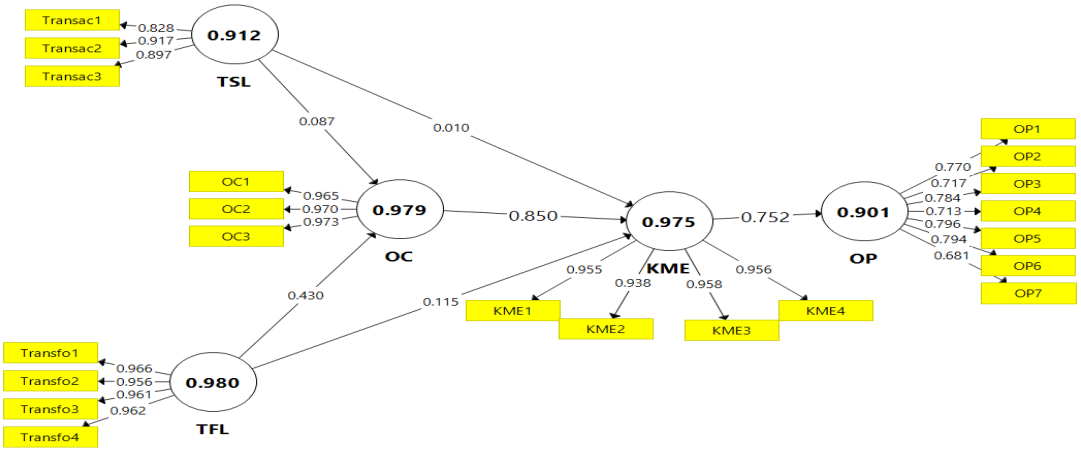


Figure 4 *Analyzed Research Model*

**Measurement Model Testing**

Table 5 summarises the measurement model's quality assessment, which included tests for convergent validity, internal consistency reliability, and discriminant validity using a significance level (alpha) of 0.05 and Bias Correction (BC) for interval analysis. All loadings, except for OP7 (loading=0.681), exceeded the recommended value of 0.70, which accounts for a minimum of 50% of the variance regarding the related constructs (Gao, 2015). Table 6 exhibits the significance of the measurement model after bootstrapping. This indicator was removed from the analysis for hypothesis testing.

The AVE values for all latent variables were higher than the minimum recommended value of 0.50 (Hair et al., 2017), confirming the convergent validity of the parcels. Internal consistency was measured against accepted values of 0.60 and 0.70 for Cronbach's Alpha and Composite Reliability (CR). All constructs passed, indicating no issues with internal consistency (Hair et al., 2017).

Table 7 *Measurement Model Test Summary*

| Latent Variables | Indicators | Loadings | Convergent Validity | | Internal Consistency Reliability | | Discriminant Validity | |
|---|---|---|---|---|---|---|---|---|
| | | | rho_a | AVE | α | Composite Reliability | HTMT | |
| | | >0.70 | >0.50 | >0.50 | >0.60 | >0.70 | <0.85? | HTMT |
| OP | OP1 | 0.770 | 0.874 | 0.565 | 0.871 | 0.901 | Yes | Yes |
| | OP2 | 0.717 | | | | | | |
| | OP3 | 0.784 | | | | | | |
| | OP4 | 0.713 | | | | | | |
| | OP5 | 0.796 | | | | | | |
| | OP6 | 0.794 | | | | | | |
| | OP7 | 0.681 | | | | | | |
| KME | KME1 | 0.955 | 0.966 | 0.906 | 0.965 | 0.975 | No | Yes |
| | KME2 | 0.938 | | | | | | |
| | KME3 | 0.958 | | | | | | |
| | KME4 | 0.956 | | | | | | |
| OC | OC1 | 0.965 | 0.968 | 0.939 | 0.968 | 0.979 | Yes | Yes |
| | OC2 | 0.970 | | | | | | |
| | OC3 | 0.973 | | | | | | |
| TSL | Transact1 | 0.828 | 0.855 | 0.777 | 0.855 | 0.912 | Yes | Yes |
| | Transact2 | 0.917 | | | | | | |
| | Transact3 | 0.897 | | | | | | |
| TFL | Transfo1 | 0.966 | 0.972 | 0.973 | 0.972 | 0.980 | Yes | Yes |
| | Transfo2 | 0.956 | | | | | | |
| | Transfo3 | 0.961 | | | | | | |
| | Transfo4 | 0.962 | | | | | | |

Table 8 *Measurement Model Significance*

| Latent Variables | Indicators | Convergent Validity | | | | Internal Consistency Reliability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Loadings | | AVE | | Coefficient α | | Composite Reliability | |
| | | CI (BC) | Sig. | CI (BC) | Sig. | CI (BC) | Sig. | CI (BC) | Sig. |
| OP | OP1 | [0.684, 0.835] | 0.000 | [0.493, 0.942] | 0.000 | [0.828, 0.899] | 0.000 | [0.871, 0.921] | 0.000 |
| | OP2 | [0.617 0.794] | | | | | | | |
| | OP3 | [0.694, 0.845] | | | | | | | |
| | OP4 | [0.619, 0.788] | | | | | | | |
| | OP5 | [0.718, 0.848] | | | | | | | |
| | OP6 | [0.714, 0.847] | | | | | | | |
| | OP7 | [0.510, 0.787] | | | | | | | |
| KME | KME1 | [0.939, 0.967] | 0.000 | [0.884, 0.925] | 0.000 | [0.956, 0.973] | 0.000 | [0.968, 0.980] | 0.000 |
| | KME2 | [0.915, 0.954] | | | | | | | |
| | KME3 | [0.944, 0.968] | | | | | | | |
| | KME4 | [0.938, 0.968] | | | | | | | |
| OC | OC1 | [0.951, 0.975] | 0.000 | [0.918, 0.954] | 0.000 | [0.955, 0.976] | 0.000 | [0.971, 0.984] | 0.000 |
| | OC2 | [0.958, 0.978] | | | | | | | |
| | OC3 | [0.957, 0.982] | | | | | | | |
| TSL | Transact1 | [0.728, 0.887] | 0.000 | [0.712, 0.829] | 0.000 | [0.793, 0.896] | 0.000 | [0.880, 0.936] | 0.000 |
| | Transact2 | [0.863, 0.944] | | | | | | | |
| | Transact3 | [0.838, 0.927] | | | | | | | |
| TFL | Transfo1 | [0.952, 0.976] | 0.000 | [0.898, 0.942] | 0.000 | [0.962, 0.979] | 0.000 | [0.972, 0.985] | 0.000 |
| | Transfo2 | [0.935, 0.969] | | | | | | | |
| | Transfo3 | [0.943, 0.973] | | | | | | | |
| | Transfo4 | [0.946, 0.972] | | | | | | | |

Finally, two criteria of Heterotriat-Monotrait (HTMT) were measured to assess discriminant validity, including an HTMT ratio of correlations score below the cutoff of 0.85(Hair et al., 2020) and an HTMT interval not containing the value of one, considering a confidence level of 95% (Hair et al., 2017; K.-K. Wong, 2019). All parcels were found to pass both criteria, confirming discriminant validity, except for the KME construct, where the HTMT ratio scored higher than the cutoff of 0.85 or 0.90. According to Figure 4, all tests were significant at the 0.05 significance level. Moreover, to ensure adherence to the recommended minimum for loadings, the indicators with loadings less than 0.70 were removed, and the research model was reanalyzed (Figure 6).

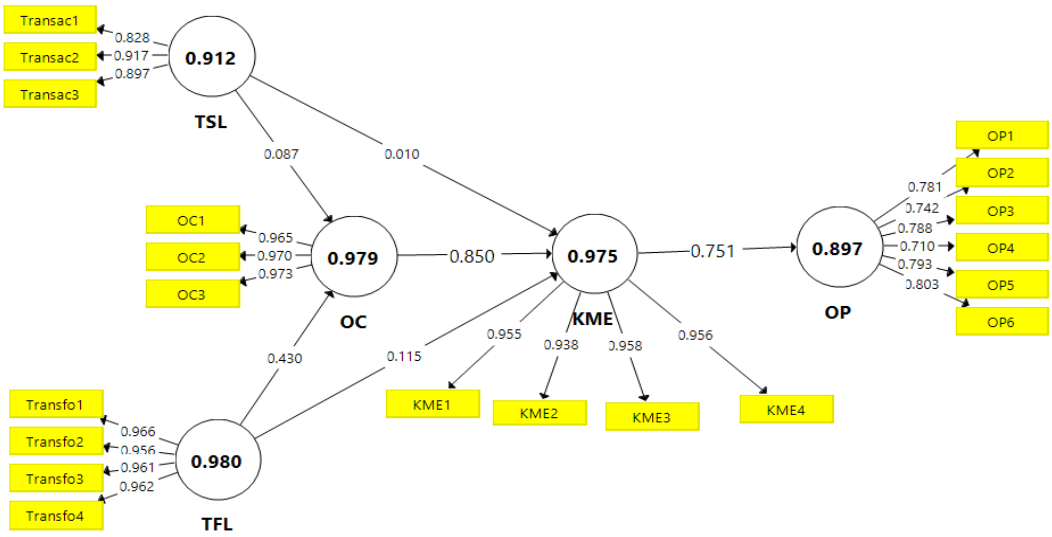


Figure 5 *Analyzed Research Model (loading > 0.7)*

Table 8 and Table 9 represent the test and significance of the measurement model, respectively. An increase in AVE and internal consistency reliability values was observed, confirming the decision to remove the low-performing indicators (Hair et al., 2017).

Table 9 Measurement Model Test Summary (loading >0.7)

| Latent Variables | Indicators | Loadings | Convergent Validity | | Internal Consistency Reliability | | Discriminant Validity | |
|---|---|---|---|---|---|---|---|---|
| | | | rho_a | AVE | α | Composite Reliability | HTMT | |
| | | >0.70 | >0.50 | >0.50 | >0.60 | >0.70 | <0.85? | HTMT |
| OP | OP1 | 0.781 | 0.863 | 0.593 | 0.862 | 0.897 | Yes | Yes |
| | OP2 | 0.742 | | | | | | |
| | OP3 | 0.784 | | | | | | |
| | OP4 | 0.710 | | | | | | |
| | OP5 | 0.793 | | | | | | |
| | OP6 | 0.803 | | | | | | |
| KME | KME1 | 0.955 | 0.966 | 0.906 | 0.965 | 0.965 | No | Yes |
| | KME2 | 0.938 | | | | | | |
| | KME3 | 0.958 | | | | | | |
| | KME4 | 0.956 | | | | | | |
| OC | OC1 | 0.965 | 0.968 | 0.939 | 0.968 | 0.979 | Yes | Yes |
| | OC2 | 0.970 | | | | | | |
| | OC3 | 0.973 | | | | | | |
| TSL | Transact1 | 0.828 | 0.855 | 0.777 | 0.855 | 0.912 | Yes | Yes |
| | Transact2 | 0.917 | | | | | | |
| | Transact3 | 0.897 | | | | | | |
| TFL | Transfo1 | 0.966 | 0.972 | 0.973 | 0.972 | 0.980 | Yes | Yes |
| | Transfo2 | 0.956 | | | | | | |
| | Transfo3 | 0.961 | | | | | | |
| | Transfo4 | 0.962 | | | | | | |

Table 10 Measurement Model Significance (loading >0.7)

| Latent Variables | Indicators | Convergent Validity | | | | Internal Consistency Reliability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Loadings | | AVE | | Coefficient α | | Composite Reliability | |
| | | CI (BC) | Sig. | CI (BC) | Sig. | CI (BC) | Sig. | CI (BC) | Sig. |
| OP | OP1 | [0.687, 0.845] | 0.000 | [0.522, 0.661] | 0.000 | [0.817, 0.897] | 0.000 | [0.867, 0.921] | 0.000 |
| | OP2 | [0.646, 0.812] | | | | | | | |
| | OP3 | [0.705, 0.846] | | | | | | | |
| | OP4 | [0.601, 0.782] | | | | | | | |
| | OP5 | [0.702, 0.856] | | | | | | | |
| | OP6 | [0.729, 0.854] | | | | | | | |
| KME | KME1 | [0.939, 0.967] | 0.000 | [0.882, 0.925] | 0.000 | [0.955, 0.973] | 0.000 | [0.968, 0.980] | 0.000 |
| | KME2 | [0.915, 0.954] | | | | | | | |
| | KME3 | [0.944, 0.968] | | | | | | | |
| | KME4 | [0.938, 0.968] | | | | | | | |
| OC | OC1 | [0.951, 0.975] | 0.000 | [0.920, 0.954] | 0.000 | [0.956, 0.976] | 0.000 | [0.972, 0.984] | 0.000 |
| | OC2 | [0.958, 0.978] | | | | | | | |
| | OC3 | [0.957, 0.982] | | | | | | | |
| TSL | Transact1 | [0.728, 0.887] | 0.000 | [0.712, 0.830] | 0.000 | [0.796, 0.897] | 0.000 | [0.881, 0.936] | 0.000 |
| | Transact2 | [0.863, 0.944] | | | | | | | |
| | Transact3 | [0.838, 0.927] | | | | | | | |
| TFL | Transfo1 | [0.952, 0.976] | 0.000 | [0.899, 0.942] | 0.000 | [0.963, 0.980] | 0.000 | [0.973, 0.985] | 0.000 |
| | Transfo2 | [0.935, 0.969] | | | | | | | |
| | Transfo3 | [0.943, 0.973] | | | | | | | |
| | Transfo4 | [0.946, 0.972] | | | | | | | |

**Structural Model Testing**

In this research, PLS-SEM modeling, using SmartPLS (Ringle et al., 2015), was applied to discern cause and effect relationships of the structural model. The model was estimated utilizing the PLS algorithm with complete bootstrapping using the bias-corrected confidence interval method, two-tailed test, 5,000 subsamples, and mean replacement for missing values.

Figure 7 depict the hypothesized research model for the structural model while Table 10 represents a summary of the model estimation results using bootstrapping. R-squared is a goodness-of-fit measure for linear regression models. We observed 84% of the variance in the KME, 25% of the variance in the OC, and 56% for OP.

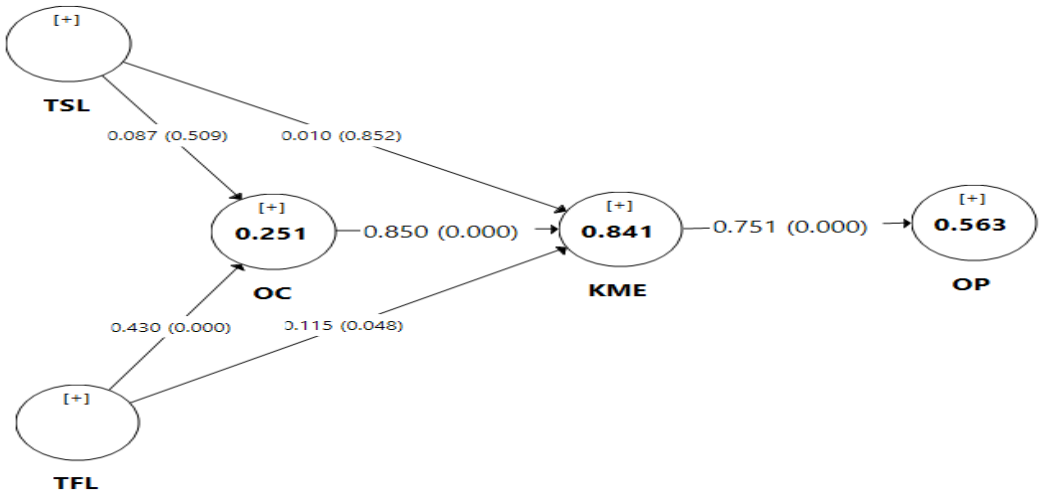


Figure 6 *Hypothesized Research Model with Endogenous Latent Variables*

*Table 11 Endogenous Variable Summary*

| Endogenous Latent Variables | Coefficient of Determination (R2) | | | R2 Adjusted | | | |
|---|---|---|---|---|---|---|---|
| | Value | Confidence Interval (BC) | p-value | Value | Confidence Interval (BC) | p-value | Predictive Relevance Q2 |
| KME | 0.841 | [0.786, 0.882] | 0.000 | 0.838 | [0.782, 0.879] | 0.000 | 0.756 |
| OC | 0.251 | [0.107, 0.391] | 0.001 | 0.24 | [0.094, 0.381] | 0.002 | 0.223 |
| OP | 0.563 | [0.450, 0.657] | 0.000 | 0.56 | [0.445, 0.654] | 0.000 | 0.325 |

Blindfolding, utilizing an Omission Distance (OD) of 7, was the technique used to calculate Stone-Geisser's Q2, which determines the predictive relevance of the model (K.-K. Wong, 2019). All three endogenous latent variables have a Q2 greater than zero, which shows that the model has predictive relevance. We observed better than moderate predictive relevance for OC and OP, a substantial predictive relevance for KME.

Table 11 provides a summary of the inspection of exogenous variables' effects on corresponding endogenous variables. This includes the mediating effects of OC. Considering VIF values of less than 5.0, We observed that multicollinearity is not a concern for all hypothesized relationships (Hair et al., 2013). Based on path coefficients and significance, there is support for hypotheses H4, H3, and H8 at an alpha of 0.01 (***), H1 at an alpha of 0.05 (**). H2 and H5 were not significant.

*Table 12 Structural Model Test Summary*

| Hypothesis | Relationship | VIF <5.0 | Path Coefficient | Confidence Interval (BC) | p-value | Effect Size (f2) | Results |
|---|---|---|---|---|---|---|---|
| H1 | TFL -> KME | 2.774 | 0.115 | [0.002, 0.227] | 0.048** | 0.03 | Supported |
| H2 | TSL -> KME | 2.537 | 0.01 | [-0.096, 0.116] | 0.852 | 0.000 | Not supported |
| H3 | TFL -> OC | 2.527 | 0.43 | [0.192, 0.657] | 0.000 | 0.098 | Supported |
| H4 | TSL -> OC | 2.527 | 0.087 | [-0.183, 0.324] | 0.509 | 3.405 | Not Supported |
| H5 | OC -> KME | 1.335 | 0.85 | [0.783, 0.898] | 0.000*** | 3.405 | Supported |
| H6 | KME -> OP | 1.000 | 0.75 | [0.67, 0.81] | 0.000*** | 1.29 | Supported |

Note. ***p<0.001, **p<0.01, *p<0.05;

## Mediation analysis

*Table 13 Specific Indirect path*

| Hypothesis | Path | β | SD | t-value | p-value | Results |
|---|---|---|---|---|---|---|
| H7 | TFL -> OC->KME | 0.492 | 0.186 | 2.641 | 0.000*** | Supported |
| H8 | TSL -> OC->KME | -0.064 | 0.197 | 0.324 | 0.746 | Not supported |

Note. ***p<0.001

The results show a significant indirect effect of transformational leadership (TFL) on KME through the mediation of organizational culture OC (β=0.492, p<0.001). Furthermore, the resultsindicate that there no significant indirect effect of transactional leadership (TSL) on KME (β=-0.064, P>0.746). These results provide supports for H7.

## Chapter Summary

The research assessed the impact of organizational culture and leadership style on the development and sustainability of higher education organizations. The chapter discussed items parceling method for transformational, transactional, knowledge management effectiveness, and organization culture. Statistical analysis showed convergent validity, internal consistency reliability, and discriminant validity. The structural model was tested using PLS-SEM modelling, observing 84% of the variance in KME, 25% in OC, and 56% in OP. The model had predictive relevance for all endogenous latent variables, with better than moderate predictive relevance for OC and OP.

# CHAPTER 6

# DISCUSSION

This study examined the relationship among five constructs. The study intended to contribute to knowledge management, organizational leadership, and corporate culture. Specifically, this research answered the call by (Iqbal et al., 2019), who recommended that future studies consider the relationship between KM and organizational performance. Therefore, this study investigated the relationship among KM, organizational performance, leadership styles, and organizational culture.

Overall, this research suggested that transformational leadership and organizational culture directly influence the effective implementation of knowledge management in higher education institutions. Knowledge management has a positive influence on the performance of educational institutions. The research also supported that organizational culture mediates the effects of transformational leadership on knowledge management effectiveness. However, the mediating role of organizational culture in the relationship of transactional leadership on knowledge management was not significant. Furthermore, the effect of transactional leadership on KME was found to be insignificant.

Transformational leadership is a style that promotes innovation, creativity, and collaboration (Ugwu & Okore, 2020; Brandt et al., 2016). Transformational leaders can cope with changes by proactively engaging with conflicting views in formulating a persuasive vision for the future. As higher education institutions are going through rapid changes due to technological advances, a transformational leader can promote KM values to motivate, inspire, and encourage employees to be involved in knowledge management activities. One aim of this study was to investigate the impact of transformational leadership on knowledge management effectiveness. Results demonstrated that transformational leadership significantly and positively affects knowledge management processes of knowledge acquisition, sharing, and utilization, providing support for H1. This means a transformational leadership style is required to facilitate the effective implementation of knowledge management processes in higher education institutions. This is interesting as previous studies have acknowledged transformational leadership as having a positive general influence on knowledge management effectiveness (Ather & Awan, 2021; Ugwu & Okore, 2020; Sayyadi, 2019; Brandt et al., 2016). These researchers observed that transformational

leadership is critical in facilitating knowledge management processes of knowledge acquisition, processes of knowledge acquisition, sharing, and utilization.

The study found no significant relationship between transactional leadership and KM effectiveness by passing H2. These results differ from the findings of Ather and Awan (2021), Ugwu and Okore (2020). These acholars show that transformational and transactional leadership have a significant relationship with knowledge management practices. These results support the findings by Crawford (2005), who found no significant relationship between transactional leadership and knowledge management. This can be explained by the nature of transactional leadership, where there is less tendency to focus on the personal development of followers and more centered on goal attainment (Crawford, 2005). Such an approach may not be compatible in an HEI context with its emphasis on shared governance, creativity, innovation, and relative autonomy of faculty. Another possible explanation is that leaders who embrace transactional behavior follow a more structured approach to employee relations. This kind of leader does not allow for innovations. They do not focus on working conditions, such as an employee's connection with their executive, which can drive engagement and satisfaction. Transactional leaders who reward or acknowledge agreed-upon performance objectives without intellectual stimulation or consideration of subordinates' individual needs are not likely to attract, invigorate or retain employees (Avolio & Bass, 1995). Such leadership style may not be compatible with the context of HEI. The pressure of the present-day competitive environment further highlights the need for leaders to adjust to these changes through transformational leadership in such a context.

The study aimed to achieve multiple objectives. Firstly, it sought to examine the potential mediating influence of organizational culture. The results only supported the hypothesis asserting the mediation of organizational culture in the relationship between transformational leadership and organizational culture providing support for H3 and H7. This outcome aligns with the findings of Elshanti (2017) and Khan et al. (2021). Elshanti (2017) further demonstrated that organizational culture serves as a complete mediator between transformational leadership and organizational learning. Transformational leaders facilitate their followers' commitment, coherence, and adaptability within the organizational framework. These leaders can reshape the organization's culture, realigning its values, shared assumptions, and norms in line with a new vision (B. M. Bass & Avolio, 1994).

Furthermore, the study illuminated the affirmative impact of organizational culture – encompassing adaptability, commitment, involvement, and mission – on the effectiveness of knowledge management, thereby offering validation for H5. The results underscore the significance of fostering an organizational culture that fosters knowledge management practices. These findings underscore the paramount importance of culture. This is because culture shapes the core beliefs, values, and norms governing the 'why' and 'how' of knowledge generation, dissemination, and utilization within an organization (Aldulaimi, 2015). Consequently, this discovery underscores the imperative of prioritizing establishing an organizational culture that champions and nurtures knowledge management.

The research yielded no substantiation for the role of organizational culture as a mediating factor in the correlation between knowledge management and organizational culture, thus bypassing H8. In the intricate landscape of contemporary knowledge, Higher Education Institutions (HEIs) necessitate perpetual innovation, analysis, evolution, investigation, responsiveness, and anticipation of threats and opportunities. Consequently, the demand arises for transformational leaders who can innovate, inspire, and motivate followers. In contrast, transactional leaders lean towards a more structured approach to employee interactions.

A notable discovery from this study underscores the substantial and affirmative impact of effectively executed knowledge management (KME) processes on the performance of HEIs, thereby corroborating H6. This revelation illuminates that proficient KME processes encompassing acquisition, sharing, and utilization within HEIs can elevate research productivity, student satisfaction, curriculum development, research rankings, undergraduate student success, placement rates, and the capacity to navigate environmental challenges. These findings align harmoniously with the conclusions drawn by Ahmad et al. (N. Ahmad et al., 2015), whose investigation in a university context revealed a significant, positive, and direct correlation between KM processes and overall organizational performance.

**Implication**

This dissertation contributes significantly to the existing literature on knowledge management, organizational performance, leadership, and culture. From a theoretical standpoint, this research effectively addresses the call made by Iqbal et al. (2019) to explore the intricate interplay among four fundamental constructs: organizational performance, knowledge

management effectiveness, organizational culture, and leadership (specifically transformational and transactional). In pursuit of this objective, well-established measurement tools were employed, including the Multifactor Leadership Questionnaire (MLQ-5X) developed by Bass and Avolio (B. M. Bass & Avolio, 1994), as well as the Denison Organizational Culture Survey crafted by Fey and Denison (2003).

Central to this study is identifying the pivotal role of transformational leadership and specific dimensions of organizational culture in influencing the performance of higher education institutions. Knowledge management practices must strategically focus on integrating initiatives to cultivate a culture conducive to advancing knowledge. Notably, the synthesis of organizational culture dimensions—adaptability, consistency, involvement, and mission—yields a positive synergy that enhances the effectiveness of knowledge management endeavors. These findings underscore the heightened significance of comprehending organizational culture dynamics. They provide leaders, managers, and researchers with invaluable insights for effectively navigating the intricacies of organizational culture management, ensuring its alignment with the external ecosystem. These conclusions are further substantiated by the works of Elshanti (2017), who emphasize the profound influence of organizational culture alignment on overall efficacy.

Furthermore, a crucial aspect lies in comprehending the leadership styles influencing organizational culture and knowledge management's efficacy. This research significantly aids leaders within higher education pinpoint the precise leadership style that correlates with cultivating a nurturing culture and auguring knowledge management effectiveness. The investigation establishes the prominence of the transformational leadership style in fostering a conducive culture and bolstering the efficacy of knowledge management. As a result, leaders within Higher Education Institutions (HEIs) are encouraged to channel their efforts toward cultivating and adopting these transformative leadership styles, tailoring their approach to align with the prevailing organizational culture (Elshanti, 2017).

## Chapter Summary

This study explores the relationship between knowledge management, organizational leadership, and organizational culture in higher education institutions (HEI). It finds that transformational leadership and organizational culture directly influence the effective implementation of knowledge management. Knowledge management positively influences

educational institutions' performance, and organizational culture mediates the effects of transformational leadership on knowledge management effectiveness. However, the mediating role of organizational culture between transactional leadership and knowledge management could have been more significant. Transformational leadership is critical in facilitating knowledge management processes, such as acquisition, sharing, and utilization. However, the study found no significant relationship between transactional leadership and knowledge management effectiveness, possibly due to its nature and needing to consider working conditions. To improve knowledge management in HEIs, leaders must adapt to these changes through transformational leadership. Effective knowledge management processes can increase research productivity, student satisfaction, curriculum development, undergraduate student success, student placement rates, and responsiveness to environmental challenges.

# CHAPTER 7

## Conclusion

In conclusion, this study has provided significant insights and opportunities by meticulously assessing the intricate relationships between knowledge management, transformational and transactional leadership, organizational performance, and the mediating influence of corporate culture across various higher education institutions in the United States of America. The primary goal of this study was to contribute to the evolving body of literature about organizational knowledge management, leadership dynamics, organizational culture and organizational performance. It specifically addressed the call of Iqbal et al. (2019) issued, concentrating on the interplay between knowledge management success factors, and organizational performance. The research methodology employed established tools such as the Multifactor Leadership Questionnaire (MLQ-5X) developed by Bass and Avolio (1995), alongside the Denison Organizational Culture Survey by Fey and Denison (2003). Three key research questions and eight hypotheses were formulated and examined through a comprehensive survey instrument.

While hypotheses H1, H3, H5, H6 and H7 garnered support, hypotheses H2, H4 and H8 were not substantiated. This study contends a positive relationship exists between knowledge management and organizational performance. In contrast, transformational leadership and organizational culture favorably connect with the effectiveness of knowledge management practices. The implications of this study extend both theoretically and practically. It enhances comprehension regarding knowledge management and its pivotal influencers, thereby furnishing valuable insights for implementing effective KM practices that, in turn, enhance educational and organizational performance. Furthermore, this study marks a noteworthy stride by converging five key theoretical frameworks—knowledge management, transformational and transactional leadership styles, organizational culture, and organizational performance.

### Limitation and future studies

Therefore, to advance this research trajectory, future studies should focus on refining measurement tools and exploring additional research queries. This could involve a comprehensive examination of all dimensions of transactional leadership alongside organizational culture and

knowledge management. Additionally, the potential of multi-group analyses, particularly in contrasting private and public educational institutions, warrants exploration for a deeper understanding of KM effectiveness within differing contexts. The study acknowledges the limitation of its sample size and proposes the utilization of more extensive and diverse samples to enhance the generalizability of its findings. Moreover, the geographical scope of this research within the United States underscores the need for replication in different developed and developing country contexts to validate and extend the current findings. This study significantly contributes to the ongoing dialogue surrounding knowledge management's intricate relationship with leadership, culture, and organizational performance within higher education institutions.

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# APPENDICES

## APPENDIX A: RESEARH MODEL CONSTRUCTS MEASUREMENTS

## MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ)-LEADER FORM, MODIFIED FROM BASS AND AVOLIO'S (1994)

## (SAMPLE)

Please answer all items on this answer sheet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Twenty-eight descriptive statements are listed on the following pages. Judge how frequently each statement fits you. The word "others" may mean your peers, clients, direct reports, supervisors, and/or all these individuals.

**Five-point Likert scale**

Transactional Leadership

1. I provide others with assistance in exchange for their efforts
2. I discuss in specific terms who is responsible for achieving performance targets
3. I make clear what one can expect to receive when performance goals are achieved
4. I express satisfaction when others meet expectations
5. I focus attention on irregularities, mistakes, exceptions, and deviations from standards

Transformational Leadership

1. I instill pride in others for being associated with me
2. I go beyond self-interest for the good of the group
3. I act in ways that build others' respect for me
4. I display a sense of power and confidence
5. I talk about my most important values and beliefs

# MULTIFACTOR LEADERSHIP QUESTIONNAIRE (MLQ)-RATER FORM, MODIFIED FROM BASS AND AVOLIO'S (1994)

## (SAMPLE)

This section is intended to describe your Leadership from your perspective. If you do not know the answer, leave it blank. For the following constructs, rate your immediate Manager regarding the elements listed from 1 to 5.

Transactional Leadership

1. Provides others with assistance in exchange for their efforts
2. Discusses in specific terms who is responsible for achieving performance targets
3. Makes clear what one can expect to receive when performance goals are achieved
4. Expresses satisfaction when others meet expectations
5. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards

Transformational Leadership

1. Instills pride in others for being associated with me
2. Goes beyond self-interest for the good of the group
3. I acts in ways that build others' respect for me
4. Displays a sense of power and confidence
5. Talks about my most important values and beliefs

## ORGANIZATIONAL PERFORMANCE (OP), modified from Ahmad, et al (2015)

This section is intended to describe your organizational performance from your perspective. If you do not know the answer, leave it blank. For the following constructs, rate your school regarding the elements listed from 1 to 5.

1. Students satisfaction of our school is better as compared to peer schools.
2. Curriculum development process of our school is better as compared to peer schools.
3. Responsiveness of our school is better as compared to peer schools.
4. Research productivity of our school is better as compared to peer schools.
5. Research ranking of our school is better as compared to peer schools.
6. First-year undergraduate student success rate is better as compared to our peers.
7. Placement rates of our schools is better as compared to our peer schools.

## KNOWLEDGE MANAGEMENT EFFECTIVENESS, MODIFIED FROM AHMAD ET AL (2015)

For the following constructs, rate your school regarding the elements listed from 1 to 5.

Knowledge Acquisition

1. We hire new faculty and staff as a source for acquiring new knowledge.
2. We provide an open environment to our faculty and staff acquire new knowledge.
3. We actively observe and adopt the best practice in our higher education sector.
4. We continually gather information that is relevant to our operations and activities.
5. We list and define the knowledge we possess as well as any unavailable knowledge.
6. We obtain knowledge from different sources: students, partners, and faculty and staff.

Knowledge Sharing

1. We share information and knowledge necessary for the tasks.
2. We exchange knowledge between faculty and staff to achieve our goals with little time and effort
3. We developed information systems, like intranet and electronic bulletin boards to share information and knowledge
4. We promote sharing of information and knowledge between team members and the various departments.
5. Knowledge is shared between supervisors and subordinates.

Knowledge utilization

1. The school relies on established best-practices in guiding operations and making decisions .
2. Workflow diagrams are required and used in performing tasks.
3. The school effectively manages different sources and types of knowledge.
4. The school utilizes available knowledge in improving services provided to its students.
5. The school applies available knowledge to improve its performance.

## ORGANIZATIONAL CULTURE, Adapted From Denison And Mishra (1995); And Fey And Denison (2003)

For the following constructs, rate your school regarding the elements listed from 1 to 5.

Involvement

1. Our school continuously invest in the skills of faculty and staff.
2. Decisions are usually made at the level where the best information is available.
3. Working in your school is like being part of a team.

Consistency

1. There is a clear and consistent set of values in this school that governs the way you do business.
2. It is easy to reach consensus, even on different issues.
3. People from different departments still share a common perspective.

Adaptability

1. This school continually adopts new and improved ways to do work.
2. Student input directly influences our decision in this school
3. This school encourages and rewards those who take risk.

Mission

1. This school has a clear strategy for the future.
2. Leadership has clearly stated the objective we are trying to meet.
3. Our vision creates excitement and motivation for our faculty and staff.

## Open-ended questions

1. In your opinion, which factors/KM processes are the most effective in implementing knowledge management practices at your school?

2. In your judgment, what are the primary barriers to effective knowledge management initiatives among administration, staff, and faculty at your school?

## DEMOGRAPHIC

1. What is your Gender? ____Male____Female____Other

2. What is your Age?
   ____Under 31 years? ___31 to 35 years ___36 to 40 years
   ____41 to 45 years____46 to 50 years___over 50 years

3. What is your position?
   ___Faculty member__Faculty Chair ____Assistant Director
   ___Director _____ Associate Dean ____Associate Vice-President
   ____ Dean ____ Associate Provost ____Manager ___Senior Manager ____Other

4. Do you have working knowledge of Information Systems or data management? (Check all that apply)
   ___ Working knowledge ___ Expertise
   ___ Familiar ___ Novice

5. How long have you worked in your current area/position?
   ___ Less than 1 year ___ More than 1 and less than 2 ___ More than 2 and less than 3
   ___ More than 3 and Less than 4 ___ More than 4 and less than 5 ___ More than 5 years

6. How long (in years) have you worked for the school?
   ___ Less than 1 year ___ More than 1 and less than 2 ___ More than 2 and less than 3
   ___ More than 3 and Less than 4 ___ More than 4 and less than 5 ___ More than 5 years

7. Please indicate the option that best describes your school:
   _____Public ____Private, not-for-profit

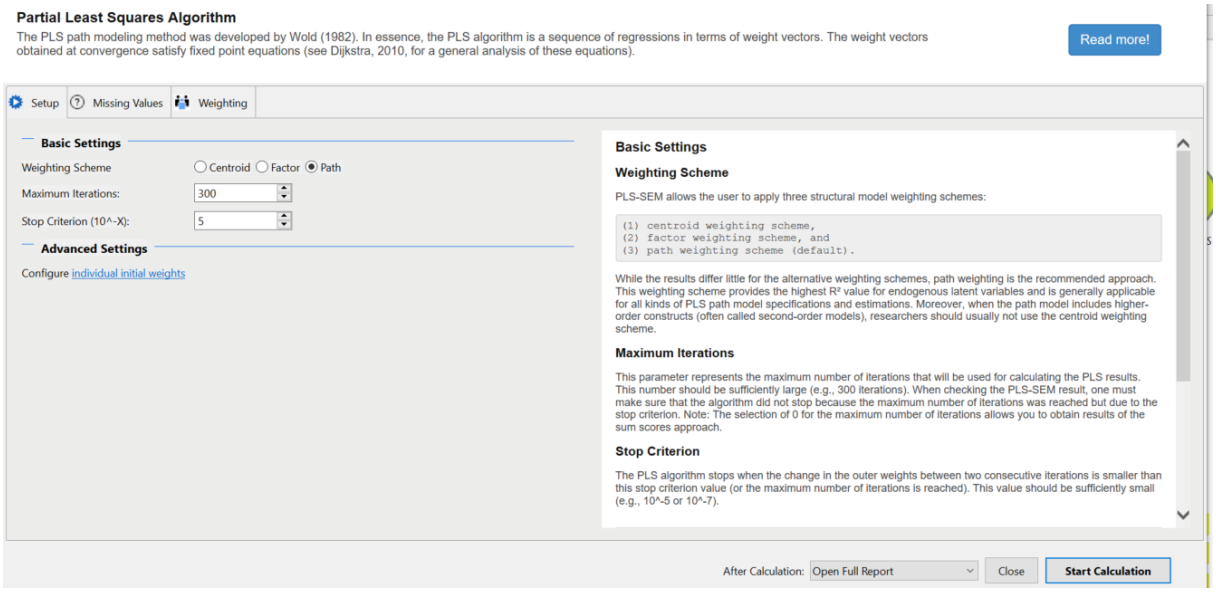
8. Please indicate the level(s) of degrees awarded by your school (select all that apply):

*Note – this is your degree, but the degrees offered at your school
____ Certificate
____ Associate __ Bachelor____Masters
___Doctoral ___Professional (e.g., MD, JD, DDS)

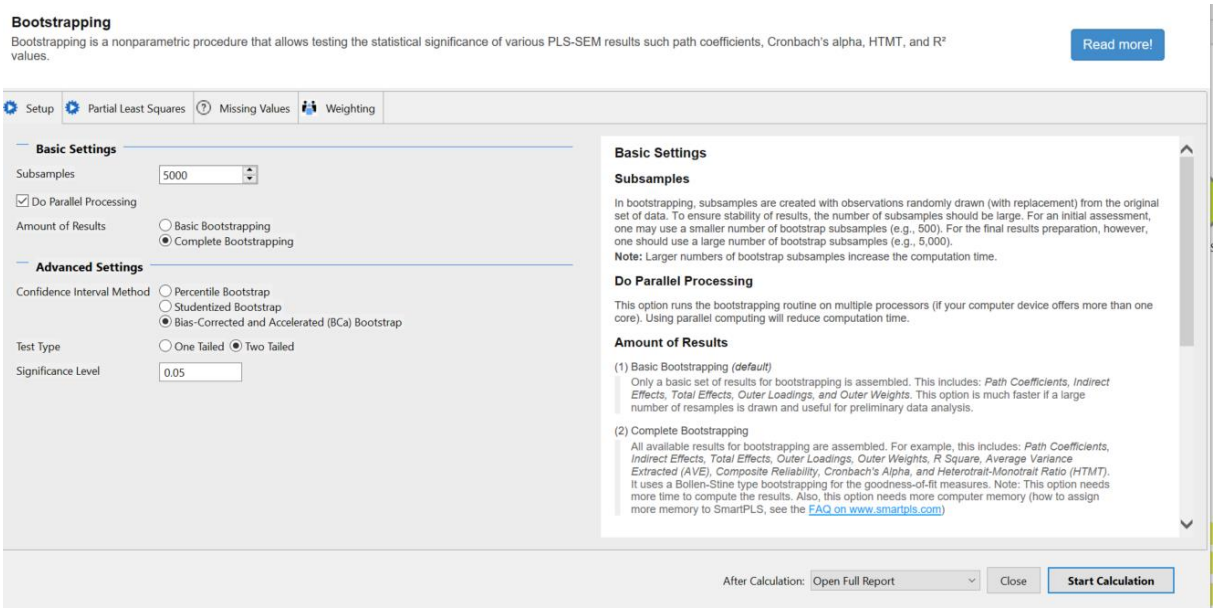
9. Please indicate your school's name (the school names will remain anonymous):
*Note – the school's name will remain anonymous

# APPENDIX B: SMARTPLS PARAMETERS

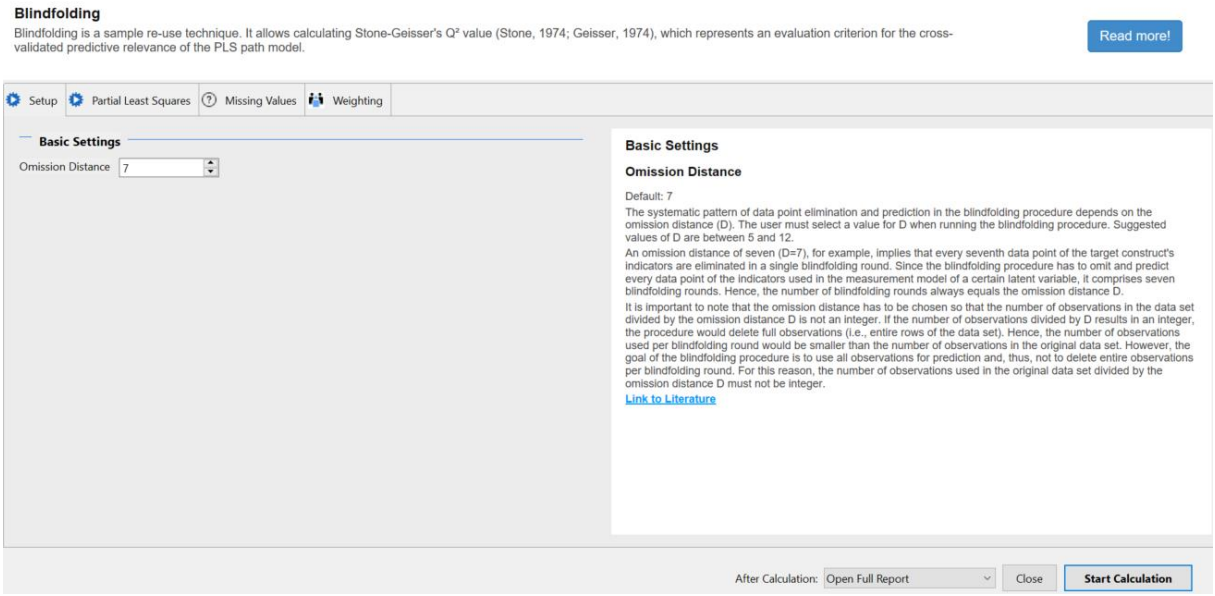
## PLS Algorithm

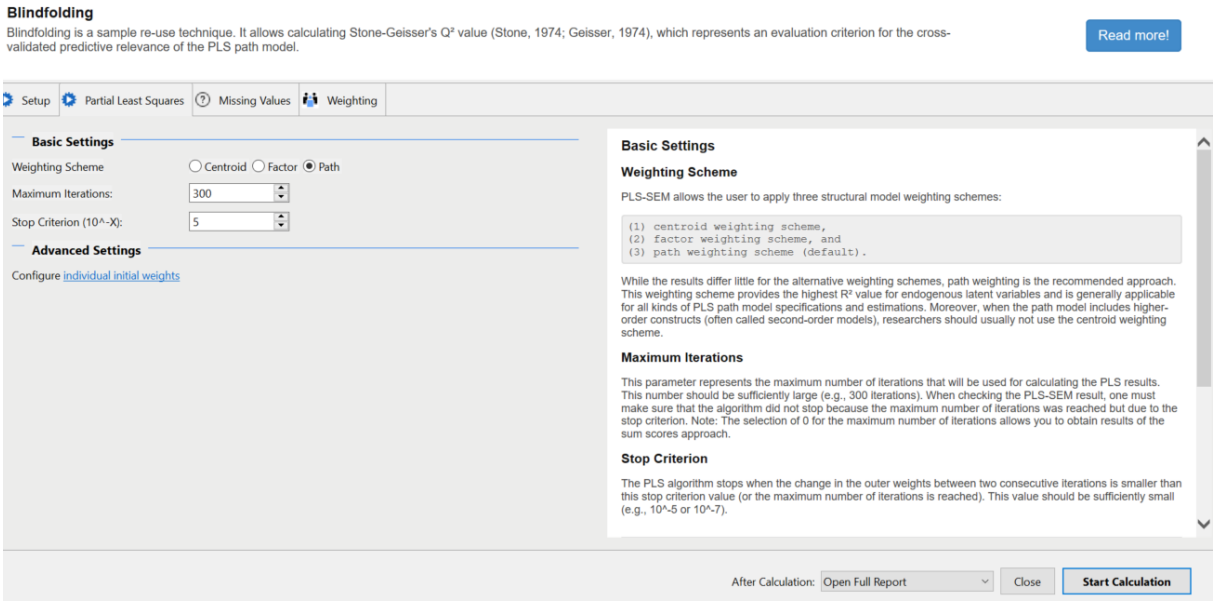



## Bootstrapping



# Blindfolding



# APPENDIX C: IRB APPROVAL AND CONSENT LETTER

## CONSENT LETTER

Purpose and description of the study

Dear Faculty or Staff Member:

You are invited to participate in a research study: Knowledge Management in Higher Education: Effectiveness, Success Factors, and organizational performance. This is a research project being conducted by Armel Djangone, a doctoral candidate in Information Systems, at Dakota State University. The purpose of the dissertation research is to examine the correlation between organizational leadership, cultural behaviors, and knowledge management effectiveness in the context of Higher Education Institution (HEI).

We are inviting you to participate in this research because you are a Faculty Member, Program Chair/Coordinator, Assistant Director, Director, Associate Dean, Dean, Associate Vice-President, Associate Provost, Manager, Senior Manager, or hold another position within the school, and we would like your opinion.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time.

Your responses to the survey will remain confidential. We will not collect identifying information such as your name, email address, or IP address. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only and may be shared with SurveyMonkey representatives.

It will take 10-15 minutes to complete.

This study has been approved by the Dakota State University Institutional Review Board. The Approval number is 2020-19-7. If you have any questions about the research study, please contact the Dakota State Institutional Review Board staff at 605-256-5038.

Project Director: El-Gayar, Omar, PhD

Student Investigator: Armel Djangone

Email address: Omar.El-Gayar@dsu.edu

Phone #: 605-256-5025

# IRB APPROVAL

Dakota State University Institutional Review Board

DAKOTA STATE UNIVERSITY
605.256.5038 / dsu.edu

Exempt Determination

**To:** Armel Djangone
**Date:** May 5, 2020
**Project Title:** Knowledge Management in Higher Education: Effectiveness, Success Factors and Organizational Performance
**Approval #:** 2020-19-7

Dear Investigator:

The Dakota State University IRB has reviewed the submission for your project noted above on May 5, 2020 including the DSU and HACC consents (which include your invitation to participate), and your survey tool. As a result, your project has been determined to fall under an exempt category, in accordance with federal regulations that govern the protection of human subjects in research as described in 45 CFR 46.104 (d)(2)(ii). The research activities are applicable to the "exempt" category conditions as stated below:

> **(2)** Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if **(ii)** Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation;

While your project remains exempt from review, your research must be conducted according to the final (most recent) plan reviewed and determined exempt by the DSU IRB. You must notify the IRB of:

- Any changes to your research plan including any information provided in the application and/or other documents submitted;
- Any unexpected or adverse event that occurs in relation to your research project; and
- A notice of closure once all project activities have concluded, **prior to 364 days from the date of approval**.

If you have any questions regarding this determination or during the course of your study, please contact us at 605-256-5038 or irb@dsu.edu; we are happy to provide guidance as needed.

Yours truly,

Dorine Bennett

Dorine Bennett, Vice-Chair
DSU Institutional Review Board

# APPENDIX D: PERMISSION LETTERS FOR USING THE INSTRUMENT

## Permission letter:

## Multifactor Leadership Questionnaire (MLQ)



**Multifactor Leadership Questionnaire™**

**Instrument (Leader and Rater Form)**

**and Scoring Guide**
**(Form 5X-Short)**

**by Bruce Avolio and Bernard Bass**

Published by Mind Garden, Inc.

info@mindgarden.com
www.mindgarden.com

**Permission letter:**

**Denison Organizational Culture Survey Instrument**

Hi Armel,

Thank you for the information and signed Terms of Use. You now have Denison Consulting's permission to use the Denison Organizational Culture Survey for research purposes. The items and other details are included in the attached excel file, in case you have a need for them. Let me know if you have any questions.

Best,
Michael

**Michael Schwendeman**
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Ann Arbor, MI 48104
www.linkedin.com/in/michael-schwendeman


*It's your culture. You can change it.*