School As Learning Organisations: The Influence of Educational Leadership, Organisational Knowledge Circulation, and School Culture Over Teachers' Job Satisfaction in Vietnamese K-12 Schools

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Anh-Duc Hoang

Master in Management, Maastricht University

ORCID 0000-0002-0862-6724

The Business School

College of Business and Law

RMIT University

Vietnam

May 2024

Declarations

I certify that except where due acknowledgement has been made, this research is that of the author alone; the content of this research submission is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

In addition, I certify that this submission contains no material previously submitted for award of any qualification at any other university or institution, unless approved for a joint-award with another institution, and acknowledge that no part of this work will, in the future, be used in a submission in my name, for any other qualification in any university or other tertiary institution without the prior approval of the University, and where applicable, any partner institution responsible for the joint-award of this degree.

I acknowledge that the copyright of any published works contained within this thesis resides with the copyright holder(s) of those works.

I give permission for the digital version of my research submission to be made available on the web, via the University's digital research repository, unless permission has been granted by the University to restrict access for a period of time.

Anh-Duc Hoang, 18 May 2024.

Acknowledgements

In embarking on this academic journey, I find myself humbled and profoundly grateful for the invaluable guidance, care, and support I have received from a multitude of individuals who have contributed to the realization of this doctoral thesis.

Firstly, I extend my most profound appreciation to my esteemed supervisors, Dr. Seng Kiat Kok and Dr. Greeni Maheshwari, under the guidance of Prof. Robert McClelland, as well as the dedicated feedback from examiners through many rounds. Their unwavering dedication, insightful feedback, and endless encouragement have been instrumental in shaping the trajectory of this research. Their collective wisdom, patience, and mentorship have not only enriched the scholarly aspects of this thesis but have also been a source of inspiration throughout this challenging journey.

To my dearest family, your steadfast support has been my anchor. My heartfelt thanks to my loving wife, Hoang Giang Quynh Anh, whose unwavering belief in my abilities sustained me through the highs and lows of this endeavour. To my dad, Mr. Hoang Ngoc Ca, whose learning has been cancelled due to the Vietnam war; my mom, Mrs. Nguyen Thi Dao, who never stood a chance to finish grade 8; my father-in-law, Mr. Hoang Van Viet; and my mother-in-law, Mrs. Giang Thi Kim Anh, your sacrifices, encouragement, and love have been the bedrock of my academic pursuits. To my children, Hoang An (Kiwi) and Hoang Lan (Penguin), your patience and understanding during moments of my absence and dedication to this work have been my greatest motivation.

I would like to acknowledge the support I have received for my research through the provision of RMIT University's Scholarship, as well as the tremendous effort and dedication of Prof. Nguyen Xuan Thu, who put the first steppingstone for RMIT University in Vietnam in 2000.

I would like to extend my gratitude to Prof. Barbara Oakley and Prof. Tony Wager for their continuous support in my journey to become an educator and educational strategist. Your belief in my capabilities has been a driving force behind my academic endeavours.

I would also like to acknowledge the collaborative efforts of my teammates at EdLab Asia, the Canadian International School Lao Cai, the Sky-Line Educational System, the International Centre for Interdisciplinary Education (ICISE), the Vietnam Symposium of Development (VSOD), the Australia-Vietnam Leadership Dialogue (AVLD), the British Council, as well as my students, whose support in various tasks allowed me to focus on the completion of this study. The camaraderie and teamwork we shared enriched my overall academic experience.

Additionally, I extend my sincere appreciation for the support of colleagues from the Vietnam Ministry of Education and Training, the Vietnam National Institution of Educational Sciences, the Vietnam Journal of Education, Hanoi National University of Education, and school leaders in Hanoi and Ho Chi Minh City, who played a crucial role in the data collection process. Their dedication and commitment significantly contributed to the robustness of this research. I am grateful to the participants whose willingness to share their insights and experiences formed the bedrock of this study. Their collaborative spirit and unwavering commitment to the advancement of knowledge have left an indelible mark on the quality and depth of this research.

Last but not least, I would like to acknowledge the contributions of external examiners; Ms. Van Hoang – the assistant to Dr. Seng Kok, and other RMIT staff who always supported me along this meaningful journey.

In expressing my gratitude, I am acutely aware that words can only partially capture the depth of my appreciation. To each individual who contributed to this academic journey, your impact is immeasurable, and I am forever grateful for your role in this significant chapter of my life.

Table of Contents

List of Figures

List of Tables

List of Acronyms

A&HCI:	Art and Humanity Citation Index
AC:	Affiliative Collegiality
AITSL:	The Australian Professional Standards for Teachers
ANOVA:	Analysis of Variance
AVE:	Average Variance Extracted
BLCHEAN:	Business & Law College Human Ethics Advisory Network
BRDP:	Build relationships and develop people
BTE:	Bettering teaching environment
CLV:	Communicating a learning vision
CMV:	Common Method Variance
CPCI-S:	Conference Proceedings Citation Index – Science
CPCI-SSH:	Conference Proceedings Citation Index – Social Science and Humanity
CR:	Composite Reliability
CVPAT:	Cross-validated Predictive Ability Test
DOSP:	Develop the organisation to support desired practices
ESCI:	Emerging Source of Citation Index
HTMT:	Heterotrait-Monotrait Ratio
IIC:	Initiating curricular and instructional improvement
IIP:	Improve the instructional program
LGBT:	Lesbian, Gay, Bisexual, Transgender
OECD:	Organisation for Economic Cooperation and Development
PC:	Professional Collaboration

PLS-SEM:	Partial Least Squares Structural Equation Modelling
PISCF:	Participant Information Statement and Consent Form
PRISMA:	Preferred Reporting Items for Systematic Review and Meta-Analyses
Q^2:	Construct Cross-validated Redundancy
R^2:	Coefficient of Determination
SCI:	Science Citation Index
SD:	Set directions
SDE:	Self-determination and efficacy
SECI:	Socialisation, Externalisation, Combination, Internalisation
SEM:	Structure Equation Modelling
SET:	Social Exchange Theory
SSCI:	Social Science Citation Index
STPD:	Supporting teacher professional development
TJS:	Teachers' Job Satisfaction
TUNA:	Turbulent, Uncertain, Novel, Ambiguous
USA:	The United State of America
VIF:	Variance Inflation Factor
VUCA:	Volatility, Uncertainty, Complexity, Ambiguity
WOS:	Web of Science

List of Supporting Documents

Abstract

The chaotic situation of today's VUCA (volatility, uncertainty, complexity, and ambiguity) and TUNA (Turbulent, Uncertain, Novel, Ambiguous) world is bringing more and more active and passive reforms, including positive and negative aspects, that reform business models. Educational institutions are not exceptional. Regarding the nature of educational institutions' operation in today's rapidly changing context, school leaders also need to raise concerns similar to those of business managers from other industries: "*How do their institutions continuously renovate to adapt to tomorrow's world?"* Thus, based on organisational learning theories, this project aims to establish a framework to evaluate educational leadership's influence on the organisational knowledge circulation effectiveness within the K-12 education context. The study combines a structured literature review, bibliometrics analysis, and high-order structural equation model analysis on the survey for teachers among Vietnamese public and private K-12 schools. First, this project proposed and validated a toolset to measure educational leadership as a combination of principalship and teacher leadership. Second, it revealed new insights about the impacts of educational leadership, knowledge circulation, and school culture on teachers' job satisfaction. The project also offers insights into teachers' professional development activities across various school types and grade levels in Vietnam, which contribute to further continuous renovation of Vietnamese K-12 schools, and diversify the corpus of educational leadership studies. This project's results extended the applications of organisational learning theories in K-12 education, as well as can be adopted to establish further knowledge management frameworks in other settings such as higher education or vocational education.

Keywords: learning organisation, educational leadership, knowledge circulation, school culture, school as learning organisation, K-12 education, Vietnam.

Chapter 1. Introduction

1.1 Introduction

This chapter includes the overall background of this research project and its research problems. Thereafter, it highlights the research aims, research objectives and research questions, together with the proposed methodology and research methods towards those targets. Besides, this chapter also determines the significance of this research project. Lastly, this chapter provides an outline of this thesis' structure.

1.2 Research Background

The Additivity of Educational Leadership

The interrelation between leadership and knowledge management is not a novel topic, as it has been initiated since the 1980s and is continuously investigated by scholars worldwide (Berry, 2019). The global waves of technological revolution and cultural integration generate unprecedented challenges and opportunities for all kinds of businesses, whether they are commercial or non-commercial, public or private organisations (Hallinger, 1998; Corlu et al., 2014). Especially in developing regions that previously attracted overseas investment and technology, such as Southeast Asia, the capability and salary gaps between their workforce and developed countries are no longer significant (Stewart, 1996; Duong et al., 2021). The pressure of losing that competition might be one of the leading causes, which leads to the changing of parents' and students' demands and triggers educational transformation day by day as a consequence of "a flat world" (Schleicher, 2015). On the one hand, the supply-demand in the education sector is not as easy to realise in a short time as in other industries, so school managers must face a longer lag time to notice their shortages. On the other hand, the school's efforts to change also need long

periods to be appraised by the market or even by their internal stakeholders. Therefore, transforming a school into a learning organisation is a fundamental approach for the institution to absorb, create, and utilise knowledge assets to tackle the education industry's unique nature. By becoming a learning organisation, schools can adapt to the rapidly changing demands of the education industry. According to Gurr (2017), principal leadership, or in short, 'principalship' contributes to students' success. Thus, principalship that fosters schools as learning organisations allows schools to continuously improve and innovate their teaching methods, curriculum, and overall educational experience for students. Additionally, a learning organisation fosters a culture of collaboration and knowledge sharing among teachers and staff, leading to a more effective and efficient school system.

The demand for educational solutions also shifts the education landmark out of the traditional playground where formal education is no longer the only choice. In contrast, with the slow changes in national education systems, parents' and students' expectations are moving closer to life-long learning capability rather than getting high results in standard tests (Hallinger, 2000). However, regarding the motto of organisations toward innovation, the definition of organisational readiness and its mechanism under leadership influence have not been clearly stated. The literature on this topic primarily focuses on technical empirical issues, such as managing information systems, rather than organisational issues, which play crucial roles in shaping organisational structure, vision, and mission (Alavi et al., 2005). Typically, it often takes 4~5 years to educate a teacher and an additional 2~3 years to ensure that they can deliver quality education. Thus, the lag between teacher resource development and the actual needs should not be limited to pedagogical schools' duty only. This concern attracts scholars in education and organisational behaviour, who consider

schools as learning organisations (Eaker et al., 2002; Law, 1999). These scholars argued that schools should not only focus on pedagogical training but also on developing the necessary skills and knowledge in managing information systems. They believed that by incorporating information systems management into the curriculum, schools can better align their organisational structure, vision, and mission with the ever-evolving technological landscape. Transforming schools as learning organisations would ensure that teachers are equipped with the tangible and intangible resources and conditions that they need to deliver quality education effectively.

The Rising Demand of Developing Organisational Practices within Education Contexts

From a very early age, the importance of continuous professional development (CPD) for teachers has been recognised. Scholars investigated how schools should and can empower their teachers through CPD activities to elevate the overall quality of education. Under the pressure of this VUCA world, the concept of rounded education encourages the further goals of closing educational equity and equality (Hoang, 2019) rather than focusing on academic results only. Thus, the involvement of various stakeholders in the innovation of schools is crucial toward overall educational targets. Such movements are influenced by the organisational vision, culture, and structure (Dalin, 2004). From a broader perspective, leadership capabilities influence organisational practices and knowledge circulation effectiveness, favouring the successful school's general education qualities (Stewart & Ruckdeschel, 1998). Such holistic leadership capabilities include the ability to inspire and motivate teachers, foster collaboration among staff members, and create a positive school climate. Additionally, effective leaders are able to adapt to changing educational trends and technologies, ensuring that their schools remain relevant and responsive to the needs of students.

Developing schools as learning organisations also helps to equip the school and teachers with intrinsic motivations toward larger education reforms (Hoang et al., 2020). By fostering a culture of continuous learning and professional development, school leaders can empower their teachers to stay updated with the latest research and best practices in the education field (Duong et al., 2021). This not only enhances the quality of instruction but also encourages teachers to embrace innovation and experimentation in their classrooms. Ultimately, this contributes to the overall success of the school and its ability to meet the evolving needs of students in a rapidly changing world (Hallinger, 2000).

Overall, there is a demand to investigate the influence of educational leadership over knowledge management related factors within the K–12 school context. Research in this area can provide valuable insights into how school leaders can effectively support their teachers in staying current and innovative. By understanding the impact of educational leadership on knowledge management, schools can better prepare their educators to meet the challenges of modern education.

1.3 Statement of the Problem

Globalisation and Challenges for School Innovations

The recent waves of globalisation in past decades generated significant impacts on current education reforms across the globe. Many Southeast Asian countries implemented systematic changes from the national level to the school level, causing novel pressures on school leaders (Chapman, 2000). These pressures include the need to adapt to new teaching methodologies, integrate technology into classrooms, and address the increasing diversity of student populations. Additionally, educational leaders in emerging countries must navigate the challenges of limited

resources, political instability, and cultural barriers in order to effectively lead their schools towards success. However, the improper internal capabilities of schools led their organisational reform to the dilemma between tackling daily ad-hoc and ensuring their long-term vision. Without proper internal capabilities, schools may struggle to balance the immediate needs of their students and staff with their long-term goals. This can hinder their ability to implement meaningful organizational reforms and hinder progress towards their vision for success. As a result, educational leaders must find ways to address these competing demands while also fostering a culture of continuous improvement and innovation within their schools.

From a very early age, scholars have expressed their interest in those organisational development issues of K-12 schools (e.g. Fullan, 1995). The contemporary complex challenges of most emerging economies are technology and culture integration (Hallinger, 1998). These challenges require educational leaders to not only navigate the ever-changing landscape of technology but also to ensure that the cultural values and norms of their communities are respected and integrated into their schools' practices. This requires a deep understanding of both the local context and global trends in education, as well as the ability to effectively communicate and collaborate with stakeholders from diverse backgrounds.

In terms of policy development, Ramesh & Asher (2000) stated that social innovation is not yet playing a significant role in the economy, as commercial and trading activities. However, they argued that social innovation has the potential to greatly impact educational systems by addressing societal challenges and promoting inclusive practices. Therefore, it is crucial for educational

leaders to recognise the importance of incorporating social innovation into their policies and practices in order to create more equitable and sustainable learning environments.

Various Challenges for Collective Innovations in Schools from Emerging Economies

Also, even though top country leaders in Southeast Asia tried different approaches to resolve that innovation challenge, the specific outcomes were still under-expected, notably in school reforming agendas (Hallinger, 1998). This highlights the need for continuous research and collaboration among educational leaders to identify effective strategies for implementing social innovation in schools. By sharing best practices and learning from both successful and unsuccessful attempts, educational systems can adapt and improve their approaches to meet the evolving needs of students and society. Additionally, it is essential for policymakers to allocate resources and provide support for educators to implement innovative practices, ensuring that all students have equal access to quality education.

Regarding cultural integration, despite the yearning of emerging countries to learn educational best practices from developed countries, the differences in culture hinder them from effective implementation and improvement with well-established models from Western contexts (Hallinger, 2000). These emerging economies may need to strike a balance between adopting successful practices from developed countries and adapting them to their own cultural context. This requires a comprehensive understanding of their own cultural values, traditions, and educational needs, allowing them to tailor educational approaches that are both effective and culturally relevant (Renzulli et al., 2011). Besides the schools' culture, regional and social factors also play a significant role in shaping educational approaches. For example, in rural areas where access to

resources and technology may be limited, educational approaches may need to focus on practical skills and hands-on learning. Additionally, socioeconomic factors such as poverty and inequality can impact educational outcomes, requiring targeted interventions to address these disparities (Hoang, 2019). Therefore, it is crucial for emerging economies to consider a holistic approach that takes into account not only cultural factors but also regional and social dynamics in order to ensure the effectiveness of their educational systems.

However, the current initiatives of emerging countries seem to have struggled with the prior traditional characteristics of K-12 school systems, which do not welcome systematic changes (Cheng, 1996). For instance, Thailand's case with the "Thai educational paradox" is still not explainable yet (Fry & Bi, 2013). This paradox refers to the fact that despite high levels of investment in education, Thailand continues to have low educational outcomes compared to other countries with similar levels of investment. This suggests that there may be underlying systemic issues within the Thai educational system that are hindering progress. To address this, emerging countries like Thailand should conduct thorough research and analysis to identify the root causes of these disparities and implement targeted interventions that address them effectively.

Also, in many emerging economies, the tremendous amount of government spending and profound changes in legal and educational structures were not successful in boosting educational achievements (Fry & Bi, 2013). This includes inadequate school facilities, insufficient teaching materials, and a lack of technology in classrooms (Pham et al., 2021). In the long-term, the lack of resources and infrastructure hinders the development of a well-educated and skilled workforce. In the short-term, also contributed to limited access to quality education, which ultimately perpetuates

inequality and limits opportunities for students, as well as educators' access to quality professional development.

Multifaceted Challenges of Vietnamese K-12 Schools under the recent Reform

Regarding the case of Vietnam, education is always among one of the nation's top priorities, with annual government expenditure of around 5.7 per cent of GDP (World Bank, 2019). The establishment of Resolution No. 29-NQ/TW of November 04, 2013, on "fundamental and comprehensive innovation in education" triggered educational reforms across the country (Duong et al., 2021). These reforms aimed to address the challenges in the education system and improve access to quality education for all students. However, despite these efforts, there are still persistent issues, such as inadequate infrastructure and resources in rural areas, that further hinder equal access to education. Also, there are notable limitations and ineffectiveness during the implementation processes. For instance, the new national general education program, which was approved by the National Assembly in 2018 and officially launched in 2020 for grades 1 and grade 6, received notable criticism about the inconsistent and improper quality of teacher competencies regarding both national, regional, and school levels. In addition, under the influence of globalisation, there are more and more notable gaps between public and private education, especially after Decree No. 86 in 2018 (The Government of Vietnam, 2018), which boosted foreign collaboration and investment in education. These gaps have led to disparities in resources, curriculum, and teaching methods between public and private schools. Furthermore, the increased foreign collaboration and investment have also brought about challenges in ensuring the quality and relevance of education in line with national standards. On one hand, the private sector brought up new insights, lessons, and demands to Vietnamese parents, educators, educational managers,

and policymakers (Kataoka et al., 2020). On the other hand, private schools attracted teachers from public schools with higher salaries and benefits. This has resulted in a shortage of qualified teachers in public schools, further exacerbating the disparities in educational quality between the two sectors.

Additionally, the competition between public and private schools for resources and students has created a divide that can hinder collaboration and cooperation between the two sectors in improving overall education standards. For instance, one example is teacher's CPD across public and private sectors. Even though the Vietnam Ministry of Education and Training (MOET) requires each teacher to attend at least 120 hours of CPD a year, public school teachers only take an average of 48.23 hours, while teachers from private schools (that deliver national curriculum) and international schools take 50.54 and 81.07 hours of CPR per year (Phan et al., 2020). This discrepancy in CPD hours between public and private school teachers highlights the unequal access to resources and opportunities for professional development. This divide can lead to disparities in teaching quality and hinder the overall improvement of education standards in Vietnam. Additionally, it may create a lack of understanding and collaboration between teachers from different sectors, limiting the potential for sharing best practices and innovative teaching methods (Duong et al., 2021).

Recently, the turbulent situation of COVID-19 also revealed several weaknesses in Vietnamese schools' operational structures (Hoang, 2020). In a short period, Vietnamese teachers transformed themselves to reskill and upskill their ICT competencies to adapt to the novel consequences of COVID-19. This sudden shift highlighted the need for continuous professional development and

training opportunities for teachers to effectively integrate technology into their teaching practices. Furthermore, it emphasised the importance of establishing a robust infrastructure and support system to ensure equitable access to online learning resources for all students, regardless of their socioeconomic background (Pham et al., 2021). However, the majority of teachers have been motivated to learn new ICT tools and techniques by their peers rather than by school leaders (Pham et al., 2021). This consequence suggests that peer collaboration and sharing of best practices play a crucial role in fostering technological advancement among teachers. Additionally, it raises the importance of creating a supportive and collaborative culture within schools, where teachers feel comfortable seeking guidance and learning from their colleagues.

The study by Pham et al. (2021) also revealed two notable phenomena about teachers' satisfaction and online teaching effectiveness during this time. First, Vietnamese teachers' perceived support from teacher unions and other stakeholders does increase their satisfaction but has no influence on online teaching effectiveness. Second, teachers' new ICT capabilities can boost online teaching effectiveness but do not improve Vietnamese teachers' satisfaction during the pandemic. These findings suggest that while support from teacher unions and stakeholders is important for teachers' overall satisfaction, it may not directly impact their effectiveness in online teaching. Additionally, the study highlights the significance of developing ICT skills to enhance online teaching effectiveness, but it may not necessarily contribute to increased satisfaction among Vietnamese teachers during the pandemic. Indeed, those findings might be limited to the unique circumstances of the COVID-19 pandemic only. However, they also emphasise a genuine concern about organisational knowledge sharing and teachers' satisfaction in Vietnam. However, further research

is needed to determine if these findings hold true in different contexts or during non-pandemic times.

Moreover, there is a persistence gap in most education systems, and Vietnam is not an exceptional case: No matter how well we develop our pedagogical institutions, teachers are the output of 'older systems', but they must take the responsibility to educate 'more novel' generations, who will create and live in future worlds that are not existing yet (Duong et al., 2021). This highlights the importance of continuous professional development for teachers in Vietnam to ensure they are equipped with the necessary skills and knowledge to adapt to changing educational landscapes. Additionally, it is crucial for policymakers and education leaders to prioritise strategies that promote collaboration and knowledge sharing among teachers, as this can contribute to overall job satisfaction and improve student outcomes. Therefore, teachers must renovate themselves continuously. How can Vietnamese schools be able to manage their knowledge management processes, trigger creativity and innovation, and construct a learning culture across their faculties? How can the country sustain its education system with those unparalleled tracks of the railway when teachers must ensure a better education for children, but they are not able to secure a sustainable learning environment for themselves?

Continuing Debates on Knowledge Management Theories and their Applications in K-12 Education Context

Regarding the above concern of knowledge circulation and circulation within education institutions, there are also essential debates within the knowledge base about schools as learning organisations. Complexity theory (CT), knowledge management (KM), and organisational

learning (OL) or learning organisation (LO) are complementary and co-dependent terminologies which study decentralised and non-hierarchical networks within organisations (Swieringa & Wierdsma, 1992). These theories emphasise the importance of creating a culture of continuous learning and knowledge sharing within educational institutions. By implementing these concepts, schools can foster an environment where all of their members have access to quality education and resources, regardless of their socioeconomic background. Additionally, these theories also highlight the need for collaboration and cooperation among stakeholders in order to create sustainable learning environments that benefit all students, teaching and non-teaching staff. Complexity theory emphasises the transition of organisational learning and development through complex adaptive and non-linear systems under the influence of distributed leadership (Cunningham, 2000). To ensure survival and continuous growth, an organisation must generate both tacit and explicit know-how (Örtenblad, 2002), as well as put those knowledge assets into never-ending revision loops (Stacey et al. 2000). This requires a shift from traditional top-down management to a more collaborative and participatory approach, where individuals at all levels of the organization are empowered to contribute their knowledge and expertise.

Additionally, it is important for organisations to create a culture that encourages experimentation, learning from failures, and adapting to changing environments in order to thrive in complex and uncertain conditions. Such internal revolution can be triggered by distributed power (Snell, 2002), which allows decision-making authority to be shared among individuals throughout the organization, enabling a more agile and responsive approach to problem-solving. This decentralization of power also fosters a sense of ownership and accountability among employees, leading to increased motivation and innovation. Ultimately, organizations that embrace distributed

power are better equipped to navigate the complexities and uncertainties of today's VUCA and/or TUNA world. Rather than a commanding system, those agile internal structures allow the organisation to act on both seen and unseen challenges (Hoe, 2019). By empowering individuals at all levels of the organization, decision-making becomes more inclusive and diverse, leading to a wider range of perspectives and ideas. This not only enhances problem-solving capabilities but also promotes a culture of continuous learning and growth. Additionally, distributed power enables faster decision-making as it eliminates the need for hierarchical approval processes, allowing organisations to adapt quickly to continuously changing conditions and seize new opportunities. Therefore, the organisation can be flexible, creative, and innovative, regardless of the internal and external turbulent changes (Örtenblad, 2004).

Even though Complexity theory offers meaningful challenges for school leadership and management, there are still several undeniable limitations. For instance, there is a limitation that implementing distributed power structures can be challenging and require significant changes to existing hierarchical systems (Printy & Liu, 2021). This can result in resistance from employees who may be accustomed to traditional top-down decision-making. Additionally, decentralised power can also lead to coordination and communication challenges, as decision-making authority may be spread across multiple individuals or teams (Chapman, 2000). However, despite these limitations, the potential benefits of embracing distributed power in organizations make it a worthwhile consideration for leaders and managers.

For instance, one of the most significant controversial issues in complexity theory in the past decades is the clarity of its own notation. Capra (2007) considered Complexity theory to be more

like an ideology rather than a scientific theory supported by empirical evidence. (Sotolongo et al., 2007) revisited the proposition of Capra (2007) and suggested several dialogues about Complexity theory's ontology and deontology. These dialogues highlight the ongoing debate surrounding the legitimacy and practicality of complexity theory in organisational settings. Despite these criticisms, complexity theory still offers valuable insights into understanding and managing complex systems within organisations. It encourages leaders and managers to embrace a more holistic and interconnected approach, which can lead to improved decision-making and adaptability in an ever-changing business environment.

Since the 1990s, Japanese firms have used an approach initiated by Nonaka (1990) to determine knowledge circulation and circulation effectiveness, which can be considered vital puzzles to complement the big picture of complexity theory. However, the SECI model of Nonaka (1990) has been criticised in that it represents the case of Japan only (Hong, 2012). Also, there are still opportunities to discover the applications of the SECI model to capture the complexities of knowledge circulation in different organisational settings. Additionally, some scholars have suggested that a more nuanced understanding of knowledge creation and circulation is needed to account for the diverse range of factors that influence organisational learning and innovation (Hong, 2012 ; Damkuvienė et al., 2019).

Moreover, to date, in the larger pool of literature from both developed and emerging economies across the globe, there is a lack of research about schools as learning organisations (Fullan, 1995; Silins & Mulford, 2004; Gil et al., 2019). Regularly, people consider schools as learning places for children rather than teachers and school managers, who are also learning day by day (Eaker &

DuFour, 2009). This gap in research highlights the need for further exploration into the concept of schools as learning organisations and the role of all stakeholders in the learning process (OECD, 2016). Understanding how knowledge is created and shared within educational institutions can lead to more effective strategies for fostering continuous improvement and innovation in schools (Dalin, 2004). Additionally, recognizing the importance of ongoing learning for teachers and school managers can contribute to a more holistic approach to education that benefits both students and educators alike (Ramseook-Munhurrun & Nundlall, 2013).

In addition, literature on educational leadership often focuses on several managerial facets of principals, which are explicit KPIs, with limited connections to intangible knowledge management issues (Harris & Tassell, 2005). However, educators' demand and motivation toward constructing themselves as lifelong learners are requirements for the school's growth and for students' benefit (Pan & Chen, 2020). By continuously engaging in professional development and staying updated with the latest research and teaching strategies, teachers and school managers can enhance their instructional practices and create a dynamic learning environment (Liu et al., 2021). This ongoing learning also allows educators to adapt to the changing needs of students, foster innovation, and cultivate a culture of continuous improvement within the school community (Pan & Chen, 2020). Ultimately, investing in ongoing learning for teachers and school managers not only improves student outcomes but also empowers educators to become effective leaders who can drive positive change in education. McCharen et al. (2011) stated that by promoting the school environment and conditions that trigger autocatalysis from teachers, school leaders could advocate for their school as a learning organisation. Falconer et al. (2007) also agreed that, through distributed leadership, principals can establish non-linear structures and supports, which are foundations for the openness,

diversity, and development momentum of the school. These non-linear structures and supports allow for greater collaboration and shared decision-making among educators, leading to a more inclusive and innovative learning environment (Zedan, 2010). Additionally, empowering educators as effective leaders can foster a sense of ownership and commitment to the school's mission, resulting in improved student outcomes and overall school success (Figlio & Loeb, 2011).

Regarding these above gaps in the knowledge base of research on schools as learning organisations, this research project aims to serve as a praxis that complements and connects Complexity theory and the SECI knowledge management model to the field of educational leadership. By combining Complexity theory and the SECI knowledge management model, this research project seeks to provide practical insights and strategies for educational leaders to create and sustain learning organizations. This approach recognizes the dynamic and complex nature of educational environments and emphasizes the importance of knowledge creation, sharing, and utilization in driving continuous improvement. Through this praxis, educators can enhance their leadership skills and effectively navigate the challenges of fostering collaboration, innovation, and inclusivity in schools.

1.4 Research Aims, Objectives and Questions

1.4.1 Research Aims

(1) To establish a framework to evaluate educational leadership’s influence on the organisational knowledge circulation effectiveness within the K-12 education context.

(2) To inform school leaders of pathways to renovate schools as learning organisations.

1.4. 2 Research Objectives

(1) To determine the antecedents of K-12 educational leadership that includes principalship and teacher leadership.

(2) To develop a scale to measure K-12 educational leadership.

(3) To evaluate the influence of K-12 educational leadership over the knowledge circulation effectiveness.

(4) To evaluate the moderation of school culture over the impacts of educational leadership.

(5) To inform policy renovations towards sustainable K-12 educational leadership development.

1.4.3 Research Questions

With the expectation to strengthen the school's knowledge circulation process and support the long-term development of a learning society, this project intends to explore and answer three main questions:

(1) What defines educational leadership within the K-12 education context?

(2) How does educational leadership influence the organisational knowledge circulation effectiveness?

(3) How does school culture affect the influence of educational leadership on teachers' job satisfaction?

(4) What are the differences in teachers' job satisfaction between demographics (gender, level of education, years of experience, grade level of teaching, and school type)?

1.5 Research Scope and Delimitation

The nature of the research combines of both exploratory and explanatory, with the aim of understanding the way knowledge is circulated and utilised on an organisational basis under the influence of leadership within the educational context. Overall, the project can extend the current literature on knowledge management, focusing on leadership's influence over the knowledge circulation process. The project also intends to establish a conceptual framework to evaluate the influence of educational leadership and organisational knowledge circulation. Besides, the research can contribute to exploring the phenomena of educational institutions' learning and growth in the comprehensive international context of high-speed developing education and business environments. The study is delimited within the context of K-12 schools in Vietnam – an emerging market. The research sample comprises teachers from public and private schools in Vietnam. This research uses cluster sampling to select schools and random sampling to select K-12 teachers.

1.6 Contributions

Based on knowledge management (KM) theories, this project aims to establish a framework to evaluate the influence of principalship and teacher leadership on organisational knowledge circulation processes within the Vietnamese K-12 education context. By examining the impact of educational leadership on knowledge circulation, this project seeks to enhance the understanding of how leaders can effectively promote the sharing and dissemination of knowledge within Vietnamese K-12 educational institutions. The validated framework will provide valuable insights for educators and policymakers in designing strategies to foster a culture of knowledge exchange

and innovation in schools, as regards to the perspectives of school leaders and teachers. The adoption of KM in designing this study will explain "why" and "how" the knowledge assets are adopted and circulated. It will also help construct the components of constructive leadership and practices in K-12 schools as learning organisations. Additionally, the study will explore the role of principalship and teacher leadership in creating an environment that encourages collaboration and knowledge sharing among teachers, students, and other stakeholders. By examining the factors that contribute to successful knowledge management implementation, this research aims to provide practical recommendations for leaders to effectively promote a culture of continuous learning and improvement in Vietnamese K-12 educational institutions. The integration between the antecedents, mediators, and moderators of the knowledge circulation process will be analysed through a combination of a structured review of the literature and quantitative data from school managers and teachers who are working in public and private K-12 schools in Vietnam. Besides, incorporating the influence of school leadership and culture through structural equation modelling (SEM), this research will offer insights into how external factors can shape and impact the learning environment in Vietnamese K-12 schools.

Regarding the context of a VUCA world during the globalisation process, this research contributes to filling the gaps in organisational knowledge management, focusing on the education sector. Firstly, the project will consolidate and validate a toolset to measure educational leadership as an aggregation of principalship and teacher leadership in K-12 schools. This toolset will provide valuable insights into the effectiveness of leadership practices in promoting a culture of learning. In other words, the toolset will support to determine potential challenges or barriers that educational leaders may face when trying to promote a culture of continuous learning and collaboration among educators.

Secondly, the project will propose a conceptual framework to evaluate educational leadership's influence on the knowledge circulation process within the K-12 education context. By understanding how educational leadership impacts knowledge circulation, the project aims to identify areas for improvement and develop strategies to enhance knowledge sharing and collaboration among educators. This research will contribute to the overall goal of improving educational outcomes by leveraging effective leadership practices and fostering a culture of continuous learning in schools.

Finally, the study will provide empirical know-how about the differences in educational leadership among the variety of contexts of public and private schools in Vietnam. Also, the study will emphasise the impacts of principalship, teachers' self-leadership and teachers' influence over their peers on knowlege sharing practices. Overall, the project will provide a broader view for direct stakeholders like school managers, staff, students, and in-direct stakeholders like parents or investors who want to elevate school operations' effectiveness and efficiency toward sustainable innovation.

1.7 Structure of the Thesis

This thesis consists of six chapters. The first chapter offered an overview of the research background, statements of the problems, research aims, objectives and questions. Also, this chapter included the research scope and partially explained the theoretical and practical contributions of this research.

The second chapter provides comprehensive perspectives on the development of research on educational leadership, schools as learning organisations, school culture, and teachers' job satisfaction. On the one hand, this chapter figured out the notable focused areas and trajectories of

those research topics across time. On the other hand, it also determined the current gaps in those knowledge bases, and proposed the conceptual framework and research hypotheses.

The third chapter explains the philosophical perspectives of this project, as well as how those philosophies shaped the triangulated research paradigm of this study. Within the methods section, the detailed approaches are also discussed, including research population, research instrument, sampling method, sampling technique, data cleaning and analysis techniques. The results of descriptive and inferential data analysis are examined within the fourth and the fifth chapters, accordingly. The sixth chapter explains the findings from the two above chapters, discusses research aims, objectives, questions, and hypotheses, and concludes the theoretical and practical contributions of the research. Also, this chapter figures out research limitations and suggests pathways for future research.

Chapter 2. Literature Review

2.1 Introduction

Regarding the purpose of proposing a new theoretical framework for educational leadership, organisational knowledge circulation, and teachers' job satisfaction, the researcher conducted six comprehensive systematic literature reviews, using bibliometrics techniques (Garfield, 2004). This chapter begins with two snapshots about (i) the development trends in leadership and educational leadership research; and (ii) contemporary efforts in measuring educational leadership. Thereafter, prior literature on schools as learning organisations and organisational culture is synthesised. The trajectory of research on teachers' job satisfaction is presented before generating the conceptual framework and hypotheses. To enhance the quality of this project's findings, the researcher limits search results to journal articles from the Clarivate Web of Science database only, as this is the most reputable scientific database (Singh et al., 2021). To ensure the suitability of articles within the literature pool, this study follows the PRISMA flow (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Moher et al., 2011) to identify, screen, eliminate, and select articles (Figure 1). In total, the researcher conducted six bibliometrics reviews over 1,642 journal articles (Table 1). Finally, this chapter came up with four major literature gaps, discussed nine hypotheses and proposed a conceptual framework.

The initial movements of this research focus on reviewing existing literature on the field. Pittaway *et al.* (2014) highlighted seven fundamentals which ensure a quality systematic review: *transparency, clarity, integration, focus, equality, accessibility, and coverage*. Regarding the source of literature, this research targets journal articles indexed in the Web of Science database only, regarding the time span of 1956 to 2022. In other words, the researchers consider all available

sources from high-quality journals. By limiting the scope to journal articles indexed in the Web of Science database, the researchers aim to ensure that they are accessing reliable and reputable sources. This approach allows them to gather comprehensive and up-to-date information from a wide range of disciplines within their chosen time frame.

Bibliometric analyses provide a quantitative assessment of the selected documents, allowing researchers to identify key trends, patterns, and gaps in the literature (Hallinger, 2020). This approach enhances the validity and rigor of their research findings, enabling them to contribute to existing knowledge in their respective fields. Aligning with the research objectives, the researcher focuses on reviewing literature in the fields of learning organisation, educational leadership, and knowledge management. Specific searching focus, search strings, and information about the total number of 1,642 articles within each cluster have been mentioned in Table 1 (Chapter 2). This systematic approach helps them to build a solid foundation for their research and make informed conclusions based on reliable data.

Besides the transparency of article selection, article elimination transparency is also ensured by adopting the PRISMA statement (Moher et al., 2011). After that, all selected documents are equally treated, using bibliometric analyses to form knowledge bases about research areas (Hallinger & Kulophas, 2020). Overall, bibliometric analyses can narrow down the research scope and shed light on research gaps and trends within targeted research areas. Furthermore, this approach also suggests alternative pathways to form theoretical models, as well as potential ideas for future research.

Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram detailing the procedure to identify and screen homework databases (Adapted from* Moher *et al., 2011).

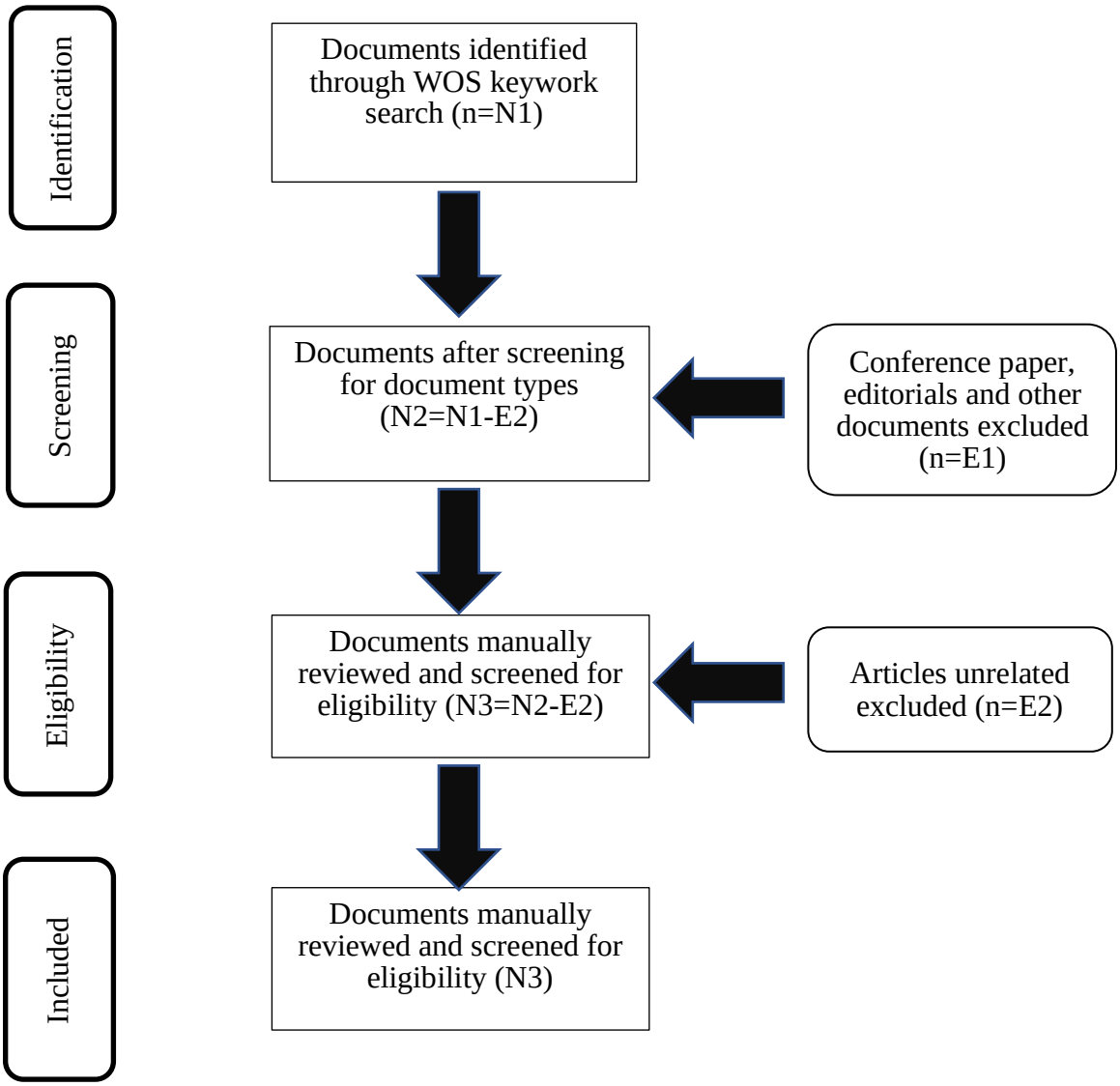


Table 1. Summary of Literature used within Chapter 2 (The author, 2024)

Topic	Boolean terms	N1	N2	N3	Source
Principalship and Teacher leadership	TI = “principalship” OR (“teacher” AND “leadership”)	193	171	154	Web of Science (10 Dec 2022)
Leadership Measurement Scale	TI = “leadership” AND “measurement”	231	202	193	Web of Science (12 Nov 2022)
Leadership and Knowledge Management	TI = “leadership” AND “knowledge management”	512	492	479	Web of Science (22 Oct 2022)
School as Learning Organisations	TI = "learning" AND "organi*" AND "school"	133	47	43	Web of Science (03 Dec 2022)
School Culture	TI = “school” AND “culture”	91	68	53	Web of Science (03 Jan 2022)
K-12 Teacher’s Job Satisfaction	TI = (“teacher” AND “satisfaction”) AND TS = (NOT “higher education” OR NOT “vocational”)	1,212	909	720	Web of Science (19 Oct 2022)
Total		***2,372***	***1,889***	***1,642***	
All search results are limited to English articles indexed in SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC.					

The above datasets of literature have been analysed using VOS Viewer (version 1.16.17) (van Eck & Waltman, 2007) and R (version 4.2.0). The development trajectory, as well as the research gaps of each sub-topic, are explained in the following sub-sections. Thereafter, the researcher came up with a conceptual framework which illustrates the theoretical concerns of this study. The conceptual framework is based on a thorough analysis of the literature and aims to provide a comprehensive understanding of the research topic. It identifies key variables and their relationships, guiding the research design and data collection process.

2.2. Developing Trends in Leadership and Educational Leadership

The movement of research focus on the general concept of leadership.

As regards the aims of this project, first, the researcher highlighted the movement of the general concept of leadership together with changes in macro contexts through decades. These changes help us gain a better understanding of how modern organisations perceive and practice leadership. Also, they triggered similar attention around the development of educational leadership within the context of a fast-changing and more diversified world.

Since the time of Aristotle, the idea of leadership has been a subject of discussion, and academics have been continually redefining it in order to keep up with the ever-evolving times (Kodish, 2006). Despite the fact that the debate over a conventional definition of leadership is a never-ending struggle, the significance of leadership cannot be denied. This is true regardless of whether leadership is viewed as an authority or a spirit (Wallace, 2020). Leadership plays a crucial role in guiding individuals and organizations towards their goals, providing direction, inspiration, and motivation. It encompasses not only the ability to make decisions and take charge but also the

capacity to empower others and foster collaboration. As society continues to evolve, the concept of leadership will likely continue to adapt and encompass new dimensions, reflecting the changing needs and challenges of our times. One of the most important factors that contribute to the success of any organization, whether it be a government, a corporation, or a non-profit organisation, is the leadership (Ribbins & Gronn, 2000). At the same time as it is the driving force that encourages people to work together towards a common goal, it is also the key to unlocking the full potential of any team or oganisation. Effective leadership not only inspires individuals to reach their highest potential but also creates a supportive and inclusive environment where diverse perspectives are valued (Jennings, 1937). By cultivating a culture of trust and open communication, leaders can construct the collective know-how of their team and foster innovation (Pauley & Pauley, 2009). Ultimately, strong leadership is essential for navigating complex challenges and driving sustainable growth in today's rapidly changing world (Hoe, 2019).

The necessity of leadership has only increased in the modern world, which is becoming increasingly volatile, uncertain, complex, and ambiguous. The necessity for good leadership has become more critical than it has ever been before as a result of the emergence of industry, economic, and social changes. In order to successfully negotiate the intricate and ever-shifting terrain of the modern world, leaders need to be able to adapt to new obstacles and opportunities as they appear over time (Shava, 2018). To develop a culture of innovation and creativity that may generate growth and success, they need to be able to inspire and motivate their teams. Scholars continue to make breakthroughs in this field, despite the difficulties that are associated with defining and redefining the concept of leadership. A more profound comprehension of what it means to be a leader in the contemporary world can be attained by academics via the investigation

of the complexity and paradoxes that are associated with leadership (Bush, 2009). These researchers can generate new theories and models that can assist organisations in thriving in the VUCA world as a result of their study, which allows them to identify the important traits and attributes that are required for good leadership.

Chronologically and continuously, the concept of leadership in modern literature is being reviewed and reimagined in a manner that is both chronologically and perpetually evolving. During the early 1900s, the notion of leadership was about the leader's ability to impress others to follow, respect, be loyal, and cooperate (Bowden, 1926; Mumford, 1906; Terman, 1904). However, as society progressed and became more complex, scholars began to question the effectiveness of this traditional leadership model. They started exploring alternative approaches that focused on empowering individuals, fostering collaboration, and promoting shared decision-making. This shift in perspective marked a notable transition in the understanding of leadership and paved the way for further exploration and innovation in the field. After that, the interaction has expanded to an enormous scope of leader's characteristics on the team and vice versa (Flemming, 1935; Jennings, 1937; Westburgh, 1931), which has been considered a personal habit while conducting tasks that involve groups of people (Gibb, 1947; Jenkins, 1947; Murphy, 1941). This expanded understanding of leadership has led to the recognition that a leader's characteristics and behaviours can greatly impact the dynamics and effectiveness of a team. Researchers have excavatedd into studying how leaders' personal habits, such as communication styles and decision-making processes, influence group dynamics and outcomes. A decade later, scholars added the appearance of common goals and group effectiveness to the leadership development (Gibb, 1950; Stogdill, 1950; Tannenbaum & Massarik, 1957). These additional studies highlighted the importance of

leaders fostering a sense of shared purpose and aligning the team towards achieving common objectives. They also emphasised the significance of a leader's ability to facilitate collaboration and cooperation among team members, ultimately impacting the overall effectiveness and success of the group. The focus on individual behaviour also shifted into the cumulative action of a group, who are working with limited resources (Bornemann, 1946; Friedrich, 1961; Marak, 1964) toward a shared goal or individual goals of both leaders and fellows (Barrow, 1977; Lord, 1977; Vroom & Yetton, 1973). Overall, through various times, scholars highlighted the importance of leaders creating a supportive and inclusive environment where team members feel motivated and empowered to contribute their unique skills and perspectives. Additionally, they emphasised the need for leaders to adjust their leadership style and habits based on the particular demands and dynamics of the team in order to maximise overall effectiveness.

During the 1980s, scholars examined the noncoercion influence and engagement between leaders and team members under various motivational and ethical circumstances (Bensimon, 1989; Graeff, 1983; Lewis, 1985). These studies aimed to understand the impact of leaders' noncoercive behaviour on team members' motivation and ethical decision-making. They found that when leaders fostered a supportive and respectful environment, team members were more motivated to perform at their best and make ethical choices. The later decades witnessed the variation and conceptualisation of emerging concepts of leadership styles: Authentic Leadership, Spiritual Leadership, Servant Leadership, Adaptive Leadership, Followership, Discursive Leadership, Transformational Leadership, and Agile Leadership. (Bass & Bass, 2009; Cheng, 2002; Parker et al., 2015). These new leadership styles reflect the evolving understanding of effective leadership and the recognition that different approaches may be more suitable for different contexts and

situations. For example, Authentic Leadership emphasizes the importance of leaders being true to themselves and their values (W. Zhang et al., 2023), while Transformational Leadership focuses on inspiring and motivating followers to achieve their full potential (Crowther, 1997). These various leadership styles provide leaders with a range of tools and strategies to effectively lead their teams and promote positive outcomes. Each of those concepts differentiates itself from the other by the different priorities on particular characteristics, abilities, or procedures that are geared toward the shared vision. By understanding and utilizing these different leadership styles, leaders can adapt their approach based on the needs of their team and the specific goals they are trying to achieve. This flexibility allows leaders to create a more inclusive and dynamic work environment where individuals feel empowered and motivated to contribute their best. Ultimately, the ability to leverage different leadership styles can lead to improved team performance and overall organisational success.

In addition, there are discussions concerning the similarities and differences that exist between management and leadership duties. The traditional definition of management initiated by (Fayol, 1990) (including five essential elements of planning, organising, commanding, coordinating, and controlling) has been developed into the contemporary model of management POSLC (or PLOC): Planning, Organizing, Staffing, Leading, and Controlling (Weil, 1988). This contemporary model of management recognizes the importance of leadership in addition to the traditional managerial functions. Leadership involves inspiring and motivating employees, setting a vision for the organization, and guiding them towards achieving goals. Therefore, while management focuses on the operational aspects of running a business, leadership emphasizes the people-oriented aspects and drives organizational change. Consider the executive's role as the combination of both

manager and leader (Drucker, 1971) - the founding father of modern management further conceptualised leadership notation into practical frameworks such as MBO (Management by Objectives) and Self-control. These frameworks provide a structured approach for managers to set goals, delegate tasks, and evaluate performance, while also fostering a sense of ownership and accountability among employees. By incorporating both management and leadership principles, executives can effectively navigate the complexities of running a business while also inspiring their teams to achieve success. Other researchers and practitioners, including Hofstede (1992), Nonaka (1990) and Shrivastava (1983), have also demonstrated that the influence of leadership on vision-driven techniques may be observed in their respective bodies of work. These researchers have shown that effective leadership is crucial in creating a vision-driven approach to goal-setting, task delegation, and performance evaluation. Their work highlights the importance of leaders who can inspire and motivate employees to take ownership of their work and strive for excellence. By incorporating these principles into their management practices, executives can create a positive and productive work environment that fosters growth and success for both the organization and its employees.

Since the middle of the 20th century, researchers have been debating the nature of the connection that exists between leadership and the growth of schools. Stogdill (1950) argued that effective leadership is a crucial factor in driving school growth and improvement. Kyriacou & Sutcliffe (1979) believed that strong leaders can inspire and motivate teachers, create a positive school culture, and implement effective strategies for student success. Guyton & Farokhi (1987), however, suggest that while leadership is important, it is just one piece of the puzzle and that other factors such as resources, curriculum, and community involvement also play significant roles in

school growth. A number of eminent academics, including Griffiths (1959), Erickson (1967), and Boyan (1981), have made contributions to this conversation. These academics have highlighted the multifaceted nature of school growth and improvement, emphasizing that a holistic approach is necessary. They argue that effective leadership must be complemented by adequate resources and a well-designed curriculum to truly drive school growth. Additionally, they stress the importance of community involvement in creating a supportive environment for students and fostering their success. One area of focus in recent years has been the shift towards distributed leadership, which recognizes that effective leadership can come from various individuals within a school community, not just the principal (Razinkina et al., 2018). This approach encourages collaboration and shared decision-making among teachers, staff, and even students. Another emerging area of research is the impact of technology on educational leadership (Berry, 2019). With the increasing use of digital tools and online learning platforms, leaders must adapt their skills to effectively navigate this new landscape and ensure technology is integrated in a way that enhances student learning outcomes. Overall, scholars have been continually redefining the concept of educational leadership in order to keep up with changing times. This has resulted in the research focus on educational leadership evolving over the years (Hallinger & Kulophas, 2020).

With the help of VOS viewer 1.6.17, an open-source interactive data visualization software, the researcher performed a co-occurrence analysis to emphasise the research focus on educational leadership over the course of the years (Figure 2), which was derived from the information contained in 154 scientific journal articles (as mentioned in Table 1). The organisational context, strategies, effectiveness, and reform were the primary topics of discussion in scholarly papers written on this subject prior to 2014. Between the years 2015 and 2017, the focus of research

shifted to distributed leadership, instructional leadership, and the professional development of teachers. The measurement of organizational culture, impact, capacity, as well as teachers' perceptions, motivations, and opportunities for growth, has become an increasingly important focus for academics in recent years.

Research focuses on educational leadership prior to 2014.

In particular, there are several notable studies about school context, strategy, organisational effectiveness, and institutional reform before 2014. Regarding school context and strategy, the work of Bogler (2001) focused on the impact of leadership styles on teacher job satisfaction. The research highlighted the interconnectedness between leadership behaviours and the overall satisfaction of teachers. Findings suggested that certain leadership styles could significantly affect the working environment, and impact the morale and job satisfaction of educators, emphasising the importance of effective leadership in fostering a positive teaching environment.

Regarding school effectiveness, Toole & Louis (2002) investigated the role of professional learning communities (PLCs) in shaping the teaching and learning environments, regarding the context of international education. The research emphasised the significance of collaborative learning among educators in enhancing leadership effectiveness. The study highlighted how PLCs contribute to professional development, knowledge sharing, and the overall improvement of educational practices. Hopkins & Jackson (2003) explored the role of leadership development as a means to develop the capacity for leading and learning. Their research emphasised the importance of leadership development programs that enhance the capabilities of educational leaders. The study highlighted the need for continuous learning and skill development among leaders to effectively lead school improvement initiatives. The study of Wagner (2006) focused on

the development of tools for assessing and improving school culture. Wagner underscored the importance of school culture in influencing student achievement and overall school success. The findings provided insights into how leaders can assess and shape school culture to create a positive and conducive learning environment. Pauley & Pauley (2009) emphasised the critical role of communication in effective leadership. The study highlighted communication as a key component in building trust, fostering collaboration, and promoting a positive school culture. Effective communication was identified as a fundamental leadership skill that contributes to overall organisational success.

Concerning school reform, Crowther et al. (2008) explored the development of teacher leaders and how their leadership roles contribute to school success. The findings highlighted the positive correlation between teacher leadership and overall school effectiveness, supporting the idea that empowering teachers as leaders can enhance educational outcomes. McCharen et al. (2011) investigated the role of school innovation in educational leadership. The study explored how innovative practices contribute to the overall effectiveness of schools. The findings underscored the importance of fostering a culture of innovation within educational institutions and the role of leadership in promoting and sustaining innovative initiatives. Regarding another aspect of school reform, Figlio & Loeb (2011) studied school accountability within the broader context of the economics of education. Their research investigated the mechanisms and implications of accountability in the educational system. The study underscored the significance of accountability measures in driving educational improvement, thereby contributing to the broader discourse on educational leadership and effectiveness.

Research focuses on educational leadership from 2015 to 2017.

Within this period, scholars diversified perspectives on educational leadership, with new enhancements on the impact of leadership styles, as well as the crucial roles of teachers' professional development. Fairman & Mackenzie (2015) explored how teacher leaders influence others and comprehend their leadership roles. Their study emphasised the unique contributions of teacher leaders in educational settings, shedding light on their capacity to inspire and guide their peers. Lai & Cheung (2015) investigated the practical enactment of teacher leadership. Their findings provided insights into how teachers can take on leadership roles within schools, contributing to the overall improvement of educational practices. In a broader prism, Parker et al. (2015) explored the intersection of productivity improvement, self-organised teams, and agile leadership. The research highlighted innovative approaches to leadership that foster productivity in educational settings.

Scholars also emphasised the impact of leadership on students' outcomes and achievements. Sebastian et al. (2016) investigated the role of teacher leadership in how principals influence the teaching and learning processes. Their study confirmed the collaborative nature of educational leadership and its impact on instructional practices and student outcomes. Dutta & Sahney (2016) underscored the pivotal role of educational leaders in shaping the learning outcomes of students. Their findings highlighted the importance of effective leadership in creating an environment conducive to academic success. As regards the teachers' professional development and involvement, Benoliel & Barth (2017) revealed the relationship between participative leadership, teacher job satisfaction, and burnout, considering the implications of the school's cultural attributes. The research illuminated the intricate interplay between leadership styles and the

cultural context of schools, shedding light on how participative leadership can influence teacher well-being.

Research focuses on educational leadership from 2017 to present.

Over the past few years, the measurement of organizational culture, effect, and capacity, in addition to the perceptions, motivations, and possibilities for advancement of instructors, has emerged as a topic of increasing significance for academics to concentrate on.

First, regarding the notation of school culture, the multi-faceted nature of school culture has been explored together with its influences and implications on a school's growth. Regarding the context of the Vietnamese education system, Truong et al. (2017) provided a unique cultural perspective, illustrating how traditional values impact leadership practices within the educational context. Understanding the cultural underpinnings of leadership contributes to a broader comprehension of school culture. Gil et al. (2019) assessed school culture using teachers' perspectives on learning organisations. Their research examined how the principles of a learning organization impact educators and contribute to a positive school culture. Insights from this research provide a holistic view of the relationship between organizational learning and the culture within educational institutions. Abdulahi (2020) explored the determinants of teachers' job satisfaction from a school culture perspective. The research explored how various elements within the school culture contribute to or hinder teachers' job satisfaction. Findings provided valuable insights into the nuanced interplay between organizational culture and the overall satisfaction of educators. Printy & Liu (2021) examined the interactive nature of distributed leadership globally. Their study investigated how both principal and teacher leadership contribute to a distributed leadership model,

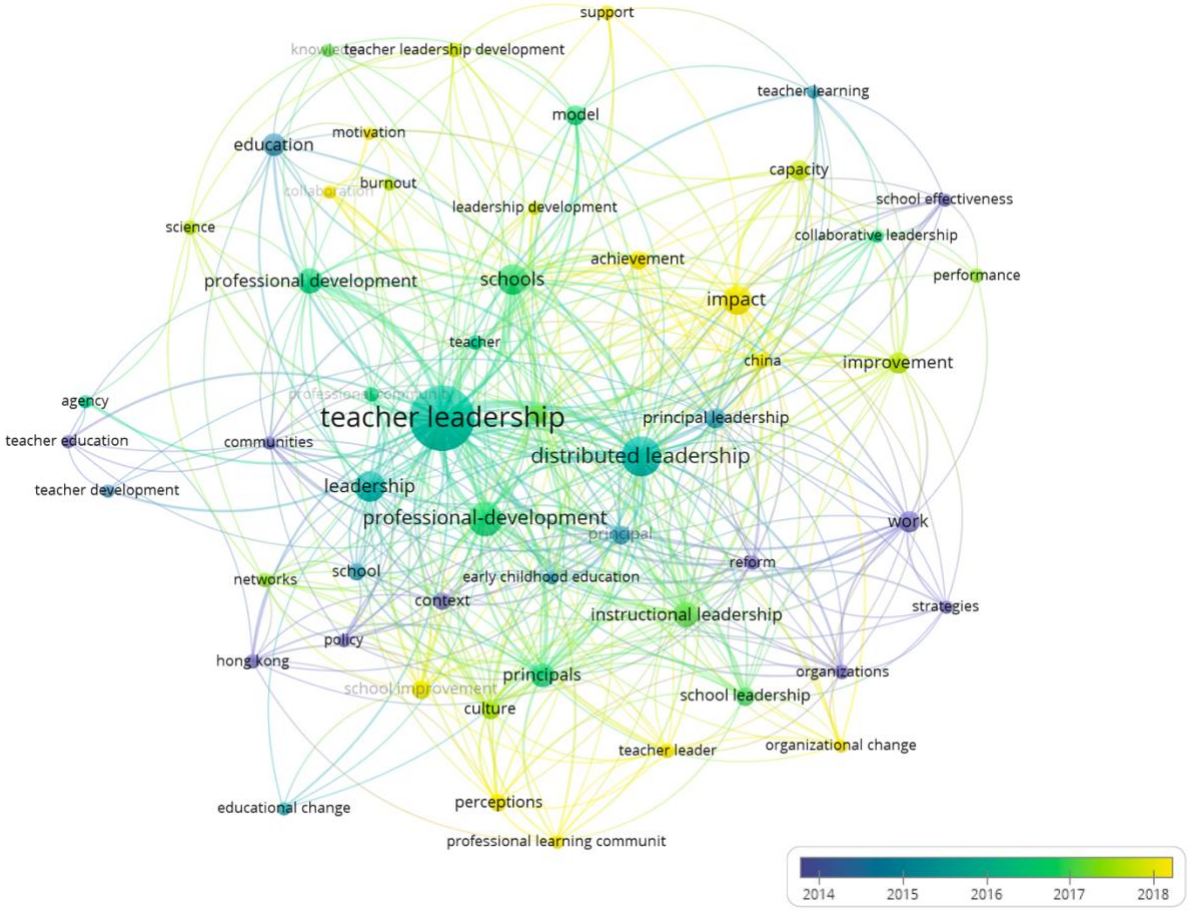
influencing the overall culture within schools across 32 countries. The findings pointed out the importance of collaborative leadership in shaping a positive school culture.

The second scholarly focus in recent years is on the relationship between school structure, organisational learning capacity, leadership, teachers' beliefs, and determinants of job satisfaction in the context of school capacity development, effectiveness, and student achievement. Heyder (2019) investigated teachers' beliefs about the determinants of student achievement and their implications for job satisfaction and stress. The study shed light on the interconnectedness of teachers' beliefs, job satisfaction, and the well-being of educators, emphasizing the role of these beliefs in shaping the learning environment. In a similar approach, Barnard (2020) examined the relationship between secondary school structure, organizational learning capacity, and learning organisations. The research contributed to our understanding of how the structural aspects of secondary schools impact their ability to learn and adapt, emphasising the importance of organisational learning capacity in creating effective learning environments. Lopes & Oliveira (2020) conducted a multilevel analysis to explore teacher and school determinants of teacher job satisfaction. The study highlighted the importance of considering both individual and organisational factors in understanding teacher satisfaction, offering valuable insights for school leaders seeking to enhance overall teacher well-being. Also, Lowe et al. (2020) reappraised the engagement domain of The Australian Professional Standards for Teachers (AITSL) and drew attention to clarifying social capacity building for school leaders to enhance overall teacher job satisfaction and career longevity. The research accentuated the significance of social capacity building in the professional engagement of school leaders, contributing to the discourse on effective leadership practices. In another structured approach, Leithwood et al. (2020) proposed

the "Four Paths Model" to understand how school leadership influences student learning. The research provides insights into the various pathways through which leadership impacts student outcomes, contributing to our understanding of the multifaceted nature of effective school leadership.

Figure 2. Research Focuses on Educational Leadership from 1975 to 2022

(The author, 2024).



Overall, it is impossible to overstate the significance of having strong leadership in the field of education. At the same time that it is the driving force that motivates people to work together towards a common goal, it is also the key to unlocking the full potential of any team. Within the

context of the VUCA world that we live in today, the requirement for effective leadership has become more urgent than it has ever been before this point in time (Hallinger, 2020). Because of the rise of industrial, economic, and social revolutions, leaders need to be able to navigate the complex and rapidly changing landscape of the modern world, which includes new opportunities and challenges.

To further examine the movement of these above research focuses, the researcher adopted the thematic analysis technique. Thematic analysis is a widely used method in social science research that allows for the identification and exploration of recurring themes or patterns within a body of literature (Cobo et al., 2015). By applying this technique, the researcher was able to categorise and analyse the various research focuses within the field of educational leadership over a span of 47 years (from 1975 to 2022). The findings presented in Figure 3 provide valuable insights into the evolution and trends of research in this area, which can aid in understanding the interconnectedness of different research focuses and potential areas for interdisciplinary collaboration.

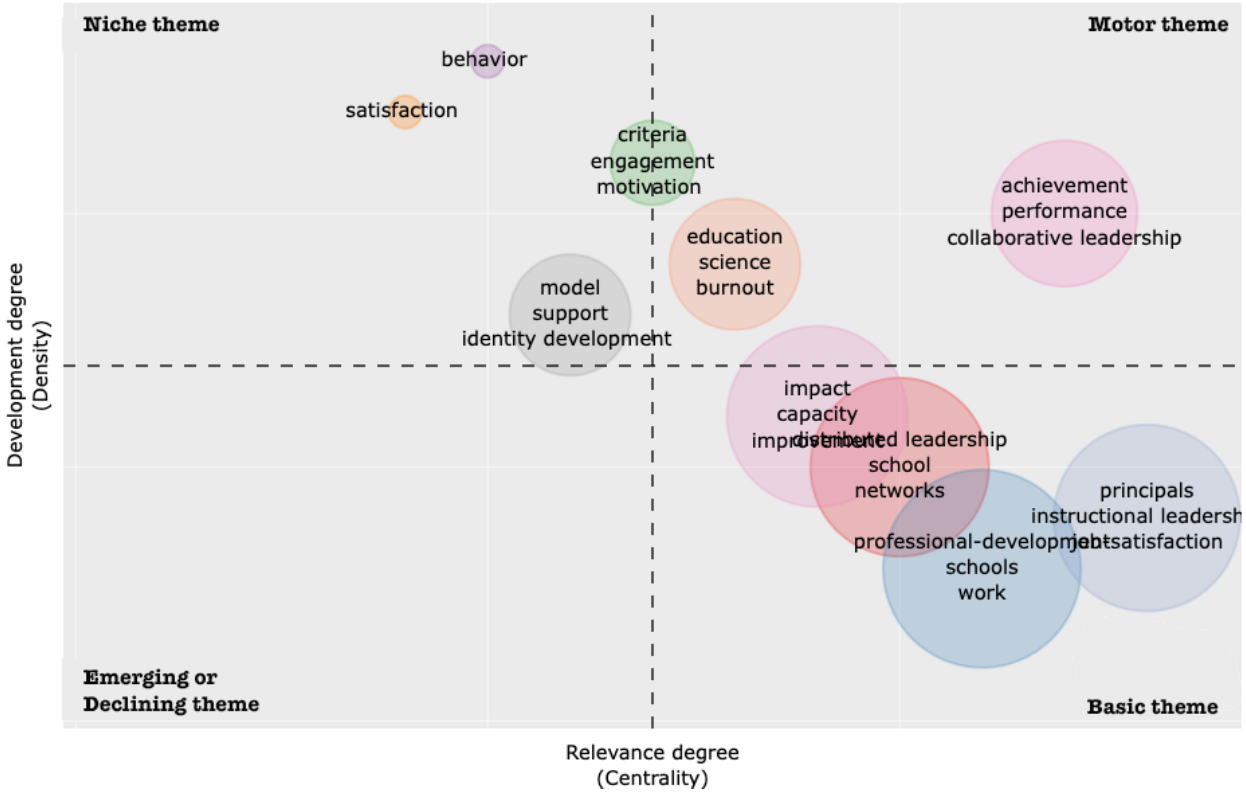
In particular, the relationships of research keywords can be revealed via the development degree (the density of linked keywords, horizontal) and the relevance degree (the centrality of linked keywords, vertical), as well as the size of each cluster (the frequency of keywords from the dataset). The motor theme (top-right quadrant) includes topics that scholars have consistently been of interest to researchers in the field, indicating their significance in understanding and improving educational leadership practices. The identification of these recurring themes can inform future research directions of both scholars and practitioners who investigate educational leadership. In

detail, the main focuses include topics that are crucial to educational leadership: achievement, performance, collaborative leadership, and burnout.

The basic theme (bottom-right quadrant) contains topics that are important but still need more investigation: principal leadership, teacher leadership, professional development, and teachers' job satisfaction. Further exploration of principal leadership can provide valuable insights into the role and impact of school principals in promoting effective educational practices. Additionally, investigating teacher leadership can shed light on the influence and contributions of teachers in shaping school culture and student outcomes. Further research on professional development and teachers' job satisfaction can help identify strategies to enhance teacher growth and well-being, ultimately benefiting both educators and students.

On the left side, it is not difficult to realise the limited appearance of niche themes, as well as the absence of either emerging or declining research keywords. This suggests that there may be untapped areas of research within the field of education that could provide valuable insights and contribute to the overall improvement of educational practices. Exploring these overlooked themes and identifying emerging research keywords could lead to a more comprehensive understanding of the challenges and opportunities in education, ultimately leading to more effective strategies for school principals and teachers.

Figure 3. Thematic Map of Studies on Educational Leadership from 1975 to 2022 (The author, 2024).



Examining characteristics and factors associated with educational leadership, Sergiovanni (1984) proposed five "leadership forces": *technical, human, educational, symbolic, and cultural*. The technical force refers to the knowledge and skills required for effective administration, while the human force emphasizes building relationships and fostering collaboration within the school community. Additionally, the educational force highlights the importance of promoting continuous learning and professional development among educators. The symbolic force focuses on creating a shared vision and inspiring others through symbols and rituals, while the cultural force recognizes the significance of organizational culture in shaping leadership practices. Overall,

Sergiovanni's framework provides a comprehensive understanding of the multifaceted nature of educational leadership.

Aimed to provide a more natural way for school leaders to enable and enhance their leadership capabilities, Leithwood (1994) conceptualised transformational leadership along with eight continuing phases: *building school vision, establishing school goals, providing intellectual stimulation, offering individualised support, modelling best practices and essential organisational values, demonstrating high-performance expectations, creating a productive school culture, and developing structures to foster participation in school decisions*. These phases are designed to empower school leaders to effectively guide their institutions towards positive change and growth. By focusing on creating a shared vision, setting clear goals, and fostering a culture of collaboration and innovation, transformational leadership can inspire teachers, students, and other stakeholders to strive for excellence and achieve desired outcomes in education.

Bolman and Deal (2017) shared a similar approach and constructed four leadership frames within the school context: structural, human resources, symbolic, and political. These leadership prisms provide different opportunities and strategies for school leaders to effectively address various challenges and situations. By understanding and utilizing these frames, school leaders can adapt their leadership style to meet the specific needs of their institution and promote a positive and productive learning environment.

However, despite the fact that these above studies can capture school leadership’s ontology and phenomena, such frameworks are still too general and difficult for practitioners to follow

(McCharen et al., 2011). Therefore, it is important for school leaders to also have access to practical and actionable guidance that can help them navigate the complexities of their roles. This can include specific tools, resources, and training programs that offer concrete strategies and solutions for common challenges in the education sector.

Overall, besides the typical way of identifying and classifying leadership factors based on system, process, and people, prior literature defined several educational leadership characteristics. These characteristics include visionary thinking, effective communication, and the ability to inspire and motivate others. The necessity of capacity development has been addressed by several scholars (Gronn, 2000; Hopkins & Jackson, 2003) to acknowledge the potential possibilities of human and intellectual resources beneath the school's daily operation.

The significant influence of leadership over school growth and effectiveness has been reinforced by modern scholars like Wallace (2002) and Harris (2003). Additionally, their research also highlighted the importance of ethical decision-making and a strong commitment to continuous learning and professional development in educational leaders.

Shared a similar idea with Leithwood (1994), Dimmock & Walker (2002) used a nonsequential way of clustering to gather eight areas of school leadership development: *collaboration and partnership, motivation, planning, decision-making, interpersonal communication, conflict, evaluation and appraisal, staff and professional development*. These scholars argue that effective educational leaders must possess not only a strong understanding of ethical decision-making but also a commitment to continuous learning and professional development. They pointed out the

need for leaders to engage in collaborative partnerships, motivate others, and effectively plan and make decisions. Furthermore, they highlight the importance of interpersonal communication, managing conflict, evaluating and appraising performance, as well as investing in staff and professional development.

Argued for an "integrated model of leadership", Bush & Glover (2003) reviewed eight models of leadership that provide "a starting point for a normative assessment of school leadership": *Instructional Leadership; Transformational Leadership; Moral Leadership; Participative Leadership; Managerial Leadership; Post-modern Leadership; Interpersonal Leadership; Contingent Leadership*. These models of leadership highlight the diverse range of skills and approaches required for effective school leadership. Instructional Leadership emphasises the importance of supporting and enhancing teaching and learning practices, while Transformational Leadership focuses on inspiring and motivating others towards a shared vision. Moral Leadership emphasises ethical decision-making and promoting values within the school community, while Participative Leadership encourages collaboration and shared decision-making among staff members. Managerial Leadership focuses on efficient resource allocation and organisational management, while Post-modern Leadership recognises the need for adaptability and flexibility in an ever-changing educational landscape. Interpersonal Leadership focuses on building positive relationships with stakeholders, while Contingent Leadership acknowledges the need to adjust leadership approaches based on specific contexts or situations. By understanding these different models, school leaders can develop a more comprehensive and adaptable approach to their roles.

In summary, there is the fact that different educational leadership approaches can be applied to the same nature of school practices. For instance, the overlapping between instructional leadership, learner-centric leadership, and pedagogical leadership are notable (Harris, 2003). These different approaches to educational leadership offer a range of perspectives and strategies for improving school practices. Instructional leadership focuses on enhancing teaching and learning, learner-centric leadership prioritises student empowerment and engagement, and pedagogical leadership highlights the importance of effective instructional methods. By comprehending the overlapping nature of these approaches, educators can tailor their leadership style to best meet the needs of their school community.

Also, the influence of educational leadership on teachers' job satisfaction has been examined by various scholars (Crossman & Harris, 2006; Liu, 2020). Compared to commercial industries, the school's management context's different nature also leads to the differences between educational leadership and general leadership practices. Educational leadership requires a deep understanding of the unique challenges and dynamics within a school setting, such as managing diverse student populations and collaborating with various stakeholders. Additionally, effective educational leaders must possess strong pedagogical knowledge and be able to foster a positive and inclusive learning environment for both students and teachers.

Scrutinised the work and impact of school leaders during their tenure (from two to three years), and three years after they left their schools, Hill *et al.* (2017) described principalship by five metaphors: *Surgeon, Soldier, Accountant, Philosopher, and Architect*. The differences between those types of principalship's effectiveness are based on students' academic results and the

school's financial status, which are typical school performance indicators but do not cover teacher-related aspects. Teacher-related aspects play a crucial role in the overall success of a school. Factors such as teacher morale, job satisfaction, and professional development opportunities can greatly impact student outcomes. Therefore, it is important for school leaders to not only focus on academic results and financial status but also devote attention to the well-being and enhancement of their teaching staff. This holistic approach to principalship can create a positive and inclusive learning environment that benefits both students and teachers alike. Overall, regardless of the leadership styles, the principal's impact across teaching and learning activities, as well as internal and external stakeholders, in both short and long runs, is undeniable (Tsai, 2017). The principal plays a crucial role in shaping the school's culture and ensuring a positive and inclusive learning environment that benefits both students and teachers alike.

2.3 Contemporary Efforts in Measuring Educational Leadership

Explaining the contemporary values of educational leadership, Frost (2008) highlighted the importance of the young journal "Teacher Leadership" as an effort to support schools to be more active in the game of *"deep organisational learning".* By providing a platform for educators to share their experiences and insights, the journal encourages a collaborative approach to educational leadership, fostering innovation and growth in the field. Furthermore, Frost (2008) argued that this emphasis on teacher leadership is essential for creating a culture of continuous improvement and adaptability in educational institutions.

Teacher leadership is the contribution of teachers toward students' achievement, teaching improvement, and schools' overall improvement (Katzenmeyer & Moller, 2009). Teacher

leadership not only benefits students and schools but also empowers teachers to take ownership of their professional development and contribute to the larger educational community.

Even though educational leadership plays an essential role in education renovation and has caught academia's attention since very early (Leithwood et al., 2004), it is impossible to determine a standard educational leadership measurement method that fits every culture (Tsai, 2017). Different cultures have different values and expectations when it comes to educational leadership, making it necessary to consider cultural context when evaluating and developing effective leadership practices. Additionally, the dynamic nature of education requires leaders to continually adapt their approaches to meet the evolving needs of students and schools.

Silva *et al.* (2000) portrayed the first period of research on teacher leadership as a focus on teacher leaders' formal roles only, while the second wave shifted to teachers' instructional capacities as a pathway to the latest trend in teacher-based school reforms. This shift in focus highlights the recognition that teacher leadership extends beyond administrative roles and encompasses the ability to influence instructional practices and drive school improvement. As such, understanding and supporting teacher leadership is crucial for fostering a culture of collaboration and innovation within educational institutions.

Regardless, the research purpose of academics has changed over time; their primary research objects are teacher leaders' teaching-related, people-related and risk-taking skills (Riveros et al., 2013) and behaviours (Fairman & Mackenzie, 2015) to influence and collaborate. By studying teacher leaders' skills and behaviours, researchers aim to uncover effective strategies for promoting

collaboration and innovation in educational settings. Such efforts can inform the development of professional development programs and policies that empower teachers to take on leadership roles and drive school improvement strategies.

To date, the scope of educational leadership is not limited to formal leadership based on a teacher's title but also extended to the informal leadership of teaching and non-teaching staff, regardless of a centralised or decentralised school system (Emira, 2010; Frost, 2019). By studying the emergence, development, and involvement of informal leadership, scholars can also identify barriers and challenges that hinder collaboration and innovation in educational settings. This knowledge can help educators and policymakers implement targeted interventions and support systems to overcome these obstacles to create a more conducive environment for collaboration and innovation. Additionally, understanding the role of informal teacher leadership can shed light on the influence that teachers who do not hold formal leadership positions have on positive change within schools, as well as the motivations behind their grit.

According to Hansen et al. (1995), blind spots are the points that lack understanding or perspectives, and blank spots are research topics or aspects that have not been covered. Identifying blind spots and blank spots in research is crucial for advancing knowledge and addressing gaps in understanding. By acknowledging these areas, researchers can focus their efforts on exploring new perspectives and conducting studies that fill the existing voids. This not only enriches the field but also promotes a more comprehensive understanding of the subject matter. Shava (2018) stated that there are plenty of blind spots and blank spots that need to be discovered towards a holistic framework of educational leadership, especially in the globalisation context, in which teachers

have to improve their learning capabilities and adaptive competencies continuously. A notable blind spot is the case of distributed leadership in Western and Eastern contexts. For instance, in the case of Hong Kong, the concept of distributed leadership does exist in schools but is only limited to the nearest level within the school hierarchy rather than the entire organisation (Dimmock & Walker, 2005). This limited understanding of distributed leadership in Hong Kong schools hinders the potential for collaborative decision-making and shared responsibility among all stakeholders. Additionally, exploring the cultural nuances and contextual factors that influence educational leadership practices in both Western and Eastern contexts can provide valuable insights for developing a more comprehensive framework.

Another example is the case of student-centric pedagogy in Vietnam, which has been stated as a pillar of the government's reform since 2012. However, even though various national, regional, and institutional projects have been implemented to enhance teachers' capabilities and students' involvement, the majority of schools in Vietnam still follow teacher-centric approaches (Pham & Renshaw, 2013). This suggests that while there may be a recognition of the importance of student-centric pedagogy at the government level, there are still challenges in effectively implementing and sustaining these practices at the school level. Further research and analysis of the specific barriers and enablers to adopting student-centric approaches in Vietnam could provide valuable insights for educational leaders seeking to promote more student-centred learning environments.

Besides, there are several blank spots in the corpus of research on educational leadership in Asian countries. The first example is about teacher leadership, or in particular, the leading role of teachers in professional learning communities. Some countries, like Singapore and Vietnam, have initiated

policies that encourage all schools to transform into professional learning communities. However, while Singaporean teachers are proactively involved in such communities as change agents (Hairon & Dimmock, 2012), the engagement of Vietnamese teachers is passive and lacks motivation (Duong et al., 2021). This difference in teacher engagement may be attributed to the varying cultural and educational contexts in Singapore and Vietnam. Further research is needed to explore the factors influencing teacher leadership and motivation in professional learning communities across Asian countries in an attempt to inform effective policy implementation and improve educational outcomes.

Second, there are missing pieces about the actual practices of Asian teachers' collaborative roles in constructing and sharing knowledge toward students' achievements and teachers' job satisfaction (Banerjee et al., 2017). These two examples are alerts to educational researchers and policymakers that they should be aware of the differences in context and culture while adopting new policies or adjustments. As education systems in Asian countries are at various stages of development, understanding the specific strategies and approaches used by Asian teachers in collaborative roles can provide valuable insights into how knowledge is constructed and shared among educators, ultimately impacting student achievement and teacher job satisfaction. This information can help shape professional development programs and policies that support effective collaboration, not only within educational systems across Asian countries but also in other regions with similar dynamics, such as South America and Africa (Shava, 2018).

Regarding factors that influence educational leadership, York-Barr & Duke (2004) conducted a systematic review over two decades of teacher leadership and determined three main categories:

school culture and context, roles and relationships, and school structures. Smyliet & Eckert (2018), as well as Nerlino (2020), shared similar ideas that the notation of educational leadership should be extended to the broader context of teaching and non-teaching staff rather than being limited to the leading positions only. This broader perspective allows for a more comprehensive understanding of how various individuals within the educational system contribute to leadership and influence student outcomes. By comprehending the crucial function of all staff members, including teachers, administrators, and support staff, educational leadership can be more effectively fostered and nurtured throughout the entire school community.

Fernandes (2019) highlighted education systems and institutions in the Asia Pacific region focus on internationalising their curriculum and practices by importing Western programs and recruiting expat teachers and school managers. However, there is a lack of theoretical foundations that ensure the sustainable development of those knowledge-additivity processes. Without a solid theoretical foundation, the long-term success and sustainability of these knowledge-additivity processes may be compromised. As recommended by Hallinger (2000) educational leadership needs to place importance on the integration of both Western curriculum and approaches, and local practices, while also providing ongoing professional development opportunities for all staff members to ensure a well-rounded and effective educational experience for students. Additionally, educational leadership must foster a collaborative and inclusive learning environment that values diversity and promotes equity (Hoang, 2019).

Hallinger (2020) also figured out the urgency of structuring the movement of educational leadership and management in emerging regions such as Asia, Africa, and Latin America. This

yearning is crucial because these regions often face unique challenges and require tailored approaches to educational leadership. By understanding the importance of local practices and cultural contexts, educational leaders can better address the specific needs of students and communities in these regions. Moreover, Hallinger's research highlights the need for ongoing professional development to ensure that educational leaders in emerging regions are equipped with the necessary skills and knowledge to drive positive change in their schools and systems.

Table 2 summarises key constructs that scholars have used to measure principal and teacher leadership in their contemporary approaches. Recent studies on the topic have gradually witnessed the emergence of Asian scholars, despite the dominance of Western scholars in the previous decades (Hallinger & Kulophas, 2020). In particular, regarding the research object, researchers often examine the perspectives of educational leaders and teachers (Angelle & Dehart, 2010), teachers only (Gurr, 2017), or teachers and students (Sebastian et al., 2016) to determine educational leadership. In other approaches, educational researchers (Berg & Zoellick, 2019) and literature (Cheung et al., 2018) were referred to as the main outputs to build a conceptual framework. It was difficult to find empirical or conceptual studies that involved principals as the only research object. Regardless of the research population, most recent research focused on the notation of either principalship or teacher leadership only. However, Pan & Chen (2020) were the only research team that defined educational leadership as a congruent model, including both leader teachers and teachers' aspects. Their study provided a comprehensive understanding of educational leadership by considering the interplay between principals and teacher leaders. This approach recognises the importance of collaboration and shared decision-making in driving school

improvement efforts. Furthermore, their findings highlight the need for future research to explore the impact of this congruent model on student outcomes and school effectiveness.

Table 2. Contemporary Approaches in Measuring Principal and Teacher Leadership (The author, 2024)

Authors	Model	Constructs (and number of indicators)	Country	Participant
Principal Leadership				
Angelle & Dehart (2010)	Four Factors Model of Teacher Leadership	Sharing leadership; Principal selection; Sharing expertise; Supra practitioner	USA	Teachers and principals
Lai & Cheung (2015)	Enacting Teacher Leadership	Teacher participant in curriculum planning; Teacher participant in catering for learner diversity; Teacher learning; Teacher influence	Hongkong	Teachers
Gurr (2017)	Principal Leadership	High expectations; Pragmatic approaches; Leadership Distribution; Core leadership practices; Heroic leadership; Capacity development; Trust and respect; Continuous learning; Personal resources; Context sensitivity; Sustaining success	Australia, Canada, China, Denmark, England, Norway, and Sweden	Teachers
Sebastian *et al.* (2016)	Educational Leadership Practices	Instructional; Teacher-principal trust	USA	Teachers and students
Cheung *et al.* (2018)	Teacher Leadership Framework	Collaborating; Providing resources; Advocating; Modeling	USA	Conceptual paper

Berg & Zoellick (2019)	Teacher Leadership Framework	Legitimacy; Support; Objective; Method to pursue those objectives	USA	Educational researchers
Leithwood *et al.* (2020)	School leadership	Set directions (4); Build relationships and develop people (5); Develop the organisation to support desired practices (6); Improve the instructional program (4)	USA	Teachers
Pan & Chen (2020)	Learning-centered School Leadership	Building a learning vision; Developing teachers' competence; Managing curriculum and instructional programme; Providing a supportive environment	Taiwan	Teachers
Xie *et al.* (2020)	Teacher Leadership Scale	Professional learning leadership; Association leadership; Instruction leadership; Policy leadership; Community leadership; Assessment leadership	China	Teachers
Teacher Leadership				
Sebastian *et al.* (2016)	Educational Leadership Practices	Influence in decision-making	USA	Teachers and students
Yuet *et al.* (2016)	Teacher Leadership Competence	Facilitating Improvement and Establishing Standards (5); Modeling Leadership Attributes and Skills (4); Fostering a Collaborative Culture (9); Performing as Referral Leader (4)	Malaysia	Teachers
Tsai (2017)	Teacher Leadership Style	Charismatic leader (14); Ideological leader (4); Pragmatic leader (11)	China	Teachers

Damkuvienė *et al.* (2019)	Teacher Leadership for Organisational Change	Self-development (3); Dispersing ideas; Involvement and engagement of others; Gaining commitment	Lithuanian	Teachers
Pan & Chen (2020)	Learning-centered School Leadership	Communicating a learning vision; Supporting teacher professional development; Initiating curricular and instructional improvement; Bettering the teaching environment	Taiwan	Teachers

Even though a significant number of theories and practical frameworks on educational leadership have been formed, there is a substantial number of gaps that have not been discovered yet or still need to be investigated. For instance, from very early on, Hallinger & Heck (1996) identified the over-focus on headteachers' formal leadership. That focus might lead to limitations of mediating and outcome factors around teachers and students only, while the communication, knowledge circulation, and transition among other stakeholders still do not get much attention yet. This gap in research highlights the need for a more comprehensive understanding of educational leadership that includes the involvement and perspectives of all stakeholders, such as parents, community members, and policymakers. Additionally, exploring the impact of informal leadership within schools could provide valuable insights into how relationships and networks influence educational outcomes.

Besides, the expanding and diversifying obligations and context of leadership also generate new challenges. Bush (2009) claimed the growing accountability of principals was a repercussion of the rising power over various educational constitutional levels. These challenges require educational leaders to not only navigate complex policy environments but also build strong

relationships with stakeholders to effectively implement change. Moreover, understanding the influence of informal leaders within schools can help educational leaders identify and leverage existing networks to drive positive outcomes for students.

Overall, there are significant changes and challenges in educational leadership under the pressure of globalisation in today's VUCA/TUNA world (Shields, 2018). In particular, the increasing demand for generative learning through engagement is questioning traditional educational leadership practices regarding K-12 education's new and complex contexts of inequities and inequalities (Shava, 2018). These challenges require educational leaders to be adaptable and innovative in their approaches, as they navigate the diverse needs and backgrounds of students. Educational leadership does not limited to principal's leadership only but also includes teacher's self-leadership and leadership they have on their peers. The accumulation of leadership across levels will help educational institutions to growth and sustain. Furthermore, educational leaders must work together with stakeholders from various sectors, such as government, non-profit organizations, and community groups, to address these complex issues effectively and efficiently.

2.4 Schools as Learning Organisations: Knowledge Circulation as a Growth Factor

Ultimately, the primary objectives of leadership in the school context are to build and sustain the school's development capabilities and to create a positive and inclusive learning environment for all students (Seashore Karen & Toole, 1999). Besides measuring leadership across different levels (including top-down and bottom-up positions) as a means to evaluate individuals' potential for advancement within the organisation, it is also important to assess their ability to work collaboratively with others to trigger and foster new growth. Effective leaders in schools

concentrate on fostering a culture of collaboration among staff, parents, and students, as well as promoting continuous professional growth for teachers (Craig, 2021). Additionally, they strive to establish strong relationships with the wider community and stakeholders to ensure that the school is meeting the needs and expectations of all its members. Learning organisation is a taxonomy of business and management study, a concept which has been triggered by scholars such as Cyert & March (1992), Argyris & Schon (1974), and Harris (1990) to describe the transformation of a business through learning and development activities among its members, groups, and sub-groups. These scholars underline the importance of creating a culture of learning within an organisation, where individuals are encouraged to share knowledge, collaborate, and continuously improve. This concept can be applied to educational settings, where institutions can adopt a learning organization approach to promote a culture of growth and development among students, teachers, and the wider community (Hong, 2012). By embracing this approach, schools can adapt to changing needs and expectations, ensuring that all members are equipped with the necessary skills and knowledge for success in the modern world. Thereafter, the taxonomy gained attention from researchers in the field of organisational behaviour and became one of the two main concepts of management thinking in the 1990s (Ulrich et al., 1993). In recent times, the journeys on learning organisation and organisational learning have continued to explore phenomena and psychological structures of collective wisdom at different levels of learning and the connection between individual and corporate learning (Garavan, 1997; Edmondson, 2018).

Historically, due to the nature of research objects, the definition of learning organisation was limited to commercial enterprises only (Pedler & Burgoyne, 2017). However, with the evolution of knowledge-based economies and the recognition of the importance of continuous learning, the

concept of a learning organisation has expanded to include non-profit organizations, government agencies, and educational institutions as well. This broader understanding acknowledges that all types of organizations can benefit from fostering a culture of learning and adaptability.

Being known as places where learning activities happen the most, but the primary focus of educational institutions is on students rather than other stakeholders like teachers, managers, and other staff (Dimmock & Walker, 2002). Conversely, it is becoming increasingly recognised that for educational institutions to truly function as learning organisations, they must prioritise the professional development and growth of all their stakeholders. This includes providing opportunities for teachers, managers, and other staff members to engage in continuous learning and adaptability, ultimately benefiting both the institution and its students.

Silins & Mulford (2004) featured eight essential elements that ensure schools' success as learning organisations: *resource, leader, staff value, leadership satisfaction, community focus, teacher leadership, organisational learning, and teacher's work*. These elements highlight the importance of having adequate resources, effective leadership, and a supportive community in order to foster a culture of continuous learning within the organization. Additionally, empowering teachers to take on leadership roles and promoting a collaborative approach to learning can further enhance the institution's ability to adapt and grow.

According to Anderson (2004), principals and teacher leaders play interdependent roles in achieving the typical outcome of school leadership. This highlights the need for a strong partnership between these two groups to effectively lead the organisation towards its goals. By

working together, principals and teacher leaders can create a cohesive and collaborative environment that promotes continuous learning and growth within the institution.

The first two decades of the 21st century witnessed the complex growth of the modern learning environment and the rising demand for learners and parents. This has placed an even greater emphasis on the collaboration between principals and teacher leaders to meet the diverse needs of students and their families. Additionally, the integration of technology in education has further necessitated a strong partnership between these two groups to effectively navigate and utilize digital tools for teaching and learning purposes. For instance, Bowen *et al.* (2007) examined 11 middle schools that operate as learning organisations and found positive relations between organisational growth and staff's well-being, efficiency, and satisfaction. These findings highlight the importance of fostering a collaborative and supportive environment within schools, where principals and teacher leaders work together to create positive and productive learning communities. This not only benefits the well-being and satisfaction of staff members but also contributes to overall organizational growth and success.

In addition, there are mediating effects of emotional intelligence and organisational commitment on teacher job satisfaction. Emotional intelligence refers to the ability to recognize and manage one's own emotions as well as understand and empathize with others. The study by Güleryüz et al. (2008) suggests that teachers with higher emotional intelligence are more likely to experience job satisfaction, further emphasizing the importance of fostering emotional intelligence within school environments. Additionally, Berkovich & Bogler (2020) found that teachers who have a strong

sense of commitment to their organization are more likely to report higher levels of job satisfaction, highlighting the role of organizational commitment in influencing teacher well-being.

As a result, schools' development of mottos and organisational practices are being impacted and adjusted continuously. Around the globe, even public schools' renewal is relying on market adjustment (Dalin, 2004; Potterton, 2020). These adjustments aim to create a positive and supportive school culture that promotes emotional well-being among both students and teachers. This includes implementing strategies such as social-emotional learning programs, providing resources for mental health support, and fostering a sense of belonging and connectedness within the school community.

The direct and indirect contribution of the knowledge circulation process to tackle contemporary issues as well as toward the school's sustainable development is no longer a doubt. The knowledge circulation process not only helps in addressing current challenges but also plays a crucial role in ensuring the long-term sustainability of the school. By sharing and disseminating knowledge, schools can stay updated with the latest advancements and innovative solutions, enabling them to effectively tackle emerging issues (Silins et al., 2002). Additionally, this process fosters collaboration and cooperation among educators, students, and researchers, creating a dynamic learning environment that promotes continuous improvement and growth. Since the 1990s, scholars have started to reconsider schools as learning entities of a broader scope of stakeholders rather than students only (Brundrett & Rhodes, 2011; Keay & Lloyd, 2011). This reorientation in perception has led to a renewed focus on the relevance of connections between schools and external organisations, such as businesses, non-profit organisations, and government agencies.

These collaborations allow schools to tap into additional resources and expertise, further enhancing their ability to address complex challenges and promote sustainable practices. Furthermore, by involving a wider range of stakeholders in the educational process, schools can foster a sense of ownership and collective responsibility for sustainability, creating a more inclusive and holistic approach to education (Pham et al., 2021).

Establishing a sense of urgency for changes is not an easy step, and many schools are stuck in the trap of "Good enough" (Coleman & LaRocque, 1990). However, by collaborating with government agencies, schools can gain access to research and data that highlight the urgent need for sustainable practices. Timely updated insights from such parties can help schools break free from the mindset of complacency and inspire them to take proactive steps towards creating a more environmentally conscious learning environment (OECD, 2016). Additionally, external agencies might also provide financial support and incentives to schools that prioritise sustainability, as well as further motivating them to make the necessary changes (Schleicher, 2015). These above advantages are undeniable potentials for schools that can transform into learning organisations.

Silins & Mulford (2002) established a relationship between the system factors of leadership, organisational learning, and student outcomes, measured by student participation levels and engagement with school. This suggests that strong leadership and a culture of continuous learning within schools can positively impact student outcomes. For example, by incorporating environmental sustainability into their practices, schools can foster a sense of responsibility and engagement among students, leading to improved participation levels and overall academic performance (Hanushek & Woessmann, 2011). Furthermore, research has shown that students who

are actively involved in environmentally conscious initiatives tend to develop critical thinking skills and a deeper understanding of global issues, preparing them for future challenges in a rapidly changing world.

Focused on a population of 16 schools with notable transformation results, Copland (2003) conducted longitudinal research on school leadership and underlined the importance of inquiries toward sustainable capabilities generating process. In this study, Copland found that schools with strong leadership and a focus on sustainability were able to create a culture of inquiry and continuous improvement. This not only enhanced the school's ability to address environmental issues but also had a positive impact on student learning outcomes. These findings highlighted the significance of incorporating sustainable practices into school leadership strategies for long-term success in education. In other words, school leaders who focus on building teachers' capabilities and social issues are more likely to sustain the overall strategies of the school over a longer period of time.

The need for school transformation into learning organisations can be seen through the empirical attempts into the contemporary challenges of school leaders (Burns, 2005). Regardless of school types and grade levels, schools face similar domains of struggles while improving their capabilities: financing (Camper, 2019), visioning (Travis, 2019), staffing (Thornton et al., 2018), and data-driven action plans (Johnson, 2019). These challenges require schools to not only keep up with the latest technological advancements but also to address the changing needs and expectations of their diverse student populations. Travis (2019) suggested that, by adopting a

learning organisation approach, schools can effectively navigate these domains of struggle and ensure that they are providing an education that meets the needs of all students.

Among all kinds of resources, organisations do not perceive the actual essence and value of intellectual capabilities despite their crucial competitive advantages (Noruzi & Vargas-Hernández, 2010). This lack of recognition of intellectual capabilities can hinder schools' ability to effectively address the changing needs and expectations of their diverse student populations, ultimately limiting their potential. Even though most of those challenges can be solved by additional financial, human resources, or technical solutions, seeking sustainable solutions is always prioritised by many school leaders (Bottery, 2016). These leaders understand that sustainable solutions not only address immediate challenges but also create a foundation for long-term success. By investing in the development and recognition of intellectual capabilities, schools can foster an environment that encourages innovation, critical thinking, and adaptability among their students. This will not only prepare them for the demands of the future but also empower them to become active contributors to society.

Also, misalignments within the school or between the school and higher-level policies and regulations might oppress organisational learning. Wilkins (2002) discussed the misalignments between teachers' perceptions and school vision. For instance, teachers may have different ideas about the purpose of education or the methods of instruction compared to the school's overall vision. This misalignment can lead to confusion and frustration among both teachers and students, hindering the creation of an innovative and adaptable learning environment. Additionally, conflicts between national policies and school policies can create tension and hinder organizational learning

(Martin et al., 2000). For example, if national policies prioritize standardized testing while the school values project-based learning, there may be a disconnect that limits the ability of teachers to implement innovative teaching methods.

The focus of scholarly research on the school as a learning organisation has evolved in the last decade, including initial action research and further conceptual and recent explorational studies about organisational structures, effectiveness, and engagement across interpersonal, sub-groups, groups, and organisational levels. These studies have shed light on the importance of fostering a culture of collaboration and shared learning within schools. Additionally, researchers have also investigated the impact of leadership styles and practices on the development of a learning organisation. Using the co-occurrence analysis technique (VOS viewer version 1.6.17), The researcher analysed 47 papers in the Web of Science database and demonstrated that movement (Figure 4). The analysis revealed that there is a strong relationship between organisational structures and effectiveness, as well as between leadership styles and engagement within schools. The findings suggest that creating a supportive and inclusive environment, where collaboration and shared learning are encouraged, can contribute to the development of a learning organisation. This research highlights the need for educational leaders to adopt effective leadership practices that promote continuous improvement and foster a culture of learning within their schools.

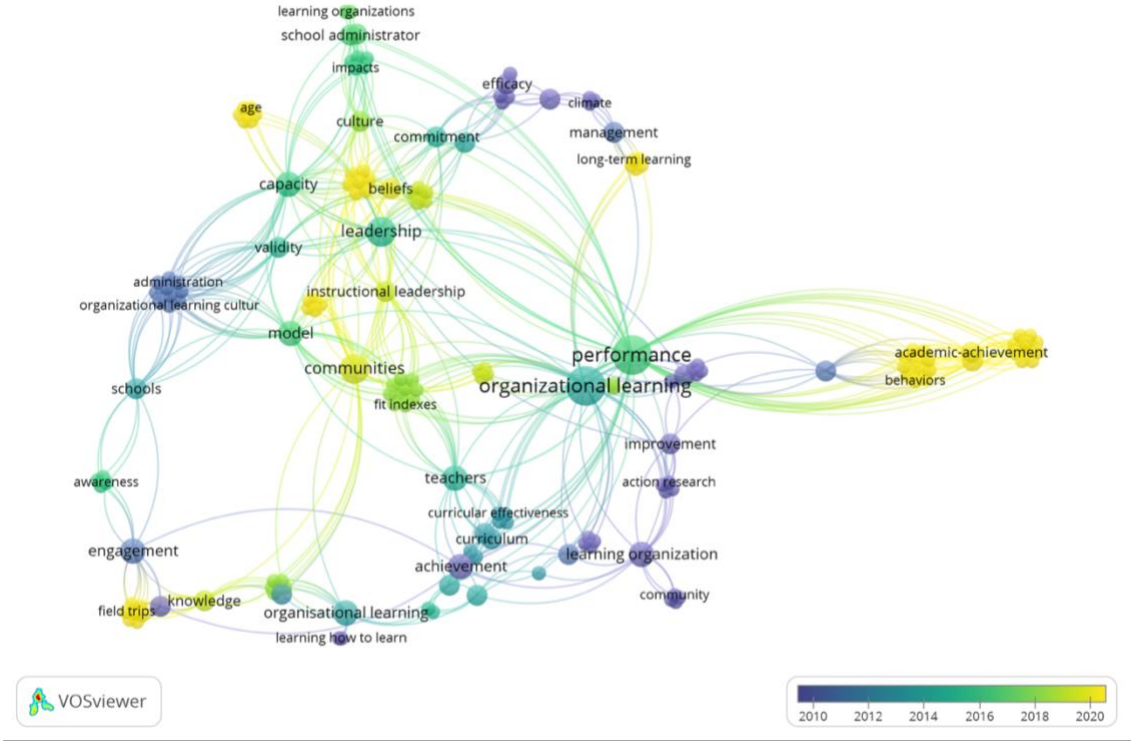
In particular, during 2010~2013 (purple nodes), research on the school as a learning organisation focused on organisational structures, organisational performance and efficacy regarding the interrelationship between teachers, students and curriculum. These studies demonstrated the importance of creating a supportive and empowering environment for teachers and students, where

they feel valued and encouraged to take risks in their learning. Additionally, they brought out the significance of aligning curriculum and instructional practices with the goals and needs of the organisation, ensuring a coherent and meaningful learning experience for all stakeholders involved.

During 2014~2017 (green nodes), academics focused on conceptualising and validating various organisational learning models, highlighting teacher commitment and performance as critical school indicators as a learning organisation. These models indicated the importance of fostering a culture of continuous improvement and professional development among teachers. They also highlighted the need for strong leadership and effective communication within the school to support the implementation of these learning models.

From 2018 until the present (yellow nodes), more attention has been paid to tackling the areas of instructional leadership, community engagement, peer influence, creativity, and long-term learning opportunities. These areas have been identified as key factors in promoting student engagement and achievement. Additionally, these connections have shown that incorporating these elements into the school environment can lead to increased motivation and a sense of ownership among students. As a result, schools have been implementing strategies such as project-based learning, community partnerships, and professional learning communities to address these areas and enhance overall student outcomes.

Figure 4. The Movement of Research Focus on School as Learning Organisations from 1975 to 2022 (The author, 2024).



In summary, a school as a learning organisation can change and adapt routinely to new conditions and situations as its members, individually and together, discover their approaches to realising their shared vision (Schleicher, 2015). This ability to adapt and change is crucial in preparing students for the rapidly evolving world they will enter after graduation. By fostering a culture of continuous learning and improvement, a school as a learning organisation equips its students with the skills and mindset necessary to thrive in an ever-changing society. Therefore, constructivist environments in schools require supportive school leadership to effectively foster a culture of continuous learning and improvement (Harris, 2003; Harris et al., 2007). Such leadership plays a crucial role in guiding teachers and students as they adapt and change their approaches to realize their shared vision for education and should not be limited to the formal role of principals (Schleicher, 2015).

Educational leadership is not limited to students' learning targets only but is also extended to a more substantial inclusion of teaching and non-teaching staff learning. The meaning of leadership in schools also opened to the broader concept of pioneering constructive guidance regardless of a teacher's management level (Crowther et al., 2008). This broader concept of leadership in schools recognises that all teachers, regardless of their management level, can provide constructive guidance and contribute to the overall improvement of education (Shen et al., 2012). It reinforces the importance of continuous learning and development for both teaching and non-teaching staff, fostering a collaborative and supportive environment for everyone involved in the educational process (Zhang et al., 2021).

To sustain teacher capabilities for the future, it is crucial for any school to re-culture their working environment and teacher's professional learning activities (Eaker et al., 2002). By creating a culture of continuous learning and professional development, schools can empower their teachers to stay updated with the latest educational practices and research. This not only enhances their teaching skills but also enables them to effectively support their colleagues in their growth and development (Maynard, 2001). Additionally, investing in teacher professional learning activities helps schools attract and retain high-quality educators, ultimately leading to improved student outcomes. That kind of learning culture helps the school to be informed of their organisational development and staff engagement status continuously (Hallinger et al., 2020). This continuous monitoring allows schools to make the necessary adjustments and improvements to better support their educators and ultimately enhance student success.

However, despite the unique demand for developing schools as learning organisations, there is a lack of measurable toolsets to evaluate a school's learning and development progress. Scholars have not yet found consistent criteria for such a firm needle to support principals (Field, 2019). This gap in measuring progress poses a challenge for principals who are seeking to foster a culture of continuous improvement within their schools. Without a reliable toolset, it becomes difficult for principals to track and assess the effectiveness of their efforts in developing the school as a learning organisation. Consequently, there is a need for further research and the development of assessment criteria that can provide meaningful insights into a school's learning and development progress.

2.5 The Moderation Effects of School Culture on Teachers' Job Satisfaction

The priority of any school leader is to ensure the sustainability of their school through generations rather than only a few academic years. Therefore, they must continuously strive to cultivate a positive and inclusive environment where all students and staff can thrive and succeed. However, it is not easy to collect accurate time series and panel data on such developments. Thus, scholars have developed various approaches to define school culture and teachers' job satisfaction, as notable indicators of suscessful leadership. (Bootz et al., 2019) stated that school culture is the irreplaceable foundation for leaders to increase their creativity, human capital, knowledge mobilisation process, foresight, knowledge management needs and challenges. According to their study, a positive school culture fosters an environment where leaders can effectively tap into the collective intelligence of their staff, encouraging collaboration and innovation. Additionally, a strong school culture enables leaders to better anticipate and address the evolving needs and challenges of their educational community.

Van Houtte & Van Maele (2011) considered school culture as the aggregation of national regional culture, individuals, groups and sub-groups' beliefs, norms, customs, and capabilities. Understanding and effectively managing school culture requires leaders to consider the diverse perspectives and experiences of their educational community. By appreciating and valuing the various cultural influences within a school, leaders can create an inclusive environment that promotes equity and respect. This not only enhances collaboration and innovation but also ensures that the evolving needs and challenges of all stakeholders are taken into account in decision-making processes.

Tushman & O'Reilly (2002) proposed the congruence model of leadership, in which culture is one of four main pillars that ensure the organisation's desired mission and vision. According to their work, school culture plays a crucial role in aligning the institution's mission and vision with its overall goals and objectives. By understanding and leveraging the cultural influences within a school, leaders can effectively shape the organisational culture to support the desired outcomes. This model emphasizes the importance of creating a shared sense of purpose and values among all members of the educational community, ultimately leading to a more cohesive and successful institution.

Wagner (2006) also shared a similar perspective and introduced the School Culture Triage Survey as a quick assessment to evaluate a school's culture. This toolset allows leaders to identify areas of strength and areas for improvement in the school's culture. This assessment can help leaders

make informed decisions and implement targeted strategies to create a positive and supportive environment for all stakeholders.

On the one hand, cultural readiness toward innovation will increase the school's organisational learning capacity by creating school-based learning communities for both teaching and non-teaching staff (Anderson & Sice, 2016). On the other hand, forming learning organisations is an innovative management approach to enhance school governance effectiveness, impacts, and culture (Barnard, 2020). By fostering a culture of innovation, schools can encourage collaboration, creativity, and continuous improvement among staff members. This can lead to the development of new teaching methods, curriculum enhancements, and the implementation of technology to enhance student learning experiences. Additionally, a positive and supportive school culture can also improve student engagement, motivation, and overall academic performance.

The influence of principalship and teacher leadership over teachers' job satisfaction is a complex interplay that extends beyond the direct impacts of school leaders and teachers themselves. Other factors that also participate in this process can be triggered by students, parents, district leaders, as well as the government (Elena et al., 2010). For example, students' behaviour and academic performance can greatly impact teachers' job satisfaction. Additionally, the support and resources provided by district leaders and the government can also play a significant role in shaping teachers' overall job satisfaction. However, within the scope of this research, regarding the yearning to define educational leadership in the school context, the researcher focuses on the impact of school culture, including the interactions between school leaders, teachers themselves, and their peers. These interactions within the school culture can have direct or indirect influences on teachers' job

satisfaction. The researcher aims to explore how positive and supportive relationships between school leaders, teachers, and peers can contribute to a more satisfying work environment for educators.

Globally, researchers reported findings about the moderating role of school culture on the relationship between school leadership and teachers' job satisfaction. These findings highlight the importance of creating a positive and supportive school culture that can enhance teachers' job satisfaction. It suggests that a supportive school culture is necessary to complement effective school leadership, which may not be enough to increase job satisfaction. For instance, Sadeghi et al. (2013) confirmed the negative effect of non-supportive leadership styles that maintain power distance over teachers' satisfaction. This suggests that a combination of effective leadership and a supportive school culture is crucial for promoting teachers' satisfaction in their work environment.

You et al. (2017) indicated that teachers' perception of the school climate and support from peers and leaders have positive impacts on their satisfaction. In a broader aspect, Kouali (2017) emphasised the importance of organisational communication practices over the influence of principalship on teachers' satisfaction, including formal communications from the school, as well as individual interactions that contain various personal attributes. These findings suggest that not only do teachers value a positive and supportive school culture, but they also place importance on effective communication within the organisation. On the one hand, various studies have shown that school culture is a moderator of the influence of school leaders and teachers' job satisfaction. On the other hand, such moderation effects in the influence of teacher leadership over teachers' job satisfaction still need to be confirmed. Further research is required to determine the extent to

which teacher leadership influences job satisfaction within a positive and supportive school culture. Understanding this relationship can provide valuable insights for school leaders looking to enhance staff satisfaction and overall school performance. Additionally, exploring the specific communication strategies and practices that contribute to a positive school culture can help inform effective leadership approaches to fostering collaboration and community among staff members.

2.6 Trajectory of Research on Teachers' Job Satisfaction

The term job satisfaction has been investigated since the mid-twentieth century by Locke (1969) as a form of *"the pleasurable emotion state"* (p.316). Locke's research on job satisfaction paved the way for further exploration into its various dimensions and factors influencing it. Over the years, researchers expanded various ways to determine the notation of job satisfaction as well as explore the relationship between job satisfaction and employee productivity, organisational commitment, and overall well-being. For instance, Vroom (1964) focused on the intermediate roles of belief and expectation over employee performance and satisfaction. This expanded the understanding of job satisfaction beyond just the pleasurable emotional state and highlighted the role of cognitive factors. Additionally, subsequent studies have also examined the impact of job satisfaction on other organisational outcomes, such as employee turnover and job performance, further deepening our understanding of its significance in the workplace (e.g. Hosley et al., 1994).

Spencer et al. (1983) proposed a theoretical framework that consists of employee's motivation, effort, and perceptions about their current working environment. This framework suggests that job satisfaction influences an employee's motivation to put in the effort and affects their perception of the working environment. It also implies that a satisfied employee is more likely to be motivated

and engaged, leading to higher levels of job performance. Furthermore, this framework provides a basis for understanding how job satisfaction can impact other organisational outcomes, such as employee turnover, as it suggests that dissatisfied employees may be more likely to seek alternative employment opportunities.

During the late twentieth and early twentieth centuries, educational researchers started borrowing this research topic to explore the emerging issues in modern education management, such as the reason behind teachers' intention to leave. They sought to understand the factors influencing teachers' decision to quit their profession, including aspects like job satisfaction, workload, and professional development opportunities. Additionally, researchers aimed to identify strategies and interventions that could be implemented to improve teacher retention rates and ultimately enhance the overall quality of education. Their findings revealed the crucial role of teachers' behaviour, besides other well-known moderators related to organisations and peers.

In particular, Billingsley (1993) conducted a systematic review of prior works and highlighted that teachers' satisfaction and intention to leave can be affected by macro factors such as economic and political issues, organisational-related factors, and the teacher's individual issues. In summary, some of the macro factors that can impact teachers' satisfaction and intention to leave include the state of the economy, government policies on education, and societal attitudes towards teaching as a profession. Organizational-related factors such as school leadership, resources, and support systems also play a significant role in teacher retention. Additionally, individual issues like work-life balance, personal fulfilment, and career growth opportunities can influence a teacher's decision to stay or leave their profession.

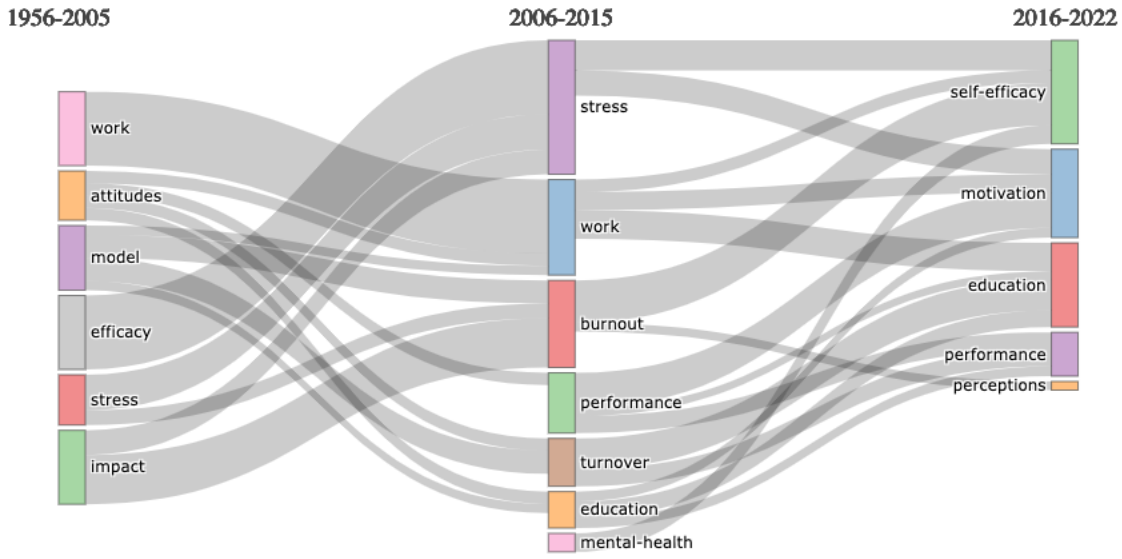
In another attempt, Borman & Dowling (2008) also implemented a meta-analysis to portray an up-to-date overview of factors that influence teachers' satisfaction and retention. Their findings revealed that factors such as teacher autonomy, professional development opportunities, and supportive colleagues were strongly associated with higher levels of job satisfaction and an increased likelihood of teacher retention. Furthermore, the study highlighted the importance of a positive school climate and a sense of belonging within the teaching community as key factors in keeping teachers engaged and committed to their profession.

The educational context is not the same as in other working environments. In a school, teachers interact with different stakeholders, such as students, peers, school leaders, parents, community leaders, etc. These interactions require teachers to possess strong communication and interpersonal skills to effectively collaborate and address the diverse needs and expectations of each stakeholder. Additionally, teachers must navigate complex power dynamics and maintain a professional demeanour while promoting a positive learning environment for their students. However, it is a fact that most of the research on teachers' satisfaction borrows the theoretical framework from prior literature in other industries (Saks, 2006; Lopes & Oliveira, 2020). This lack of specific research on teachers' satisfaction within the education field may limit our understanding of the unique factors that contribute to their job satisfaction (Zakariya et al., 2020). Therefore, there might be some limitations regarding the unique working conditions of the school, which prior literature did not tackle. As a result, further research is needed to explore the specific challenges and rewards that teachers experience in their profession and to develop targeted strategies for improving teacher satisfaction and retention rates.

The Social Exchange Theory (SET) describes engagement as an aggregation of intercommunication and activities between individuals (Cropanzano & Mitchell, 2005). SET suggests that individuals engage in social interactions and activities with the expectation of receiving rewards and benefits in return. In the context of job satisfaction, teachers may engage in various interactions with students, colleagues, and administrators, expecting support, recognition, and a positive work environment in exchange for their efforts. This idea also fits with the explicit and tacit knowledge flows in the SECI framework of Nonaka (1990). In the SECI framework, explicit knowledge refers to formal and codified information that can be easily shared and transferred, while tacit knowledge refers to personal insights, skills, and experiences that are more difficult to articulate and transmit. In the context of job satisfaction for teachers, engaging in interactions and activities with students, colleagues, and administrators can facilitate the exchange of both explicit and tacit knowledge, leading to professional growth and development (e.g. Zhu et al., 2023). Overall, teachers' intrinsic beliefs and motivations can influence their job satisfaction and intention to leave or stay, and vice versa. Additionally, this knowledge exchange can contribute to a positive work environment where teachers feel supported and acknowledged for their efforts.

Figure 5. Evolution of Research Focus on Teachers' Job Satisfaction from 1956 to 2022

(The author, 2024)



The above Sankey flow (figure 5) demonstrates the research focus on teachers' job satisfaction from 1975 to 2022, using the dataset of 720 journal articles (as mentioned in Table 1). This comprehensive dataset allows for a thorough analysis of the trends and changes in teachers' job satisfaction over almost five decades. By examining a large number of journal articles, researchers can gain valuable insights into the factors influencing teachers' job satisfaction and how it has evolved over time. Regarding the three time slices in this figure, we can see that the starting points of this research topic are about teachers' stress and models. Within the first decade of the twenty-first century, the emerging research topics are the job satisfaction (Ho & Au, 2006), turnover (Choi & Chung, 2018), retention (Renzulli et al., 2011), attitudes (Kiralp & Bolkan, 2016), and burnout (Wang et al., 2015). These emerging research topics reflect a shift in focus towards understanding the factors that contribute to teachers' job satisfaction and well-being. The inclusion of turnover,

retention, attitudes, and burnout suggests a growing recognition of the importance of creating supportive work environments for teachers.

On the right side of the figure, there is an interesting movement from turnover and retention to leadership. This shift towards examining the role of leadership concerning turnover, retention, attitudes, and burnout highlights the need for a comprehensive understanding of how leaders can create supportive work environments for teachers. Additionally, exploring the impact of teachers' satisfaction on educational leadership may lead to a reevaluation of traditional notions and practices in this field. Also, this might be a signal for the need to revisit the notation of educational leadership, especially considering the role of teachers' satisfaction.

2.7 Literature Gaps

Regarding the above-structured literature review, the researcher came up with four major gaps in existing works about educational leadership, school culture, and teachers' job satisfaction. First, there is a lack of a rounded framework that contains both principalship and teacher's self-leadership. Globally, researchers overfocused on the functions and influences of head teachers and principals (Hallinger et al., 2020). Previous studies (e.g. Angelle & Dehart, 2010; Sebastian et al., 2016) included both principals and teachers in their data collection. However, they measured teachers' perceived perspective about the principal only rather than their own leadership capabilities. To address this gap, it is important to consider the role of teachers' self-leadership in educational leadership research. By examining teachers' leadership capabilities and their impact on school culture and job satisfaction, a more comprehensive understanding of the dynamics within educational institutions can be achieved. Additionally, exploring the relationship between

principalship and teachers' self-leadership can provide valuable insights into how these two aspects interact and influence each other in promoting effective educational leadership practices. To date, the framework proposed by Pan & Chen (2020) is one of a few that tackle school leadership through the prism of continuous learning and development. This framework emphasizes the importance of ongoing professional growth for principals and teachers alike, comprehending that effective leadership requires a commitment to lifelong learning. By incorporating this perspective, educational institutions can foster a culture of continuous improvement and create opportunities for collaboration and innovation among all stakeholders. Furthermore, adopting such a framework can help address the evolving challenges and complexities faced by schools in today's rapidly changing educational landscape.

Second, as noticed by Field (2019), there is a need for frameworks that measure the conditions for schools' development as learning organisations, as well as to guide the continuous learning journey and develop the adaptive competencies of both teachers and principals. Such frameworks should not only focus on the academic achievement of students but also consider the overall learning and growth of other stakeholders, including teachers, principals, and other non-teaching staff. These frameworks should also take into account the importance of creating a positive and inclusive school culture that promotes collaboration, innovation, and continuous improvement. Additionally, they should provide guidance on fostering strong relationships between schools and their communities to ensure a holistic approach to education.

Third, as mentioned by Hallinger (2020) and Fernandes (2019), there is a dominance of Western scholars in the corpus of existing literature about educational leadership. This dominance of

Western scholars in the literature limits the perspectives and voices of scholars from non-Western contexts. It is crucial to include diverse perspectives to gain a comprehensive understanding of educational leadership across different cultural and societal contexts. In recent years, there has been an emergence of authors and publications from emerging economies. However, the change is gradual. This gradual change can be attributed to various factors such as limited access to resources and opportunities for scholars from non-Western contexts. Additionally, the dominance of Western scholars in academic publishing and citation practices also perpetuates the existing power dynamics in the field of educational leadership research. Efforts should be made to actively promote and amplify the voices of scholars from non-Western contexts to ensure a more inclusive and balanced representation in the literature. Especially, regarding the context of internationalising education systems and schools in this VUCA/TUNA world, there are differences in national culture and school culture that require localisation while adopting a framework that has been proposed or generalised from a different context. By incorporating diverse perspectives and experiences, the field of educational leadership research can better address the complexities of internationalizing education systems and schools in today's global context. In brief, there is a need for localised adaptations while still drawing from broader frameworks, allowing for a more nuanced understanding of the challenges and opportunities faced by different cultural contexts.

Last but not least, there is a gap in the moderation role of school culture over the influence of teacher leadership on teachers' satisfaction. This gap highlights the need for a comprehensive approach to school cultures that appreciates and values the contributions of both teacher leadership and effective moderation. By addressing this gap, schools can create an environment that fosters teacher satisfaction and ultimately enhances overall educational outcomes. As schools strive to

renovate their teaching and learning environment, by valuing the contributions of both teacher leadership and effective moderation, schools can foster an environment where teachers feel valued, supported, and satisfied in their roles. This, in turn, can lead to improved educational outcomes for students and increased engagement from parents in the school community.

2.8 Hypotheses Development and Conceptual Framework

Following the findings from the above literature review, this section focuses on developing hypotheses and a conceptual framework based on the core elements of the Social Exchange Theory (SET) (Homans, 1958) and the SECI model (Nonaka, 1990), which emphasize the importance of knowledge creation and sharing within organizations. SET suggests individuals engage in social interactions for benefits, while SECI proposes a four-step process for knowledge transfer and innovation.

At first, SET offers multiple aspects to understanding the perceived logic beneath individuals' behaviours, communications, and relationships that influence the self's trust and satisfaction with social connections (Cropanzano & Mitchell, 2005). These aspects include the evaluation of costs and rewards, the comparison of alternatives, and the consideration of norms and expectations.

The central concept of SET is reciprocity, in which individuals engage in social interactions to exchange tangible and intangible benefits Tsai & Kang (2019). Reciprocity suggests that individuals are more likely to engage in cooperative behaviours when they expect a fair and equitable exchange of resources. Additionally, SET emphasizes the importance of trust and

satisfaction in social connections, as these factors influence an individual's willingness to engage in future exchanges and contribute to knowledge transfer and innovation.

Another element of SET is the comparison level, in which individuals often set certain levels of expectations about the outcome they should receive in exchange for what they are willing to contribute to the relationship (Cook et al., 2013). An individual's comparison level is influenced by past experiences, social norms, and cultural values. It helps individuals determine whether they are being treated fairly and if the benefits they receive outweigh the costs of their contributions. By considering the comparison level, individuals can make informed decisions about their participation in cooperative habits and maintain a sense of fairness in their social interactions.

Chernyak-Hai & Rabenu (2018) examined the fitness of SET in the working conditions of the 21st century and suggested that SET needs to be adjusted to be able to tackle the rapid changes in organisational and individual characteristics and requirements. The authors argue that in today's fast-paced and dynamic work environment, the traditional SET framework may not fully capture the complexities and nuances of modern organizational dynamics. They propose that a more flexible and adaptable version of SET should be developed to effectively address the evolving needs and expectations of both individuals and organizations.

Thus, overall, rather than adapting the original SET model, this research adopted the essential idea of SET as the stepping stones to building hypotheses for this research project, in which teachers' involvement in knowledge-circulating activities will be measured in both ways: receiving and sharing. By measuring teachers' involvement in knowledge-circulating activities from both the

receiving and sharing perspectives, this research aims to gain a comprehensive understanding of their engagement in the knowledge exchange process. This approach acknowledges the multidimensional nature of knowledge circulation within organizations and provides a more holistic view of teachers' participation in this dynamic process.

To extend further findings about value exchanges between teachers, this project focuses on the aspect of knowledge exchange. According to the SECI framework (Nonaka, 1990), knowledge circulation – the backbone of knowledge circulation, is not a step but a flow which gathers cumulative knowledge from each individual – the smallest parts of the organisation – to sub-groups, groups and the whole organisation. This flow of knowledge exchange is essential for teachers to continuously learn and improve their teaching practices. By understanding how knowledge circulates within a school or educational institution, we can identify the key factors that facilitate effective knowledge exchange among teachers. Additionally, studying this aspect can also shed light on the barriers or challenges that hinder the flow of knowledge and suggest strategies to overcome them. Thus, examining organisational practices is a proper approach to understanding the ontology of organisational strategies, structures, and processes.

Nonaka’s SECI model clustered the knowledge-generating and transferring process into four phases: Socialisation (Tacit knowledge is transformed into other tacit knowledge); Externalisation (Tacit knowledge is transformed into explicit knowledge); Combination (Explicit knowledge is transformed into different types of explicit knowledge); and Internalisation (Explicit knowledge is converted into tacit knowledge). These four phases in Nonaka's SECI model highlight the dynamic nature of knowledge creation and transfer within organizations. By recognizing the importance of

both tacit and explicit knowledge, this model provides a framework for understanding how knowledge is shared and utilized throughout an organisation. Additionally, by understanding these phases, organizations can identify potential bottlenecks or gaps in their knowledge management processes and develop strategies to address them.

The context in which knowledge circulation happens and is triggered is called Ba (Basho – Japanese for 'place'). There are also differences between Ba and communities of practice. The purpose of communities of practice is to learn within a stable community of group members, while the goal of Ba is to generate new knowledge. In a Ba, knowledge is not only created through interactions within a stable community but also through the dynamic exchange of ideas and perspectives with external individuals or groups. This fluidity allows for a constant flow of knowledge and innovation, making Ba an essential component of effective knowledge management strategies. There is no need for a sturdy structure for a Ba, which is bounded but always open (Yamaguchi, 2006).

Regarding the four phases above, the SECI model also presents four kinds of Ba: Originating Ba (Socialisation process between the environment and individual); Dialoguing Ba (Externalisation process between individuals within a group); Systemizing Ba (Combination process between different groups); and Exercising Ba (Internalisation process, the individual as the convergent of their group, organisation and external environment). In further phases of this research, the SECI framework will be adopted to measure the school's knowledge circulation effectiveness. This framework will help to assess how effectively knowledge is being shared and utilised within the school. By applying the SECI model, researchers will be able to identify any gaps or areas for

improvement in the school's knowledge circulation process. This information can then be used to implement strategies that enhance knowledge sharing and ultimately improve overall organizational performance.

Table 3 summarises the focus of existing literature on the school's organisational knowledge circulation, exchange and transfer practices, using the SECI's taxonomy of Ba (Nonaka & Konno, 1998). For instance, knowledge socialisation and internalisation processes require similar organisational practices, which are related to teachers' individual engagement (Bowen et al., 2007), self-mission (OECD, 2016), and self-leadership (Gil et al., 2019). On the other hand, externalisation and combination processes involve a shared mission (Silins et al., 2002a), a shared responsibility (Fullan, 1995), an interdisciplinary collaboration (DuFour, 1997), informational analytics (Higgins et al., 2012), and knowledge sharing activities (OECD, 2016). These organisational practices are essential for creating a conducive environment for knowledge socialisation and internalisation processes. They help foster individual engagement, self-mission, and self-leadership among teachers. Similarly, externalisation and combination processes require a shared mission, shared responsibility, interdisciplinary collaboration, informational analytics, and knowledge circulation activities to effectively combine and externalise knowledge within the organisation. In other words, influential school culture is a critical pathway to optimising such organisational practices to boost the SECI spiral, which will further lead to disruptive organisational innovation.

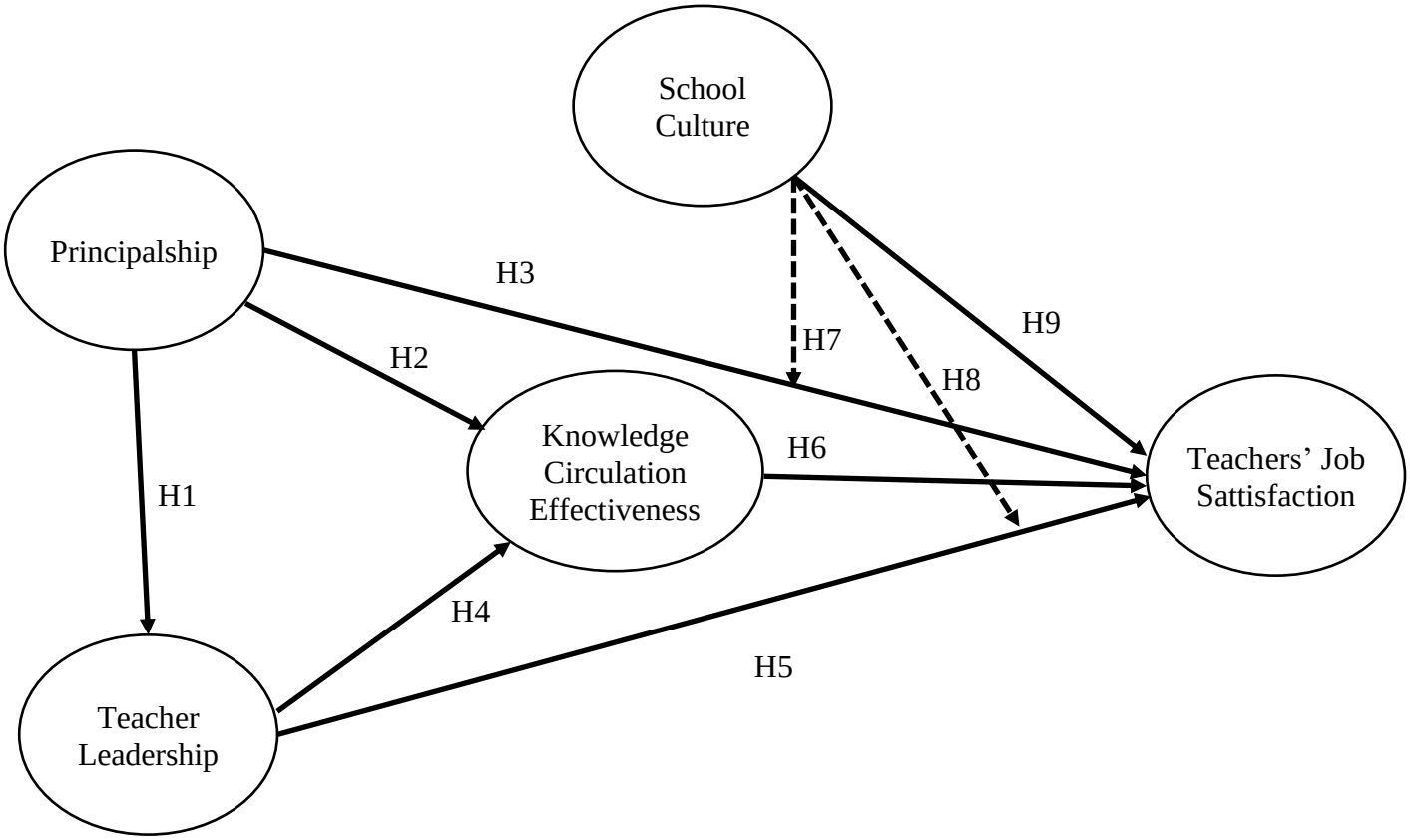
Table 3. Prior studies on knowledge circulation practices within the school context regarding four phases of the SECI flow (The author, 2024).

Author	Socialisation (Originating ba)	Externalisation (Dialoguing ba)	Combination (Systemising ba)	Internalisation (Exercising ba)
Fullan (1995)	Give teachers the time they need;	- Establish an academic day - Share the responsibility: finger-pointing and evasion must end.	- Reinvent schools around learning, not time - Invest in technology - Develop local action plans to transform schools	Give teachers the time they need;
Dufour (1997)	- Attention to orientation - Long-term success and survival - Professional sharing	- Interdisciplinary teams - Peer Observation - Study Groups - Action Research	- Collaborative structure supported by time - School Improvement Task Forces	Commitment to professional development
Silins *et al.* (2002)	Taking initiatives and risks	Shared and monitored mission	Shared and monitored mission	- Trusting and collaborative climate - Professional development
Bowen *et al.* (2007)	- Innovation - Common purpose	Team orientation	- Respect - Optimism	Involvement
Higgins *et al.* (2012)	Seeking information, all with a strong emphasis on curriculum, instruction and student achievement	Receiving and disseminating information	Analysing and storing information	Retrieving and putting information to use

OECD (2016)	- Creating and supporting continuous learning opportunities for all staff - Learning with and from the external environment and a more extensive learning system	Promoting team learning and collaboration among all staff	- Embedding systems for collecting and exchanging knowledge and learning - Modelling and growing learning leadership	- Establishing a culture of inquiry, innovation and exploration
Gil *et al.* (2019)	- Learning leadership - Learning cultural	Learning structure	Learning structure	Learning opportunities

Relying on the theoretical foundations of SET and SECI to tackle the research questions proposed in Chapter 1, the researcher came up with a conceptual framework for this study (Figure 6). The primary assumption underpinning these hypotheses considers the involvement of principals and teachers in knowledge-circulating activities as the act of exchanging values in order to create and receive more values for themselves. Overall, those social exchange activities lead to teachers' job satisfaction. This conceptual framework is a multi-stage framework that describes the relationships between antecedents, mediators, and moderators of teachers' job satisfaction. In the coming chapters, those relationships will be examined using empirical data from Vietnamese K-12 schools in order to finalise the theoretical contribution of this project.

Figure 6. Conceptual Framework and Proposed Research Hypotheses (The author, 2024).



The primary antecedent of this research project is principalship, which is expected to influence teacher leadership (H1) (Printy & Liu, 2021), Knowledge Circulation Effectiveness (H2) (Printy & Liu, 2021), and teachers' job satisfaction (H3) (Hariri et al., 2016). Principalship plays a crucial role in shaping the overall school environment and culture, thereby impacting teacher leadership. Additionally, effective principalship has been found to positively influence the circulation of knowledge among teachers and ultimately contribute to their job satisfaction. In particular, hypotheses from 1 to 6 will examine research question 1 about the *"definition of educational leadership within K-12 context"* and question 2 about *"the influenc of educational leadership over organisational knowledge circulation effectiveness",* while hypotheses from 7 to 9 will tackle

research question 3 about *"the moderation effect of school culture over educational leadership and teachers' job satisfaction."*

Hypothesis 1: Principalship Influence Teacher Leadership

Regarding Hypothesis 1, Silins & Mulford (2002) indicated that teachers' perception of school leader's leadership also informs their perceived value of the teaching job, abilities to collaborate, and possibilities to enhance their work performance. This suggests that the leadership style and effectiveness of principals can significantly impact not only teacher leadership but also their overall job satisfaction and performance. Furthermore, a study by Leithwood et al. (2004) found that principals who prioritise creating a positive school culture and fostering teacher collaboration tend to have higher levels of teacher job satisfaction and increased effectiveness in their roles.

Scholars also discussed the different influences of various leadership styles on teacher leadership under multiple circumstances. For instance, Dimmock & Walker (2005) concluded the variance of the same concept of distributed leadership in different cultures. Their study suggests that the effectiveness of distributed leadership may vary depending on cultural factors. Additionally, another study by Harris (2013) found that transformational leadership was particularly effective in promoting teacher leadership in schools with high levels of diversity and complexity.

Within the Western context, distributed leadership might lead to vast empowerment across the entire organisation. However, in Asian contexts like Hong Kong, Singapore, and Vietnam, it only applies to the nearest subordinates. Thus, the same concept of distributed leadership might empower or limit bottom-line teachers, depending on the national culture, school culture or

structure (Berry, 2019). Therefore, it is important for educational leaders to consider the specific characteristics of their schools and national cultures when implementing distributed leadership practices. Additionally, future research should further explore the relationship between cultural factors and the impact of distributed leadership on teacher empowerment in different educational contexts.

Besides, other studies also shared multi-facets of applying various leadership styles in educational contexts, such as Emotional Leadership, Servant Leadership (Cerit, 2009; van Dierendonck & Nuijten, 2011), Instructional Leadership (York-Barr & Duke, 2004), and Distributed Leadership (Da'as, 2022). Overall, across the globe, various works indicated that principal leadership influences teacher leadership. These studies highlight the importance of considering different leadership styles and their potential impact on teacher empowerment in diverse educational settings. Future research must investigate deeper into the specific cultural factors that may influence the effectiveness of distributed leadership practices in schools, as this understanding can inform more targeted and contextually appropriate approaches to leadership development and implementation. Overall, across the globe, various works indicated that principal leadership influences teacher leadership.

Hypothesis 2: Principalship Influence Knowledge Circulation Effectiveness

Regarding Hypothesis 2, Da'as (2022) determined that the broader the scope a principal has for knowledge sharing, the higher the creativity and involvement their teachers have. This suggests that principals who actively promote and facilitate knowledge circulation among their teachers create an environment that fosters innovation and engagement. Additionally, Da'as (2022) found

that principals who devote time to knowledge sharing also contribute to the professional growth and development of their teachers, leading to improved instructional practices and student outcomes.

Zeinabadi & Abbasian (2022) confirmed that the principal's role model, trust, expectations, and encouragement foster teachers' knowledge-sharing practices. These findings highlight the importance of principals not only encouraging knowledge sharing among teachers but also actively modeling and fostering a culture of trust and support. By setting high expectations and providing encouragement, principals can create an environment where teachers feel motivated and empowered to share their knowledge and expertise with their colleagues. This ultimately leads to continuous professional growth and improved educational outcomes for students.

Wang et al. (2022) shared similar results about the positive impacts of principalship on teachers' knowledge circulating habits. Their study found that principals who place importance on knowledge sharing and create a supportive culture also enhance collaboration among teachers. This collaboration, in turn, leads to the development of innovative teaching practices and the sharing of effective strategies for students' and teachers' success. Overall, the research underscored the crucial role of principals in fostering a culture of knowledge circulation and collaboration within schools.

Using data from the OECD's Teaching and Learning International Survey (TALIS), Torres (2019) revealed that the principal's distributed leadership is associated with higher teachers' job satisfaction and a more engaging school culture. Furthermore, the study found that principals who prioritize collaboration and knowledge sharing create a supportive environment where teachers feel valued and empowered. This not only improves job satisfaction but also encourages teachers

to experiment with new teaching methods and adapt their practices to better meet the needs of their students. Ultimately, this leads to a more dynamic and effective learning experience for both teachers and students. Overall, prior studies have figured out the influence of principalship on knowledge circulation effectiveness within the school context.

Hypothesis 3: Principalship Influence Teachers' Job Satisfaction

Regarding Hypothesis 3, the existing body of research has demonstrated that principals have the ability to directly influence the level of job satisfaction experienced by teachers through their managerial directions and actions (Ho & Au, 2006), communication and guidance (Szeto, 2020), empathy and other similar emotional approaches (H. Wang et al., 2015), regulations and other working conditions (Billingsley, 1993). Furthermore, research has shown that principals who prioritize creating a positive and supportive work environment tend to have higher levels of teacher job satisfaction (Hoy et al., 2006). Additionally, studies have found that principals who effectively communicate expectations and provide opportunities for professional growth also contribute to higher job satisfaction among teachers (Hill et al., 2017).

In addition, principals have the ability to indirectly influence the level of satisfaction experienced by teachers through the provision of salary and allowance (only for private or independent schools) (Borman & Dowling, 2008), instructional programs (York-Barr & Duke, 2004), continuous training and development programs (S. Zhang et al., 2022), and opportunities for teachers to develop their leadership capabilities (Canrinus et al., 2012).

Furthermore, the principal's assistance in helping teachers overcome challenges (Vogel & Schwabe, 2016) and the creation of a supportive environment and positive engagement with

students and parents are also critical factors in fostering teachers' job satisfaction (Beabout & Jakiel, 2011). In addition, research has shown that a collaborative and inclusive school culture, where teachers feel valued and supported by their colleagues and administrators, can significantly contribute to teachers' job satisfaction (Liu, 2020). Moreover, providing opportunities for professional growth and advancement, such as mentoring programs or access to conferences and workshops, can further enhance teachers' satisfaction in their roles (Fullan, 1995).

The second flow of hypotheses focuses on the impacts of Teacher leadership on Knowledge Circulation Effectiveness (H4) (Gul et al., 2019) and teachers' job satisfaction (H5) (Skaalvik & Skaalvik, 2014). These hypotheses suggest that teacher leadership plays a crucial role in enhancing the effectiveness of knowledge circulation within educational settings. Additionally, they propose that teacher leadership is also linked to teachers' overall job satisfaction, indicating the importance of empowering teachers in decision-making and professional development.

Hypothesis 4: Teacher Leadership Influences Knowledge Circulation Effectiveness

First, related to the direct impact of teacher leadership on knowledge circulation effectiveness, Gul et al. (2019) highlighted the irreplaceable role of teachers. While principals can issue policies and regulations that support the development of schools as learning organisations, the teachers themselves hold the soft power to trigger or hinder such initiatives. Teachers, as instructional leaders, have the ability to create a positive and collaborative culture within their classrooms, which in turn promotes knowledge sharing among students. Additionally, their expertise and experience allow them to identify and address any barriers or challenges that may arise during the circulation of knowledge within the school community.

Crowther (1997) offered a framework for teacher leadership that emphasised the transformative roles of teachers within knowledge sharing and professional development. This framework highlights how teachers can not only facilitate the sharing of knowledge among their students but also play a crucial role in the growth and development of their fellow educators. By taking on leadership responsibilities, teachers can actively contribute to the creation of a supportive and innovative learning environment that benefits both students and colleagues alike. Ultimately, this approach to teacher leadership has the potential to positively impact the overall educational experience within the school community.

Regarding the context of Vietnamese K-12 education, Phan et al. (2020) and Duong et al. (2021) also raised the importance of considering teachers' continuous professional development as a medium for constructing learning communities that can connect teachers, students, parents, local communities, and global communities. Their findings suggested that by prioritizing continuous professional development, teachers can stay updated with the latest educational research and practices, allowing them to effectively implement innovative teaching strategies in the classroom. This not only enhances student learning outcomes but also fosters a sense of collaboration and shared learning among colleagues. Additionally, by connecting with various communities, teachers can broaden their perspectives and gain valuable insights that can further enrich their teaching practices.

The recent systematic review by Siddiqui et al. (2021) on teacher leadership also reaffirmed the importance of teachers' involvement as mentors and coordinators of professional development

activities for their growth and job satisfaction. The review found that when teachers take on leadership roles, they not only contribute to their own professional development but also inspire and empower their colleagues. This collaborative approach to professional growth creates a supportive and dynamic learning environment for both teachers and students alike. Moreover, the study spotlighted the need for educational institutions to recognize and support teacher leadership initiatives as an integral part of improving overall educational quality.

Hypothesis 5: Teacher Leadership Influences Teachers' Job Satisfaction

Considering Hypothesis 5, factors that affect teachers' job satisfaction are not limited to the school context only. Zhang et al. (2021) pointed out that teachers also have to handle their own personal issues, such as family issues, marriage problems, individual concerns and needs. However, it is impossible for school leaders to tackle all of those demands from all of their staff. These personal issues can significantly impact a teacher's overall job satisfaction, as they may create additional stress and distractions in their professional lives. Therefore, it is crucial to recognize the importance of addressing both school-related and personal factors when examining the influence of teacher leadership on job satisfaction. However, it is impossible for school leaders to tackle all of those demands from all of their staff. Therefore, besides the principals' efforts toward a supportive and empathetic work environment, teachers' efficacy and their roles in directing and leading themselves through obstacles also contribute to defining the status of their job satisfaction (Hoang, 2020).

Within the scope of this research project, the researcher limits teacher leadership to their ability to guide themselves through different stages of learning and development. In other words, this project

focuses on the importance of teachers' ability to navigate their own learning and development, which is considered a form of teacher leadership. According to Pan & Chen (2020), such abilities include communicating a learning vision, supporting professional development, initiating curricular and instructional improvement, and fostering a better teaching environment. By developing these leadership skills, teachers can effectively collaborate with their colleagues, inspire their students, and drive positive change within the school. Additionally, Pan & Chen (2020) have shown that when teachers are empowered to take on leadership roles, they feel a greater sense of ownership and investment in their work, leading to increased motivation and job satisfaction. Ultimately, this creates a ripple effect that benefits not only the teachers themselves but also the entire school community.

Hypothesis 6: Knowledge Circulation Influences Teachers' Job Satisfaction

This research also examines the mediation effect of Knowledge Circulation Effectiveness (using the SECI framework) over the influence of educational leadership (a congruent of principalship and teacher leadership) on teachers' job satisfaction. Therefore, besides the direct impacts of principal and teacher leadership on knowledge circulation that have been discussed in H4 and H5, this study came up with Hypothesis 6 about the positive influence of knowledge sharing on teachers' job satisfaction. The SECI framework suggests that effective knowledge circulation within an educational institution can enhance teachers' job satisfaction. This hypothesis is based on the belief that when teachers are able to share and exchange knowledge with their colleagues and leaders, they feel more supported and valued in their profession, leading to higher levels of job satisfaction. Additionally, this hypothesis recognizes the importance of a positive school culture that encourages and facilitates knowledge-sharing among educators.

Ma & MacMillan (1999) examined factors associated with teachers' job satisfaction and found that knowledge sharing and teachers' teaching competencies affect each other continuously and lead to higher levels of satisfaction. Furthermore, Ma & MacMillan (1999) discovered that teachers who engage in knowledge sharing not only enhance their own teaching competencies but also contribute to a collaborative and supportive environment within the school. This positive atmosphere fosters a sense of belonging and professional growth, ultimately resulting in increased job satisfaction for teachers.

Elena et al. (2010) stated that, besides individual achievements and emotional concerns, the involvement of teachers in receiving and giving support plays as the bridge between school leaders' leadership and teachers' job satisfaction. Furthermore, their study has shown that when teachers feel supported by their colleagues and school leaders, they are more likely to feel motivated and committed to their work. This support can come in the form of mentorship programs, professional development opportunities, and regular communication and feedback. Ultimately, creating a culture of knowledge sharing and support within schools can lead to a more positive and fulfilling work environment for teachers.

Savas (2013) also confirmed such mediating effects of knowledge-sharing practices within educators' communities of practice. In particular, their work found that knowledge-sharing practices among educators can have a positive mediating impact on their sense of belonging and engagement within their professional communities. This further highlights the importance of fostering a culture of knowledge sharing and support within schools, as it not only benefits individual teachers but also contributes to the overall growth and development of the education system.

Talebizadeh et al. (2021) explored the full mediation effect of knowledge-sharing behaviours during and after teachers attend professional development programs that have been triggered by principals. Their study found that when educators actively engage in knowledge-sharing practices, it enhances their sense of belonging and engagement within their professional communities. This suggests that principals play a crucial role in initiating professional development programs that promote knowledge sharing, ultimately benefiting both individual teachers and the education system as a whole.

Recent studies by S. Zhang et al. (2022) and W. Zhang et al. (2023) also reported that teachers' knowledge sharing plays a mediator role between principalship and teachers' satisfaction. These studies highlight the importance of principals fostering a culture of knowledge sharing among teachers. By creating opportunities for collaboration and providing support for sharing ideas and resources, principals can help improve teachers' job satisfaction and overall effectiveness in the classroom. Additionally, these findings draw attention to the need for continuous professional development programs that not only focus on individual teacher growth but also encourage collective learning and knowledge exchange among educators.

Hypotheses 7, 8, and 9: The Quasi-moderation Effect of School Culture over the Influence of Educational Leadership on Teachers' Job Satisfaction

Besides, the proposed theoretical framework considers the quasi-moderation effect of school culture regarding the effects of principalship (H7) (Edinger & Edinger, 2018), teacher leadership (H8) (Sadeghi et al., 2013), and school culture itself (H9) on teachers' job satisfaction (Weiner & Lamb, 2020). These hypotheses suggest that school culture plays a significant role in moderating

the impact of educational leadership on teachers' job satisfaction. It is believed that a positive school culture can enhance the influence of principals and teacher leaders, ultimately leading to higher levels of job satisfaction among teachers. Additionally, the direct impact of school culture on job satisfaction is also considered in this theoretical framework, indicating that a supportive and positive school culture can directly contribute to teachers' overall job satisfaction.

At first, the moderation effect on the relationship between principalship and teachers' job satisfaction has been discussed by researchers worldwide. Van Houtte & Van Maele (2011) figured out the moderation role of school culture in shaping teachers' norms, beliefs, and satisfaction. You et al. (2017) shared similar findings from the case of Korean middle teachers. Edinger & Edinger (2018) ascertained the involvement of school culture in relationships between leadership, self-efficacy, and social capital on teachers' job satisfaction. By understanding how school culture moderates the relationship between principalship, norms, beliefs, and satisfaction, educators can work towards creating a positive and supportive environment that enhances teacher well-being. Additionally, comprehending the impact of school culture on factors such as leadership, self-efficacy, and social capital can further inform strategies to improve overall job satisfaction among teachers.

However, there is a lack of studies about such moderation effect over the influence of teacher leadership on job satisfaction, as previous works over-focused on the principalship (Hallinger, 2020). Understanding the role of teacher leadership in influencing job satisfaction is crucial for developing effective strategies to improve teacher well-being. By examining the interplay between

principalship, norms, beliefs, and satisfaction, educators can gain insights into how to foster a positive and supportive environment.

Sadeghi et al. (2013) emphasised the moderation role of organisational communications over the impact of leadership and satisfaction. This highlights the need to consider the broader organisational context and communication dynamics when studying the influence of teacher leadership on job satisfaction. Teachers can better understand how to create an environment that supports their overall well-being and job satisfaction by understanding the role that effective communication plays in influencing perceptions and experiences. Furthermore, investigating possible connections between job satisfaction, organisational communication, and teacher leadership can yield insightful information for creating all-encompassing plans that tackle a variety of elements affecting teachers' job satisfaction.

Weiner & Woulfin (2018) made statements about the challenges of developing teacher leadership in urban areas, in which organisational culture and norms play vital roles in elaborating teacher leadership and satisfaction at the same time. Understanding the impact of organizational culture and norms on teacher leadership and satisfaction is crucial for developing effective strategies, educational leaders can implement targeted interventions that address the specific needs and concerns of teachers, ultimately improving their overall well-being and job satisfaction.

Relying on these emerging foundations, this project would like to propose the moderation effect of school culture over the influence of teacher leadership on job satisfaction (H8). Jointly, the final hypothesis (H9) has been drawn from the prior findings about the quasi-moderation effect of

school culture. These hypotheses suggest that school culture plays a crucial role in shaping the impact of teacher leadership on job satisfaction. By understanding the influence of school culture, educational leaders can better design interventions and strategies to support teachers and create a positive work environment. The detailed synopses in Table 4 provide a comprehensive overview of the theoretical basis for these hypotheses, offering valuable insights for future research and practical applications in educational settings.

Table 4. Literature that Supports Proposed Hypotheses (The author, 2024).

Hypothesis	**Literature**
H1: Principalship positively influences teacher leadership.	Silins & Mulford (2002), Leithwood et al. (2004), Dimmock & Walker (2005), York-Barr & Duke (2004), Cerit (2009), van Dierendonck & Nuijten (2011) Harris (2013), Smylie & Eckert (2018), Szeto & Cheng (2018), Berry (2019), Szeto (2020), Printy & Liu (2021), Da'as (2022).
H2: Principalship positively influences knowledge circulation effectiveness.	Cerit (2009), Grissom (2011), Gilles et al. (2018), García Torres (2019), Pan & Chen (2020), Zeinabadi & Abbasian (2022), Da'as (2022), Z. Wang et al. (2022).
H3: Principalship positively influences teachers' job satisfaction.	Billingsley (1993), York-Barr & Duke (2004), Ho & Au (2006), Hoy et al. (2006), Beabout & Jakiel (2011), Renzulli et al. (2011), (Canrinus et al., 2012), Wang et al. (2015), Vogel & Schwabe (2016), Choi & Chung (2018), García Torres (2019), Liu (2020), Szeto, (2020).

H4: Teacher leadership positively influences knowledge circulation effectiveness.	Crowther (1997), Allen (2018), Gul et al. (2019), Phan et al. (2020), Duong et al. (2021), Siddiqui et al. (2021), Landa & Donaldson (2022).
H5: Teacher leadership positively influences teachers' job satisfaction.	Bogler, (2001), Caprara et al. (2006), Skaalvik & Skaalvik, (2014), Wang et al. (2015), You et al. (2017), Hoang (2020), Pan & Chen (2020), Siddiqui et al. (2021), Zhang et al. (2021).
H6: Knowledge circulation effectiveness positively influences teachers' job satisfaction.	Miller Hosley et al. (1994), Ma & MacMillan (1999), Elena et al. (2010), Shen et al. (2012), Savas (2013), Liu (2020), Talebizadeh et al. (2021), Z. Wang et al. (2022), W. Zhang et al. (2023).
H7: There is a moderation effect of school culture over the influence of principalship on teachers' job satisfaction.	Wagner (2006), Van Houtte & Van Maele (2011), You et al. (2017), Elena et al. (2010).
H8: There is a moderation effect of school culture over the influence of teacher leadership on teachers' job satisfaction.	Wagner (2006), Sadeghi et al. (2013), Edinger & Edinger (2018), Weiner & Woulfin (2018), Barnard (2020).
H9: There are influences of school culture on teachers' job satisfaction.	Pashiardis et al. (2018), Weiner & Lamb (2020), Liu et al. (2021).

2.9 Summary

This chapter presented the systematic literature review procedures conducted by the author, literature gaps, as well as the conceptual framework of this study. Overall, by conducting bibliometrics analyses of 1,642 journal articles on six research topics, this chapter revealed that well-defined concepts about educational leadership in previous decades need to be redefined under the circumstances of today's fast-changing world. For instance, the notation of educational

leadership and educational leadership measurement approaches. The finding also stated that there were limited applications of learning organisation theories in the school context, especially for emerging countries. The influences of principalship on teachers' job satisfaction have been examined by many researchers across the globe. However, the influence of teacher leadership, the mediating role of organisation knowledge circulation processes, and the moderating role of school culture still need more investigation. Thereby, this chapter proposed a conceptual framework about the inter-relations between educational leadership, school culture, knowledge circulation process, and teachers' job satisfaction, followed by nine hypotheses. By examining the influence of teacher leadership, the mediating role of organisation knowledge circulation processes, and the moderating role of school culture, this framework seeks to fill gaps in existing research and shed light on how these factors interact to impact teachers' job satisfaction. The nine hypotheses put forth in this chapter serve as a starting point for further empirical investigation and can guide future research in this area. Chapter 3 will explain the methodology of this whole project, along with the research design, to examine those hypotheses and to validate the proposed conceptual framework.

Chapter 3. Methodology and Methods

3.1 Introduction

Even though the knowledge itself and the methods to explore it are subjective, there are complex and systematic liaisons between the scopes of ontology, epistemology, methodology, and research (Scotland, 2012). Eldabi *et al.* (2002) defined research methodology as systems that transparentise researchers' tacit reasonings and assumptions behind their selected research method. The more explicit readers can absorb from that reasoning strategy, the less ambiguity they will judge the study (Vuong, 2020). Accordingly, there will be more chances for the research to increase its impact, as it can be replicated in larger or different contexts regarding the nature of the research problem rather than being limited to particular researchers' special conditions only (Creswell, 2014). Within this section, the researcher discusses the overarching philosophy, doctrines, and rationale behind the selected methods to fulfil this project's research objectives, which aim to establish a framework to measure the influence of educational leadership over organisational knowledge circulation in the Vietnamese K-12 education context. First, the researcher explains the rationale behind the project's methodological approach. Second, the research purposes and overall research approaches are discussed under the section research design. Gradually, those sections establish the foundation to build further research methods, which are explained in the final sub-section of this chapter.

3.2 Methodology

The writer of Ecclesiastes (1: 9,10) indicated that "there is no new thing under the sun" (Thompson et al., 2007). Indeed, one cannot build Rome's whole without relying on precursors' prior knowledge to utilise their limited resources and capabilities. Regarding the development of social

sciences research, each theoretical or empirical approach always contains tacit and explicit differences due to its historical and geographical characteristic (Foucault, 1970). These differences shape the unique perspectives and methodologies employed by researchers in different contexts. Therefore, while there may not be completely new ideas or concepts, the application and interpretation of existing knowledge can vary greatly, leading to advancements in our understanding of the social world. Hence, the purposes of revisiting research philosophies are three folds.

Firstly, researchers can build up their taxonomies of the scholarly approaches in the research topic (Easterby-Smith et al., 2012), which will serve as a map for researchers' journey in the academic world. As a result, both the research objectives of particular research and the researcher's long-term career path can be illuminated. Secondly, by comparing various existing philosophical perspectives, researchers can determine the reasonable prospects and related research approaches (Collins, 2010), as navigators for the particular parts of the whole journey. Thirdly, more comprehensive know-how on research philosophy also supports researchers in reflecting on the prior research approaches and figuring out the new blind spots and/or blank spots, which were not significant issues of the past society or research context (Saunders et al., 2012). By gaining a deeper understanding of research philosophy, researchers can also enhance their critical thinking skills and develop a more nuanced perspective on the limitations and biases inherent in different research methodologies. This can ultimately lead to more rigorous and robust research findings that contribute to the advancement of knowledge in their respective fields. Additionally, a solid grasp of research philosophy allows researchers to effectively communicate and justify their methodological choices to peers, reviewers, and funding agencies, increasing the likelihood of

successful collaborations and securing future research opportunities. In overall, the process of forming a suitable research paradigm will help researchers elevate research quality, efficiency and effectiveness right from the starting point (Hallebone & Priest, 2008).

The most influential philosophical stances adopted by social scientists are interpretivism and positivism (Ponterotto, 2005). Interpretivism emphasizes the importance of understanding social phenomena through subjective experiences and meanings. It acknowledges the role of individual perspectives in shaping social reality. On the other hand, positivism demonstrates the use of scientific methods to study social phenomena, aiming for objectivity and generalisability. These two philosophical stances provide different approaches to conducting research and assessing social issues, contributing to the diversity and richness of social science disciplines.

Regardless of the differences between inquiry paradigms such as positivism, post-positivism, interpretivism, constructivism, and critical theory, they all share similar metaphysical foundations (Guba & Lincoln, 1994). These metaphysical foundations include the belief that reality is socially constructed and subjective, and that knowledge is influenced by individual perspectives and experiences. However, each inquiry paradigm offers unique epistemological and methodological perspectives, which shape the way researchers understand and study social phenomena. These differences in approach allow for a more comprehensive understanding of complex social issues and contribute to the ongoing development of social science disciplines.

Ajzen & Fishbein (1975) noticed that researchers' presumptions and beliefs often initiate most scholarly works toward their research journeys, necessary inventories to conduct the research, and

research strategies. The researcher's personal experiences, theoretical frameworks, and social context can all have an impact on these presumptions and beliefs. By acknowledging and critically examining these factors, researchers can better understand their own biases and limitations, leading to more robust and nuanced research findings. Additionally, the diversity of perspectives within the research community fosters intellectual debate and encourages the exploration of alternative explanations, ultimately enhancing the overall quality of social science research.

Regarding the above typical philosophical approach to conducting research, there are two essential perspectives to define a study that have been considered the backbones of the social sciences: ontology and epistemology (Lincoln & Denzin, 1994; Slevitch, 2011; Yilmaz, 2013). While ontology answers the questions about existence and reality (Creswell, 2014), epistemology reveals the mosaic of knowledge regarding its nature, origin, and limitations (R. B. Johnson & Onwuegbuzie, 2004). These two perspectives provide a framework for researchers to understand the fundamental nature of their study and guide their approach to data collection and analysis. By considering ontology and epistemology, researchers can ensure that their research is grounded in a clear understanding of the subject matter and the ways in which knowledge is constructed and validated in their field. This philosophical approach helps to establish a solid foundation for social science research, promoting rigor and credibility in the findings. Sepkoski (2007)stated that ontology recapitulates epistemology – by studying the reality, existence, and being of a particular concept, people also tackle the question of *"How we know what we know?"*.

Strictly speaking, through examining the absolute existence of a particular object, whether in its physical or metaphysical shapes (Bryman, 2003), people also explore, reflect, and rechallenge the

ways in which up-to-date knowledge around particular research objects has been formed (Corbin & Strauss, 1990). This exploration of knowledge formation is crucial for researchers, as it allows them to critically examine and question the validity and reliability of existing knowledge in their field. By understanding the nature, origin, and limitations of a concept, researchers can better navigate the complexities of their research and contribute to the advancement of knowledge in their field. Consequently, detailed interpretations of those philosophical stances will shed light on researchers' convictions and premises about research approaches and navigate the research executions (Cohen et al., 2002).

Even though the differences between ontological and epistemological stances are undeniable, it is challenging for social scientists to reach an alignment on how we should classify our suppositions about the nature of reality and the way we learn about it (Rescher, 2003). Quine & Ullian (1978) initiated the phrase "web of belief" to describe human depictions and perceptions of our society, in which any component of that belief structure can be changed due to irregularities. Sometimes, such irregularities can be observed from the debates around the roles of ontology and epistemology in today's fast-changing world, which witnesses the rise of pragmatism. For instance, regarding the influence of the ontological approach in modern social research, Lauer (2019) classified two types of approach: realist and pragmatist. He also argued that ontology's pragmatic interpretation is prior to social scientific methodology rather than the traditional concept of social ontology. In response to Lauer (2019), Little (2021) further reaffirmed that the pragmatic interpretation of ontology prioritises the practical application of social scientific methodology over abstract conceptualisations. The study argued that the ontological theory serves as a tool for reasoning and understanding reality, rather than providing an all-encompassing depiction of it. By aligning with

Quine & Ullian (1978), Little (2021) highlighted the importance of incorporating our current beliefs and knowledge to accurately reflect the nature of our world and society. Therefore, regardless of social development level and context, revisiting the ontological and epistemological approaches is crucial for any social science research.

3.2.1 Positivist Research Approach

Positivism is a prominent approach since Ancient Greeks, which has been formally conceptualised in the early 18th century, by the French sociologist Auguste Comte - the founding father of Sociology (Cohen et al., 2010). Relying on epistemological stances; positivist researchers favour experiences and positive substantiations as the exclusive pathway to form convincing knowledge (Crotty, 1998). This approach acknowledges the importance of empirical evidence and scientific methods in understanding the social world. Positivist researchers believe that by studying observable phenomena and using rigorous research techniques, they can uncover universal laws and patterns that govern human behavior.

Relies on the observable facts and the associations between them, Comtean positivism – the approach named after Auguste Comte, presumes that the development of human society across varied periods will reach the peak of scientific or positive (Comte, 1975). Comtean positivism argues that the progression of human society will ultimately lead to a state where scientific knowledge and empirical evidence are highly valued. This approach underscores the need for rigorous research methods to uncover universal laws and patterns that govern human behavior. However, since the early 18th century, the rise of critics of this metaphysical system has been partially observed (Wellek, 1955). Initiated by Giambattista Vico, the separation of natural history and human history as separate research areas was followed by Montesquieu (Croce, 1964). Those

idealists declared that natural history does not exist under human manipulation, while human history is a kind of creature. They reinforced the importance of understanding the specific context and complexities of human societies in order to truly comprehend their development and behavior. Thereafter, this stand led to the formation of the anti-positivism tendency in the 20th century (Halfpenny, 1982). Notable leading scholars of those critics are Max Weber, Georg Simmel, and Jurgen Habermas (Delanty & Strydom, 2003). Also, the ascending adoption of quantitative techniques to gather larger datasets from complex social contexts also strengthens the antagonism with positivism (Morgan, 2007). This movement towards qualitative research methods challenged the positivist belief in objective and value-free social science.

Besides the increasing critiques, a variety of adjustments and improvements around positivism have been introduced, such as (i) Radical (or inductivist) positivism, which considers facts as the essential research objects (Keuth, 2015); (ii) Empirio-criticism, a radical empiricist philosophy which has been developed by Richard Avenarius (Lenin, 1908); or (iii) Machian positivism, which inherited the rigid principals of Empirio-criticism and believed in a physical concreteness behind metaphysical concepts (Banks, 2003). These adjustments and improvements have aimed to address some of the limitations and criticisms of positivism, such as its neglect of subjective experiences and its failure to account for the influence of social and cultural factors on scientific inquiry. By incorporating elements of induction, empiricism, and a focus on concrete physical phenomena, these variations of positivism attempt to provide a more comprehensive understanding of social science research. Given that historical development of positivism approaches, scholars need to define their positions within the interrelated context with the world, research subjects and research objectives. Otherwise, a failure in choosing philosophical stance will lead to ambiguity and

misleading research design, especially if the research objective is to form theory from real-life data (Easterby-Smith et al., 2012).

Regarding positivist approaches to measuring leadership, besides the traditional quantitative analyses of quantitative data (Parry, 1998), there are also quantitative analyses of qualitative data (Mumford et al., 2008). However, Gronn and Ribbins (1996) argued that positivist approaches to measuring leadership do not cover institutional contexts' importance toward forming the leadership terminology. They suggest that a more holistic approach, such as a qualitative analysis of qualitative data, is necessary to fully understand the complexities of leadership within different institutional contexts. This would allow researchers to capture the nuances and contextual factors that influence leadership dynamics, leading to a more comprehensive and accurate understanding of the phenomenon. Parry (1998) also shared a similar idea and argued that relying solely on quantitative approaches to measure leadership can be limiting because it fails to capture the rich and nuanced aspects of leadership within different institutional contexts. He suggested that a more comprehensive understanding can be achieved through qualitative analysis of qualitative data, which would provide a deeper insight into the complexities of leadership dynamics. By incorporating both quantitative and qualitative approaches, researchers can gain a more holistic understanding of leadership and its impact within various institutional contexts.

3.2.2 Post-Positivist Research Approach

The positivist dispute is far from over, regarding both the case of German sociology and sociology in general. There are several post-positivism approaches that have been developed by scholars worldwide to response to anti-positivism, as well as to criticise and complement positivism. For instance, Logical positivism's continuing development – an independent movement from Comtean

positivism, which refuses metaphysics (Blumberg & Feigl, 1931); and Durkheimian positivism, which applies correlations analysis to expose relationships between facts (Durkheim, 2014). Post-positivism revisited the essential mechanism of positivism regarding the possibility of constructing objectivity within research models about human's attitudes and behaviours. Additionally, post-positivism acknowledges the role of values and biases in shaping knowledge production, leading to a more reflexive approach to research design and analysis (Creswell, 2014).

Regarding the ontological viewpoint, post-positivism (also known as post-empiricism) supposes the undeniable influences of researchers' prior beliefs, assumptions, and knowledge over the research subjects (Ormston et al., 2014). This recognition challenges the idea of a completely objective and value-free research process, as researchers' perspectives inevitably shape the way they interpret and analyze data. Post-positivism demonstrates the importance of acknowledging and addressing these biases in order to produce more accurate and nuanced findings. In a larger context, post-positivists believe that humans' subjective inferences are the foundations of our knowledge, rather than any immutable or permanent underpinnings (Onwuegbuzie, 2002). For instance, Proctor (1998) proved that the structure of reality could be precisely affected by contextual aspects such as gender, culture, and individual convictions. These contextual aspects can influence how researchers perceive and interpret data, leading to potential biases in their analysis. Additionally, post-positivism highlights the importance of reflexivity, encouraging researchers to critically reflect on their own assumptions and perspectives throughout the research process. This self-awareness can help mitigate the impact of biases and contribute to more robust and reliable findings.

From the epistemological perspective, there are also impediments for humankind to understand the structure of social reality due to its own complexity (Lincoln & Denzin, 1994). The complexity of social reality makes it challenging for researchers to fully comprehend its structure. This complexity arises from the multitude of interconnected factors and variables that influence social phenomena, making it difficult to isolate and analyze individual components. Consequently, researchers must approach their studies with caution and acknowledge the limitations inherent in their understanding of social reality.

Regarding methodological aspects, post-positivism approaches forming diverse viewpoints to understand humans' beliefs in and about their reality (Guba & Lincoln, 1994). In particular, post-positivism's dualism approach allows researchers to demonstrate objectivity and subjectivity in the same research (Sprague & Zimmerman, 1993). However, ensuring the reliability of such multiple research objects is not an easy task. Therefore, post-positivists acknowledge the intricate interdependence enclosed by the beliefs, attitudes, and behaviours of individuals, sub-groups, and groups (Crossan, 2003). In other words, post-positivists engage more with social circumstances, groups, and sub-group-related data to reinforce the contribution of grounded theory in modern research. That substructure of beliefs is the foundation for triangulation – the way positivists adopt various data collection methods to collect multiple types and sources of data to explore a particular circumstance (Clark & Creswell, 2008).

Gronn & Ribbins (1996) suggested two post-positivist approaches: ethnography and biography as alternatives for positivist studies in leadership. Ethnography involves immersing oneself in a particular social setting to understand the cultural norms and practices that influence leadership

dynamics. This approach allows researchers to gain a deep understanding of the context in which leadership occurs and how it shapes group dynamics. Biography, on the other hand, focuses on studying the life stories of leaders to uncover the personal experiences and influences that shape their leadership styles and decisions. These post-positivist approaches offer valuable insights into leadership that go beyond traditional positivist methods.

Also, there are other post-positivist research approaches to define leadership such as narrative inquiry (Watson, 2013), grounded theory (Kempster & Parry, 2011), and action research (Wu et al., 2017). Each of the above approaches can include the external contexts into leadership's social construction processes (Ribbins & Gronn, 2000). By incorporating external contexts into leadership's social construction processes, post-positivist research approaches provide a more comprehensive understanding of leadership. These approaches allow researchers to explore the complexities of leaders' lives and examine how their experiences and influences shape their decision-making and leadership styles. This broader perspective offers valuable insights that can enhance our understanding of effective leadership in various contexts. However, to date, there is still a typical limitation of post-positivist approaches: the subjectiveness of researchers, which might eliminate several aspects and settings of the research objects and contexts (Raelin, 2020).

3.2.3 Interpretivist Research Approach

Interpretivism is the research approach that has been developed to fulfil the limitation of using the positivism approach or post-positivism approach only (Myers, 2008). Typical interpretivism approaches are (i) Hermeneutics, which focuses on interpreting and understanding bibliographical and literature data; (ii) Phenomenology, which prefers forthright experiences; and (iii) Symbolic interactionism, which considers symbols as social and culturally transmitting objects (Littlejohn

& Foss, 2009). These approaches allow researchers to further understand the subjective meanings and interpretations of individuals, as well as the social and cultural contexts in which these meanings are constructed. By embracing interpretivism, researchers can gain a more comprehensive understanding of human behavior and social phenomena.

Conjecturing the omission of objective reality, interpretivism regards the construction of meanings rather than discovering meanings. Accordingly, the sole use of quantitative techniques to measure social concepts might lead to meaningless findings (Furlong & Marsh, 2002). Therefore, interpretivist researchers adopt qualitative data from interviews and observations as well as quantitative data to capture the rich and nuanced aspects of people's understandings, perceptions, and attitudes about a concept or phenomenon (Saunders et al., 2012). This approach allows researchers to acquire knowledge about concepts that are antecedents or social events, as well as being formed by such social presences. By combining qualitative and quantitative data, researchers can gain a more comprehensive understanding of social concepts and phenomena. This mixed-methods approach enables them to capture the complexity and depth of people's experiences, providing a more holistic view of the subject matter. Additionally, it allows for the exploration of causal relationships and the identification of potential influencing factors that may not be evident through quantitative analysis alone (Saunders et al., 2012).

Depending on their beliefs about the subjective, volatility, and complexity of reality, interpretivist scholars consider themselves a part of the on-going social event, in which they have the duty to identify the meanings of social phenomena (Collis & Hussey, 2013). Saunders et al. (2012) also shared a similar idea about interpretivist researchers' involvement in the context of their research

subjects. The more empathy researchers can generate between them and their research object, the more profound insights about research subjects' beliefs and values researchers can receive. For all of its advantages, interpretivism is also something of a double-edged sword. For instance, there are critiques of the over-dependent interpretivists' research subjects' individual or collective perspectives (Furlong & Marsh, 2002). Alvesson & Szkudlarek (2020) recognised a risk as a barrier to gauging the accuracy of formed knowledge, as interpretivists just replace researchers' individual subjectives with other diverse and collective subjective. This risk can potentially lead to a lack of objectivity in interpretivist research, as it relies heavily on subjective interpretations rather than concrete facts or data. Additionally, the diverse and collective subjective perspectives may introduce biases or limitations that could affect the validity and reliability of the research findings. Therefore, researchers using interpretivism must carefully consider these potential drawbacks and employ rigorous methods to ensure the credibility of their interpretations.

Besides, there are worries about interpretivism's ability to theorise and generalise its findings to larger social contexts, as participants' idiosyncratic nature differs between contexts (Easterby-Smith et al., 2012). Parry et al. (2014) noticed that, even though there is not yet an alignment of how researchers should mix qualitative and quantitative methods to measure leadership, this approach's adoption is emerging. However, interpretivism's contributions to qualitative research areas (e.g., organisational culture, leadership, and ethical issues), in which researchers have to deal with intangible research objects, are undeniable (Lindlof & Taylor, 2017).

3.2.4 Philosophical Stances and Paradigm usage within this Research

This research's ontological stance is that there are multiple realities, which are shaped by people's beliefs, presumptions, values, actions, and interactions. These multiple realities can be seen as subjective interpretations of the world, where individuals construct their own versions of reality based on their unique perspectives and experiences. Regarding epistemological perspectives, this research aims to understand the structure of K-12 educational leadership and its influence on the organisational knowledge circulation process. Thus, the findings of this study rely on the subjective perspectives of teachers and school leaders. This perspective allows for a deeper exploration of the subjective perspectives of teachers and school leaders, providing valuable insights into their beliefs, values, and actions in relation to educational leadership. However, even though the researcher used to be a teacher and school leader, he is independent and objective in this research. Besides, the research also includes the verification of hypotheses through scientific testing. Hence, it is located in the positivism paradigm. Table 5 summarises the underpinning paradigm, ontology, epistemology, methodology, and methods of this research.

Table 5. Underpinning Philosophical Stances and Paradigms of this Research*

Item	Explanation
Paradigm	• Positivism
Ontology	• Multiple realities are socially constructed and influenced by people's beliefs, assumptions, values, actions, and interactions.
Epistemology	• The researcher is independent and objective. • Verification of hypotheses through scientific testing. • Understanding the reality from research subjects' perspectives.
Methodology	• Inductive reasoning, moving from data to theory. • Hypothetical deductive, moving from theory to data. • Hypothesis testing. • Measure quantitative data.
Methods	• Document analysis • Questionnaires

*Adapted from Guba & Lincoln (1994), Collis & Hussey (2013), (Creswell, 2014), and Saunders *et al.* (2012).

This research first studied prior literature, and its prevalent themes will be utilised for questionnaire design. Klein & Myers (1999) highlighted the importance of participants' experiential levels and the clear and low-biased associations between investigators and research subjects. Besides, as the primary data from interpretivist studies is densely related to personal and social context (Collins, 2010), its reliability is low. Therefore, the researchers consider qualitative data from prior literature

as the source of knowledge for inductive reasoning, supplemented by further deductions and explanations using post-positivist approaches.

From a broader prism, regarding this project's aims and objectives, the researchers adopt the nomothetic positivist (or empiricist) approach (Gay & Weaver, 2011) to explore the case study of educational leadership and knowledge circulation within the Vietnamese K-12 education context.

Within the area of education leadership study, Bryman (2003) stated that qualitative research can reveal the nature of the circumstances that affect leadership. However, together with Bryman (2003), (Leithwood & Jantzi, 2005) criticised the ability to generalise findings of qualitative studies on education leadership, especially regarding the relations of the educational leadership concept with other variables (e.g. students' learning effectiveness). Recently, scholars often used quantitative questionnaires to measure school structure (Elmore, 2000; Toole & Louis, 2002), school processes (Silins & Mulford, 2002), and school practices (M. M. Harris & van Tassell, 2005; McCharen et al., 2011). Also, there were various attempts to measure education leadership using quantitative surveys, such as The Four Factors Model of Teacher Leadership (Angelle & Dehart, 2010); Enacting Teaching Leadership (Lai & Cheung, 2015); Teacher Leadership Framework (Cheung et al., 2018). Therefore, in this study, the researchers also chose quantitative questionnaires as our approach. In the coming section, qualitative and quantitative research methods which follow the above research paradigm are introduced.

3.3 Research Design

The nature of the research is exploratory and explanatory, toward the aim of understanding how knowledge is generated on an organisational basis under the influence of leadership within the educational context. Exploratory studies are often implemented to acquire an in-depth understanding of the phenomenon's holistic structure and related factors (Stebbins, 2001) to generate hypotheses for further investigations (Robson & McCartan, 2016). The first stage of this research aims to explore educational leadership practices in the Vietnamese K-12 education context, regarding the influence of principalship over teacher leadership (Research question 1). Elements of educational leadership will be constructed through a literature review using bibliometric analysis. Bibliometric analysis involves examining patterns and trends in scholarly publications to identify key themes and influential authors in the field of educational leadership. This approach will provide a comprehensive overview of the existing knowledge on educational leadership practices in the Vietnamese K-12 education context, helping to inform the subsequent stages of the research and guide further investigations. Additionally, this literature review will contribute to the development of a theoretical framework that can be used to analyse and interpret the data collected in later stages of the research.

Explanatory approaches are suitable to answer the questions of 'How do research variables interact as regards the existence of the phenomenon?' (Eriksson & Kovalainen, 2015). By examining the various factors and their interactions, explanatory approaches help researchers uncover the underlying mechanisms and processes that drive the phenomenon. Hence, to follow prior findings from exploratory research, explanatory techniques determine interrelations among research variables (Zikmund et al., 2013). The presence of a particular relationship or decision can be

interpreted by mediator variables, which determine the dominance of external factors on the internal psychological flow (Baron & Kenny, 1986). Mediator variables play a crucial role in understanding the complex relationship between research variables. They help researchers identify the factors that influence the phenomenon and determine the extent to which external factors impact internal psychological processes. By considering mediator variables, researchers can gain a deeper understanding of the underlying mechanisms driving the phenomenon and make more accurate interpretations of their findings.

In addition, the study will also examine several moderation effects. Sharma et al. (1981) defined moderators as the influence factors that can strengthen or weaken a relationship. By examining moderation effects, researchers can identify specific circumstances or contexts in which the relationship between variables may be different from what is typically observed. This allows for a more nuanced and comprehensive understanding of the complex dynamics at play within a research study. Therefore, examining those factors can contribute to a better understanding of how leadership's influence on organisational knowledge circulation can be justified.

Overall, this study's explanatory phase consists of a theoretical model of mediating and moderating factors that adjust the influence of educational leadership over the knowledge circulation process (Figure 5). These factors may include the school culture, teachers' motivation, and involvement in knowledge circulation practices. By considering these variables, researchers can gain insights into the various mechanisms through which educational leadership impacts knowledge circulation within the K-12 school context. This theoretical model provides a framework for further empirical research to validate and refine our understanding of these complex

relationships. After being tested by statistical techniques, the integrated model and its findings will present the phenomenon of educational leadership and knowledge circulation in the Vietnamese K-12 context. Besides, those results are also beneficial for scholars who yearn to explore educational leadership at the organisational level in emerging countries.

A research strategy includes the researcher's systematic approaches to tackle research aims and objectives regarding the nature of the research problems (Noor, 2008). As classified by Saunders et al. (2012), there are six frequent research strategies: (i) ethnography; (ii) experiment; (iii) survey; (iv) case study; (v) grounded theory; and (vi) action research. Regarding this research's objective of determining the definition of educational leadership in the Vietnamese K-12 education context, the case study method will explore the hiding phenomenon using teachers' perceptions (Rashid *et al.*, 2019). As regards the purpose of validating the proposed theoretical model and generalising the findings of this study, the adoption of the survey method is suitable (Easterby-Smith *et al.*, 2012).

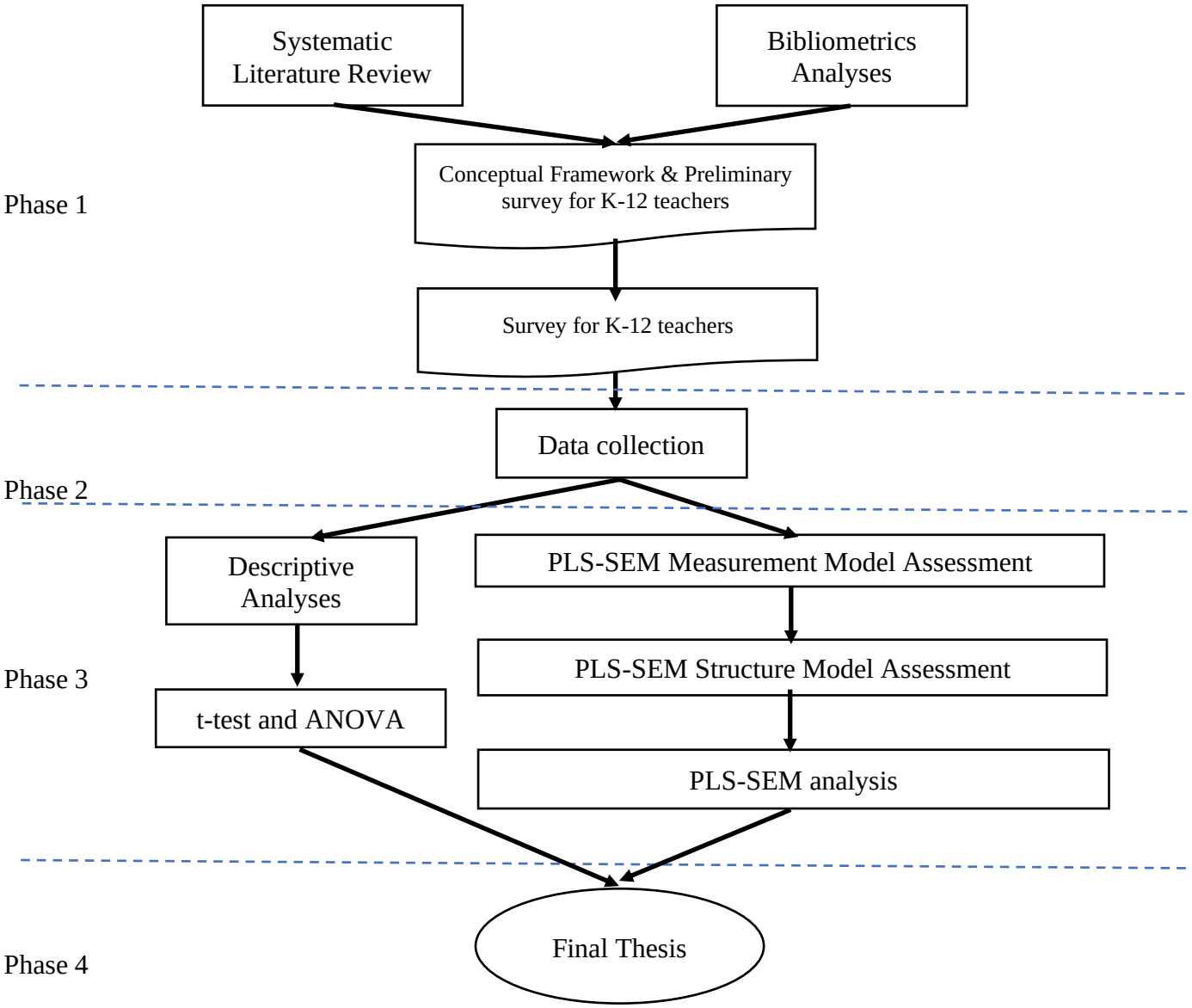
3.4 Research Methods

3.4.1 Overall Methodological Approach

The major approach of this project uses quantitative methods to examine proposed hypotheses. Figure 7 describes the overall research flow. First, in order to build the research framework, this research focused on reviewing existing literature to define the research questions and conceptual framework. Besides regular systematic review, bibliometrics analyses have been adopted to figure out the conceptual structure, intellectual structure, and social structure of the knowledge base (Zupic & Čater, 2015) about educational leadership and teacher satisfaction. To supplement the

results of the literature review and bibliometric analysis, Partial Least Square Structure Equation Modelling (PLS-SEM) analyses will be used for the final explanatory analysis, using empirical evidence from Vietnamese public and private schools. Finally, an overall model of teachers' job satisfaction and school knowledge circulation under the influence of leadership and culture will be drawn.

Figure 7. Research Flow (The author, 2024).



3.4.2 Quantitative Research – Partial Least Squares Structural Equation Modelling

Quantitative Research Instruments

The questionnaire for this study has been developed based on prior literature about various aspects of these topics, such as the role of principals in fostering teacher leadership, the impact of school culture on knowledge sharing, and the relationship between teachers' job satisfaction and their perceptions of organisational knowledge circulation. Additionally, the questionnaire incorporates validated scales and measures to ensure the reliability and validity of the data collected.

The questionnaire consists of five parts, including one part about demographics questions and four parts about research instruments. Within the first part, there are six non-identifiable demographic questions about participants' gender, years of experience, years of experience at the current school, highest level of education, grade level of teaching, and school type. These demographics help to provide context and background information about the participants, allowing for a better understanding of how their perceptions may be influenced.

The remaining four parts dedicated to research instruments focus on capturing various aspects of knowledge circulation within the organization, such as communication channels, collaboration practices, and perceived barriers. By utilising validated scales and measures, the questionnaire ensures that the data collected is reliable and can be confidently used to draw meaningful conclusions about organizational knowledge circulation. These four parts include 77 items, using different Likert scales. To be specific, part two includes 19 research items about teachers' perspectives on principalship. Part three includes 20 items regarding teachers' perspectives on

teacher leadership. All questions in parts two and three are asked using a Likert scale of 4 (1 = Totally disagree; 4 = Totally agree). Part four includes 17 items about school culture, and part five consists of 16 items about the school's knowledge circulation processes. Parts four and five use Likert scales of 6 (1 = Totally disagree; 6 = Totally agree). The final part of this survey includes five research items regarding teachers' self-evaluation about job satisfaction, using Likert scales of 10 (1 = Totally disagree; 10 = Totally agree). The adjustments made to the questions in reverse order were implemented to filter out any invalid responses and ensure the reliability and validity of the final dataset. These filtered questions, such as Questions 6 and 10 in part three and Question 2 in part four, will help eliminate any responses that may not accurately reflect teachers' self-evaluation about job satisfaction. Table 6 summarises the number of research items within each domain and construct, as well as their related supporting literature from the proposed conceptual framework. The full questionnaires (English and Vietnamese versions) can be found in Appendix A.

Table 6. Summarise research items within the proposed conceptual framework (The author, 2024).

Code	Construct	Domain and Code	Items
P-I	Principalship (Leithwood et al., 2020)	Set directions (SD)	4
P-II		Build relationships and develop people (BRDP)	5
P-III		Develop the organisation to support desired practices (DOSP)	6
P-IV		Improve the instructional program (IIP)	4
T-I	Teacher Leadership (Pan & Chen, 2020)	Communicating a learning vision (CLV)	5
T-II		Supporting teacher professional development (STPD)	5
T-III		Initiating curricular and instructional improvement (ICI)	5
T-IV		Bettering teaching environment (BTE)	5
C-I	School Culture (Wagner, 2006)	Professional Collaboration (PC)	5
C-II		Affiliative Collegiality (AC)	6
C-III		Self-Determination/Efficacy (SDE)	6
K-I	Knowledge Circulation Effectiveness (Tsai & Li, 2007)	Socialisation (S)	4
K-II		Externalisation (E)	5
K-III		Combination (C)	4
K-IV		Internalisation (I)	3
S	Teachers' Job Satisfaction (Ho & Au, 2006)	Teachers' satisfaction and intention to maintain their current jobs (TJS)	5

Regarding the first construct of principalship, this study adopted the measurement framework of Leithwood et al. (2020), which contains four main aspects of a principal: (i) Set direction; (ii) Build relationships and develop people; (iii) Develop the organisation to support desired practices; and (iv) Improve the instructional program. The Four Paths Model of Leithwood et al. (2020) provides a comprehensive understanding of the multifaceted role of a principal. By examining the four main aspects, this study aims to assess the impact of principalship on student learning and identify effective strategies for improving educational outcomes. Additionally, the Four Paths Model highlights the increasing need for school leaders to adapt and implement innovative approaches that promote both student and teacher success in today's rapidly changing educational landscape.

To evaluate teacher leadership, the researcher adopted the framework of Pan & Chen (2020), which portrayed the movement of teachers toward a better teaching and learning environment, and also reflects the main idea of SET: organisational norms and expectations foster the conditions and results of social exchanges. The framework of Pan & Chen (2020) contributed to the discourse on principal leadership by identifying the critical path through which it facilitates teacher learning via teacher leadership. It highlights that teacher leadership is not only about individual actions, but also about how the organization supports and encourages collaborative efforts among educators. Understanding this critical path offers practical insights for school leaders aiming to foster continuous learning among educators. Further enhancements from this framework could explore the scalability and adaptability of these pathways in diverse educational contexts, potentially uncovering novel approaches to teacher professional development. By adopting this framework, the researcher aims to assess how organizational norms and expectations influence the

effectiveness of teacher leadership in promoting positive social exchanges within the school community.

To measure school culture, this study follows Wagner (2006), who offered a practical tool for school leaders to assess and improve school culture. Exploring how a positive school culture contributes to broader educational outcomes can inform leaders about creating environments that foster holistic student development. This tool provides leaders with actionable insights to create a positive and conducive learning environment. By utilising Wagner's toolset (2006), school leaders can gain a comprehensive understanding of their school's culture and identify areas for improvement. This knowledge can empower leaders to implement targeted strategies that promote the supportiveness, belongingness, effectiveness of school culture, and overall well-being within the school community. Wagner's framework also expresses the interdependence aspect of SET: actions and decisions of each individual might influence the expectation, outcome, and perceived experience of others.

As regards determining the knowledge circulation effectiveness, the researcher adopted the questionnaire of Tsai & Li (2007), which has been developed to evaluate the knowledge circulation process in Taiwan's new venture, based on Nonaka's SECI framework. The questionnaire consisted of various items that measured the four dimensions of knowledge circulation: socialization, externalisation, combination, and internalisation. These findings from their study provide valuable insights for entrepreneurs and business strategists, as well as serving as foundations for further examinations of the role of knowledge circulation in fostering innovation and adaptability in rapidly changing business environments. By adapting the SECI questionnaires

to the K-12 education context, this research project extends the prior efforts of Tsai & Li (2007), and aims to provide valuable insights for school leaders in their pursuit of sustainable growth. The cultural adaptation of the questionnaire ensures that the findings will be relevant and applicable to the specific population being studied.

Finally, this study uses the Teaching Satisfaction Scale of Ho & Au (2006) to measure teachers' satisfaction and intention to maintain their current occupations. The study by Ho & Au (2006) measured teachers' job satisfaction using comprehensive perspectives of teachers about their current occupations as well as their willingness to maintain their teaching jobs, offering a valuable tool for both researchers and educators. The scale covers various aspects of the teaching profession, providing a nuanced view of factors contributing to teachers' satisfaction. By including multiple dimensions of the teaching profession, such as workload, relationships with colleagues and students, and professional development opportunities, the Teaching Satisfaction Scale offers a comprehensive assessment of teachers' overall job satisfaction. This comprehensive view allows researchers and educators to identify specific areas that may require improvement in order to enhance teachers' satisfaction and ultimately retain them in their current occupations. On the one hand, this research yearns to validate the Teaching Satisfaction Scale proposed by Ho & Au (2006) in the Vietnamese K-12 education context. On the other hand, the study considers the TSS as a main pillar of the overall model of educational leadership, knowledge circulation, school culture, and teachers' job satisfaction. This opens avenues for future research to further explore specific elements affecting job satisfaction, potentially informing targeted interventions for educator well-being.

Study Variables

The proposed conceptual framework includes one primary dependent variable – Teachers' Job Satisfaction (5 items); and a primary independent variable – Principalship (4 latent variables, 19 items). Other mediators include Teacher Leadership (4 latent variables, 20 items), School Culture (3 latent variables, 17 items), and Knowledge Circulation Effectiveness (4 latent variables, 16 items). These variables were selected based on their potential influence on teachers' job satisfaction and the overall effectiveness of the school. The inclusion of multiple latent variables allows for a comprehensive understanding of the various factors that may impact teachers' job satisfaction, providing a more nuanced analysis. Additionally, by including mediators such as teacher leadership, school culture, and knowledge circulation effectiveness, the framework acknowledges the importance of these factors in shaping teachers' experiences and overall job satisfaction.

Data Sampling

The primary sampling method of this project is stratified random sampling. This research project includes one main group of participants: teachers in Vietnamese K-12 schools. The researcher applied a cluster sampling technique to select potential schools, regarding their location, school type and level of education; and a random sampling technique to select teachers from each school. Thereafter, school leaders have been asked to forward the survey to randomly selected teachers. As the participation in this research is voluntary and anonymous, teachers preserve their right to join or to discontinue the survey. The researcher also ensured that the sample size was representative of the population by including schools from different regions and varying levels of education. Additionally, by allowing teachers to choose whether or not to participate, the

researcher aimed to obtain unbiased and genuine responses from those who were willing to contribute to the study.

The researcher recruited participants from Hanoi and Ho Chi Minh City, the two biggest cities in Vietnam. There is no requirement for a teacher's experience. Thus, the teachers' ages ranged from 22 to 60 years old (for females) and 65 years old (for males). To be specific, this project involved teachers from three educational levels: elementary (grade 1 to grade 5), lower-secondary (grade 6 to grade 9), and upper-secondary (grade 10 to grade 12) schools. Besides, there are two types of schools: public and private schools. The researcher aimed to have a diverse sample of participants, including both male and female teachers, from different age groups and educational levels. By recruiting teachers from both Hanoi and Ho Chi Minh City, the researcher ensured representation from the two largest cities in Vietnam. Additionally, including both public and private schools allowed for a comprehensive understanding of the teaching landscape in these cities. Therefore, the participants can be categorized into six distinct clusters based on their gender, age, educational level, and school type.

Following the formula proposed by Yamane (1967), considering the population of more than 1.2 million K-12 teachers in Vietnam, the proper sample for the whole study is 400 participants (Table 7, Appendix C). This sample size ensures a confidence level of 95% and an error margin of 5%. However, besides the minimum number for reliable testing as suggested by Yamane (1967), this research also aims to determine the differences between six school clusters of this project (two types of school - public, private; and three school levels - elementary, lower-secondary, and upper-secondary). As suggested by Krejcie & Morgan (1970), a sample of 75 participants will be enough

for a population of less than one million (Table 8, Appendix C). However, to minimise the risk of missing data, the researcher set a higher expectation, with 75 to 100 teachers per cluster. Overall, according to the fomular of Cochran (1963), as regards the precision level of 5%, confidence level of 95%, and estimated proportion of 0.5, the appropriate sample size should be 385. Thereby, to ensure all of these potential statistical concerns, the initial expectation was a total of 675~900 participants for the whole six school clusters.

Pilot Study

Regarding the chance of misunderstanding questions due to translation and participants' know-how, the researchers asked two external Vietnamese experts to support the proofreading of the Vietnamese translation (invitation letter, PISCF, and questionnaires), who are professors of education management in Australian and British universities. These experts were chosen for their expertise in both the Vietnamese language and the field of education management. Their involvement ensured that the translated materials were accurate and understandable to the Vietnamese participants. Additionally, their experience as editors of Scopus journals guaranteed that the language used in the documents was clear and concise.

The pilot survey was conducted within the first week of October 2021. The purpose of this pilot stage is to standardise the technical terms and correct the questions if necessary to ensure an understandable survey. The researcher randomly contacted one school principal from Hanoi and one school principal from Ho Chi Minh City and asked them to forward the pilot survey to 10~15 teachers in their schools. Their feedback and suggestions were valuable in refining the survey instrument and ensuring its relevance to the target population. Furthermore, the pilot stage allowed

for testing the survey administration process and identifying any potential logistical challenges that may arise during the full-scale implementation. Finally, regarding 26 collected responses, all 77 research items received normal distribution results. Besides, several wordings have been amended to eliminate potential confusion among participants. Thereafter, the survey has been included to apply for ethics approval on 31st October 2021. After two rounds of revisions on 1st December and 16th December 2021, the project was granted ethics approval on 21st December 2021 (No. BLCHEAN 24956).

Data Collection

The researcher used Qualtrics to host an online survey, which was distributed using a stratified random sampling method. The use of Qualtrics allowed the researcher to efficiently collect data from a diverse range of participants. By employing a stratified random sampling method, the researcher ensured that the survey sample represented various demographics accurately. This approach enhances the reliability and generalisability of the study's findings. Also, the participants in this survey are voluntary and anonymous. Participants also reserve their rights to withdraw from this study without any explanation. At the beginning of the survey, the consent form also informed participants all of their rights, potential ethical considerations, research procedures, as well as the storage of the data (see Appendix B).

First, the researcher created a random list of potential K-12 schools in Hanoi and Ho Chi Minh City. Regarding the websites of Hanoi and Ho Chi Minh City's Departments of Education (DOET), till December 2021, there are 1,687 K-12 schools in Hanoi (778 primary, 656 lower-secondary, 253 upper-secondary schools), and 998 K-12 schools in Ho Chi Minh City (500

primary, 280 lower-secondary, 218 upper-secondary schools). Based on those lists, for each city, the researcher randomly selected 100 schools of each level (primary, lower-secondary, upper-secondary), including 80 public schools and 20 private schools. In total, the researcher came up with a list of 600 potential schools (300 schools in Hanoi and 300 schools in Ho Chi Minh City). The researcher's selection of schools was based on a random sampling method to ensure a representative sample of both public and private schools in each city. This approach allows for a comprehensive analysis of the education system in Hanoi and Ho Chi Minh City.

Second, starting from 15th December 2021, the researcher sent out the invitation to those 600 school leaders using their public email, which has been collected from DOET's websites. Within the Letter to School Leaders (see Appendix B), there were detailed explanations about the research project's aims, procedures, ethical considerations, and data protection privacy. If the school leaders are willing to support it, they will forward the survey to 15~20 randomly selected teachers at their school. Also, school leaders are required not to be present during the time the teacher completes the survey. Dated to 29th December 2022, the letter to school leaders was opened by 116 principals (19.33%). There was no data about how many of them forwarded their emails, as well as how many teachers received the email. There was a total of 993 clicks on the survey link, and 654 of them completed the survey (a respondent rate of 65.86%). In specific, there were 354 respondents from Hanoi (54.13%) and 300 teachers from Ho Chi Minh City (45.87%). The survey response rate of 65.86% indicates a relatively high level of engagement from teachers. It would be valuable to analyse the data further to understand any potential differences in responses between teachers from Hanoi and Ho Chi Minh City.

Statistical Analyses

This research adopts both descriptive and inferential analysis techniques to reveal findings from quantitative data. To begin, after cleaning the dataset, the researcher used Microsoft Excel to capture the demographics of the respondents. The descriptive analysis provided an overview of the characteristics of the sample, including measures of central tendency and dispersion. This helped in understanding the distribution of variables such as age, gender, and educational background among the respondents.

Second, several statistical tests were conducted using SPSS. These analyses, on the other hand, allowed for drawing conclusions and making predictions about the larger population based on the collected data. By applying various statistical tests in SPSS, relationships between variables were examined, enabling the researcher to test hypotheses and uncover significant findings. For instance, the means and standard deviations of each measurement variable and construct and Cronbach's alpha test to ensure the normality of the data. Also, the ANOVA test was adopted to explore the differences in principalship, teacher leadership, knowledge circulation activities, school culture, and job satisfaction between clusters of participants.

Thereafter, this study continues with other inferential statistical analyses. First, correlation analyses have been applied to reveal the linkages between variables and constructs. Second, to explore the relationship model between educational leadership, school culture, organisational knowledge circulation effectiveness, and teachers' job satisfaction, using a structural equation model (SEM). Velicer & Fava (1998) determined three essential matters to generalise SEM models: (i) the size of the factor loadings, (ii) the number of variables; and (iii) the size of the

sample. However, Bentler & Yuan (1999) also pointed out that small models with as little as 60 observations can also be estimated by SEM. This statement received support from Tabachnick & Fidell (2013), who said that as long as the constructs are carefully gathered from dependable variables, researchers will still be able to perform SEM with less data.

To thoroughly resolve these concerns, this research applied Partial Least Squares Structural Equation Modeling (PLS-SEM) (Ullman & Bentler, 2012). Initially established by Wold et al. (1983), PLS-SEM has gained its reputation among scholars who want to maximise the explanatory power of the endogenous latent variables, as well as the whole structure model. According to (Hair et al., 2021), PLS-SEM is suitable when there are many constructs, indicators, and relationships within a complex model. Especially, PLS-SEM can tackle the comprehensive path model that has various formatively measured constructs, which regular SEM might face difficulties in explaining. An assorted number of validation techniques, such as the Heterotrait-Monotrait ratio of correlations, condition analyses, endogeneity test, cross-validation test, and prediction model, are essential elements of a PLS-SEM model in which the distributional assumptions are absent. The researcher used the software SmartPLS version 4.0 to perform PLS-SEM analyses. SmartPLS version 4.0 is a widely used software for conducting PLS-SEM analyses due to its user-friendly interface and advanced features (Hair et al., 2011). It allows researchers to easily input their data, specify the measurement model, estimate the path coefficients, and assess the overall fit of the model. Additionally, SmartPLS provides various options for testing the validity and reliability of the constructs, making it a valuable tool for researchers in different fields.

3.5 Summary

This chapter explained the philosophical stances of this research, as well as the detailed designs of qualitative and quantitative research methods. First, the author explained the rationales behind the preferred combination of interpretivism and positivism approaches, in which, the research could benefit from both subjective understanding and objective measurement. This approach allows for a more comprehensive analysis of the research topic, as it considers both individual experiences and generalisable findings. Second, the research design sheds light on the research purposes of this project, which are exploratory and explanatory research to get a better understanding of the influence of leadership and knowledge management within the Vietnamese K-12 education context. Third, the researcher emphasised the key principles of the systematic literature review processes using bibliometrics analyses. The outcomes of those analyses are the proposed conceptual framework, including antecedents, outcomes, mediators, and moderators. Thereafter, this chapter described the research instruments, data sampling calculation, pilot research, data collection process, and data analysis procedures. Finally, the researcher explained the theoretical, methodological, and data triangulation of this project. The data cleaning, data validation processed, and findings from descriptive analyses are presented in Chapter 4. Findings from inferential analyses are discussed in Chapter 5.

Chapter 4. Quantitative Data Presentation and Analysis: Descriptive Analysis

4.1 Introduction

This chapter explains the data validation processes as well as summarises the results of descriptive analyses. The chapter begins with the preliminary data cleaning procedures and demographics of the participants. Thereafter, reliability analyses for each construct and latent variable were conducted using Cronbach's alpha. Finally, this chapter adopted t-test and ANOVA techniques to compare the mean differences in teachers' job satisfaction between various gender groups, experience, experience at their current school, level of education, and school type. The results of these analyses provide valuable insights into the factors that may influence teachers' job satisfaction and can help inform future interventions and policies aimed at improving teacher well-being.

4.2 Demographics of Participants

First, the researcher removed inconsistent responses based on three questions that used reversed Likert scales (T6, T10, and C2). If the respondent answered any of those questions on a scale similar to their answer to non-reverse questions, that observation will be eliminated. The removal of inconsistent responses ensures the accuracy and reliability of the data analysis. By eliminating these observations, the researcher can focus on a more homogeneous dataset, enhancing the validity of the findings. As a result, from the total of 653 received responses, 94 observations have been removed, leading to the final dataset of 559 observations, which provides a robust foundation for drawing meaningful conclusions and insights from the research. The detailed demographics of participants are presented in Table 9. Notable data can be highlighted below:

Gender. Female participants are dominant (n=408, 72.99%).

Years of Experience: The data shows that the majority of participants in this study have more than ten years of experience (n=231, 41.32%). The percentage of teachers who have 3~5 and 5~10 years of experience is similar (21.82% and 25.95%, accordingly). Additionally, it is noteworthy that a relatively small percentage of teachers, only 10.91% (n=61), have less than three years of experience, suggesting a generally stable and experienced teaching workforce.

Years of Experience at their current Schools: Teachers who have worked at their present schools for three to five years are counted for 29.82% of the total, followed by teachers who have been engaged with their current schools for more than ten years, which accounts for 26.78% of the total. The teachers who have five to ten years of experience working at their current schools make up the smallest share (19.29%) of the total.

Level of Education: There are just three teachers who have earned doctoral degrees, which accounts for only 0.71% of the total participants. The majority of the participants are teachers who have earned a bachelor's degree (50.01%). Among the whole population, there were 164 teachers who held master's degrees, which is equivalent to 29.33 percent of the total.

Grade Level of Teaching: The portions of teachers from the three clusters are similar in that each school level has one-third of the total population.

School Type: More than three hundred and eighty-seven percent of the participants were from public schools (n=387), while the remaining thirty-seven percent came from private institutions (n=172).

Location: There is not a significant difference between the number of teachers from Hanoi and Ho Chi Minh City (n=297, 53.13 percent and n=262, 46.87 percent, respectively).

Table 9. Respondent Demographics (n = 559)

Item	Response	Number	Percentage
Gender	Male	147	26.29%
	Female	408	72.99%
	LGBT	2	0.36%
	Non-disclosure	2	0.36%
Total years of experience	Less than 3 years	61	10.91%
	From 3 to 5 years	122	21.82%
	From 5 to 10 years	145	25.95%
	More than 10 years	231	41.32%
Total years of experience at the current school	Less than 3 years	135	24.11%
	From 3 to 5 years	167	29.82%
	From 5 to 10 years	108	19.29%
	More than 10 years	149	26.78%
Highest level of education	Bachelor	392	70.01%
	Master	164	29.33%
	Doctor	3	0.53%
Grade level of teaching	Primary	207	36.96%
	Lower-secondary	174	31.07%
	Upper-secondary	178	31.97%
School type	Public	387	69.23%
	Private	172	30.77%
Location	Hanoi	297	53.13%
	Ho Chi Minh City	262	46.87%

4.4 Descriptive Analyses

4.4.1 Preliminary Reliability Analysis

First, the author examined the normal distribution of the scales using the Skewness and Kurtosis test. While the Kurtosis metric measures “the thinness of the distribution bell”, the Skewness index determines the symmetry or asymmetry of the distribution (Mardia, 1970). These tests help to assess whether the data follows a normal distribution or deviates from it. By analyzing the skewness and kurtosis values, the author can gain insights into the shape and characteristics of the distribution. The purpose of this process is to ensure the validity of further analyses and findings, as well as to strengthen the ability to generalise those findings.

Each item's detailed distribution statistics (Means, Standard deviations, Skewness and Kurtosis indexes) are described in Table 10 (Appendix C). As regards participants’ demographics, there are two categories that are highly skewed to the left side: Grade level of teaching and school type (with z scores of 1.007 and 1.367, respectively). These highly skewed categories indicate that the majority of participants are concentrated towards lower grade levels of teaching and a specific type of school. Other categories have approximately symmetric distributions. All of the 78 measured variables are highly skewed to the right side, with negative z scores from -0.167 to -1.510. As suggested by (Bai & Ng, 2005), the proper Kurtosis value ranges from ± 2.58 (at 10% of significance) and ±1.96 (at 5% of significance). Overall, Table 10 shows that all observed variables have normal distributions, and the dataset is acceptable for further analyses. However, it is important to acknowledge that the skewed nature of the variables may affect the generalizability of the findings to a larger population.

4.4.2 Mean Differences between Groups

According to Parasuraman et al. (1988), to measure the differences in teachers' job satisfaction among groups, the researcher adopted t-tests for categories with two dimensions and ANOVA (Analysis of Variances) for categories with more than two dimensions. These statistical tests were chosen because they are widely used in social science research and provide a reliable way to compare means across different groups. Additionally, by using both t-tests and ANOVA, the researchers were able to capture variations in job satisfaction within and between different groups of teachers, allowing for a comprehensive analysis of the data. Table 11 summarises the differences between various groups of genders, experience, levels of education, current teaching grade level, and school types. Detailed results of t-test and ANOVA analyses can be found in tables 12-19 (Appendix C). In particular, two t-tests examine differences in teachers' job satisfaction between genders and school types (Tables 12 and 19) and six ANOVA analyses for the other categories (Table 13-18). Teachers' job satisfaction was measured using the five dependent variables proposed by Ho & Au (2006), using Likert scales of 10: *S1 (Current job matched their expectation), S2 (Happy with the current conditions), S3 (Overall satisfaction), S4 (Perceived value of being a teacher), and S5 (Intention to maintain their teaching occupations).*

To begin, with regard to the genders of the participants, the researcher only used a t-test to compare the mean differences between male and female teachers. This was due to the fact that there were only two LGBT individuals and two teachers who did not disclose their gender. It appears from the findings that there is no discernible difference between the levels of job satisfaction experienced by male and female educators. In regard to S1, men instructors satisfy their expectations of being teachers to a little greater extent than their female counterparts (0.28 point

difference). According to the Likert scale, the variations between the sexes in each of the other four categories of satisfaction are less than 0.2 (on a scale of 10).

Second, with regard to the total number of years of experience that instructors have, it is interesting to note that teachers who have fewer than three years of experience or more than 10 years of experience are less happy than their colleagues who have been teaching for five to ten years. While their counterparts who have 3-5 years of experience and those who have 5-10 years of experience have an average cumulative satisfaction of 7.78 and 7.50, respectively, the same index for their peers who have 3-5 years of experience is 8.07 and 7.98, respectively.

Third, this study looked into the teachers' experiences at their current school in order to support the findings that were derived from their years of expertise. In general, instructors who have less experience working at their current school report higher levels of satisfaction with their jobs. The average overall satisfaction of teachers who have less than three years of experience and their counterparts who have three to five years of experience at their current schools is comparable (7.96 and 8.02, respectively). This is the case for both groups. In contrast, teachers who had been employed at their school for more than five years and more than ten years reported lower levels of overall satisfaction, with a score of 7.67 and 7.43 respectively across the board. It is remarkable that teachers who have been working at their current school for three to five years have the highest level of satisfaction among the majority of the variables (S1, 2, 3, 5).

Table 11. Summarised Results of Teachers' Job Satisfaction

Mean Differences between Groups

Groups		N	S1	S2	S3	S4	S5	Overall
Gender	Male	147	8.20	7.39	7.90	7.82	7.58	7.78
	Female	408	7.92	7.56	7.91	7.86	7.63	7.76
Years of experience	< 3 years	61	7.90	7.52	7.79	7.90	7.79	7.78
	3-5 years	122	8.16	***7.92***	8.08	8.01	***8.20***	***8.07***
	5-10 years	145	***8.27***	7.63	***8.19***	***8.10***	7.74	***7.98***
	> 10 years	231	7.78	7.23	7.69	7.61	7.22	7.50
Years of experience at the current school	< 3 years	135	***8.02***	***7.76***	***8.06***	***8.10***	***7.88***	***7.96***
	3-5 years	167	***8.17***	***7.92***	***8.03***	***7.95***	***8.05***	***8.02***
	5-10 years	108	***8.10***	7.12	***7.97***	7.80	7.39	7.67
	> 10 years	149	7.72	7.15	7.62	7.58	7.10	7.43
Level of Education	Bachelor	392	7.99	7.53	7.95	7.88	7.70	7.81
	Master	164	8.02	7.51	7.84	7.80	7.47	7.73
Grade level of teaching	Primary	207	7.89	7.55	7.89	7.92	7.84	7.82
	Lower-Secondary	174	7.98	7.47	7.80	7.76	7.67	7.74
	Upper-Secondary	178	8.15	7.53	8.06	7.87	7.34	7.79
School type	Public	387	7.98	7.37	7.79	7.79	7.52	7.69
	Private	172	8.06	***7.82***	***8.18***	8.01	***7.98***	***8.01***

** S1-5: Five variables that measure teachers' job satisfaction, regarding a Likert Scale of 10. More detail at part VI of the survey (Appendix A).*
*** t-test has been adopted to measure mean differences in Gender and School type, while ANOVA has been adopted to measure mean differences for the other groups.*
**** The result of mean differences bigger than 0.3 (in comparison with the smallest mean in the same category) has been highlighted in* ***Bold and Italics.***

Fourth, with regard to the level of education, this analysis did not include the participants who held doctoral degrees because the only people who participated in the study were those who held such degrees. It has been found that there is no significant variation in the amount of satisfaction that instructors have with different levels of schooling. This conclusion is similar to the findings that showed gender inequalities.

Fifth, in a manner that is analogous to the findings regarding gender disparities, there is no discernible difference in job satisfaction across the five assessed aspects between primary, lower-secondary, and upper-secondary teachers based on the participants' current grade level of teaching.

In closing, with regard to the sort of school where they attended, participants from both public and private schools reported having comparable expectations regarding their current work (S1). Teachers working in private schools said that they rated the values of their job (S4) at 8.01 on a scale of ten, whereas their colleagues working in public schools showed a slightly lower level of 7.79 on the same scale. When it comes to the other three aspects (S2, S3, and S5), the responses from teachers working in private schools are significantly different from those of teachers working in public schools.

4.5 Summary

The participants' demographic information was described in this chapter, and a comparison was made between the groups about the mean differences in the level of job satisfaction experienced by teachers. The overall satisfaction of teachers does not differ significantly between genders, educational levels, or teaching grade levels. This is the case regardless of the teaching grade level.

Regarding the majority of the five criteria for satisfaction that were examined in this research, teachers who worked in private schools reported higher ratings than their colleagues who worked in public schools. Particularly noteworthy is the fact that teachers in both public and private schools had varying degrees of job satisfaction during the course of their careers. Those educators who have been in the profession for three to five years or five to ten years appeared to have the highest level of job satisfaction. To put it into perspective, teachers who were just starting out and those who had more than ten years of experience indicated lower levels of satisfaction. The participants who have less than three years of experience or between three and five years of experience have reported the highest ratings when it comes to the level of satisfaction that teachers have with their educational institutions of employment. In the following chapter, the researcher will conduct correlation analyses in order to provide a more in-depth explanation of the relationships that exist between demographics and the level of job satisfaction experienced by teachers. Following that, a number of different procedures for the validation of structural equations and taking measurements will be carried out in order to optimize and establish the conceptual framework.

Chapter 5. Quantitative Data Presentation and Analysis: Inferential Analysis

5.1 Introduction

The inferential studies that are the subject of this chapter are designed to validate the research model and study the relationships that exist between individual variables. The researcher utilized PLS-SEM, which is a high-order model analysis technique, in order to investigate the direct and indirect implications that each construct and latent variable (Hair et al., 2020) have on the level of job satisfaction experienced by teachers. In recent decades, there have been common approaches to assess the PLS-SEM, such as measurement model assessment, structured model assessment, and path analyses (Hair et al., 2014; Zeng et al., 2021). This is despite the fact that researchers have not yet reached a consensus on a single formulation that can validate the goodness-of-fit of a PLS-SEM analysis. As a consequence of this, this chapter developed a comprehensive conceptual model concerning educational leadership, school culture, the efficiency of knowledge circulation, and the level of job satisfaction experienced by teachers.

5.2 The Structural Model: Measurement Model Assessment

In accordance with the recommendation made by Cooper et al. (2020), the researcher made use of a variety of Likert scales inside the questionnaires in order to reduce the common method variance (CMV) before proceeding with additional studies. Prior to performing further structure analyses, to prevent potential differences from those scales (4, 6, and 10 points) in further weight analyses, as recommended by Chakrabartty (2023), the researcher converted all responses to the same scale, using Z-Score (mean = 0; SD = 1). This step was taken to ensure that the data collected from different Likert scales could be compared and analyzed accurately. Additionally, the researcher

conducted a pilot study with a small sample size to assess the reliability and validity of the measurement model before proceeding with the main data collection process.

With regard to PLS-SEM, Hair et al. (2017) proposed three crucial methods that are capable of evaluating the PLS-SEM measurement model. These methods are convergent validity, discriminant validity, and robustness checks. When referring to the extent to which many indicators of the same construct are measuring the same underlying notion, the term "convergent validity" is used. On the other hand, discriminant validity is an evaluation that determines whether or not a concept is unique from other constructs that are included in the model. Finally, robustness checks involve assessing the stability and dependability of the measurement model under a variety of settings or sub-samples in order to guarantee that it is generalisable and consistent.

5.2.1 Convergent Validity

Convergent validity is an irreplaceable concept in evaluating quantitative research models such as SEM (Brooks & Gelman, 1998). By determining the reliability of measurement instruments through various statistical indicators, scholars can ensure that those instruments are accurate and consistent (Shmueli et al., 2019). The convergent validity of a PLS-SEM can be measured using Cronbach's alpha, Composite reliability (CR), and Average Variance Extracted (AVE). In particular, Cronbach's alpha can indicate the consistency of variables within the same latent variable. In other words, it explains whether a group of variables measure the same construct or not. According to Hair et al. (2019), regarding a sample size of more than 400, reliable alpha scores are between 0.7 and 0.95. These statistical indicators are important for researchers to assess the reliability and validity of their measurement instruments. They provide a way to determine if the

variables being measured are consistent and accurately capture the intended construct. Additionally, these indicators can help researchers make informed decisions about the quality of their data and whether further analysis is needed.

Besides the common adoption of Cronbach's alpha in validating the reliability of variables within the same construct, scholars also recommend Composite Reliability (CR) as a complement to evaluate the reliability and consistency of constructs within the same measurement model (see Bagozzi & Yi (1988); Chin (1998); Henseler & Sarstedt (2013)). The CR metric can indicate the convergent of items within the same construct under the complex relationship of many constructs within a model. A higher CR score means that the items are strongly related as well as collectively contribute to defining the related latent variable. (Henseler & Sarstedt, 2013) and Hair et al. (2020) suggested that the proper level of CR should be from 0.7, while Chin (1998) proposed an acceptable level of 0.6. It is important to note that the recommended threshold for CR may vary depending on the specific research context and field of study. Researchers should consider these suggested thresholds as guidelines and make informed decisions based on their own research objectives and theoretical frameworks. Additionally, it is advisable to assess the CR score in conjunction with other reliability measures, such as composite reliability (CR) and average variance extracted (AVE), to obtain a comprehensive evaluation of construct reliability.

Therefore, besides Cronbach's alpha and CR, AVE is a crucial statistic to assess construct validity in the context of SEM analyses (Dash & Paul, 2021). Particularly, AVE indicates the construct's ability to explain the variance in its indicators (Hair et al., 2019). Together, these metrics provide a comprehensive understanding of the measurement model's reliability and convergent validity.

Hock et al. (2010) proposed that the proper convergent level of a construct is attained with AVE from 0.5 and above. In other words, this means, on average, the latent variable will be able to explain at least 50% of the variance of its manifest variables. Table 20 summarises the Measurement Model convergent validity results, including Cronbach's alpha, Composite reliability (CR), and Average variance extracted (AVE). In brief, all measurements achieved proper levels of Cronbach's alpha, CR, and AVE. In brief, these results indicate that the measurement model used in the study has a high level of reliability and convergent validity. This means that the latent variable is able to accurately measure and explain a significant portion of the variance in its manifest variables. These findings provide confidence in the accuracy and consistency of the measurements used in the study.

Table 20. Measurement Model Convergent Validity Results

Code	Domain and Code	No. of items	Loading	Cronbach Alpha	CR	AVE
Principalship	P-I. Set directions (SD)	4	0.916	0.979	0.980	0.731
	P-II. Build relationships and develop people (BRDP)	5	0.930			
	P-III. Develop the organisation to support desired practices (DOSP)	6	0.947			
	P-IV. Improve the instructional program (IIP)	4	0.932			
Teacher Leadership	T-I. Communicating a learning vision (CLV)	5	0.852	0.949	0.912	0.723
	T-II. Supporting teacher professional development (STPD)	5	0.801			
	T-III. Initiating curricular and instructional improvement (ICI)	5	0.900			
	T-IV. Bettering teaching environment (BTE)	5	0.882			
School Culture	C-I. Professional Collaboration (PC)	5	0.863	0.961	0.961	0.646
	C-II. Affiliative Collegiality (AC)	6	0.921			
	C-III. Self-Determination (SDE)	6	0.925			
Knowledge Circulation Effectiveness	K-I. Socialisation (S)	4	0.876	0.969	0.970	0.686
	K-II. Externalisation (E)	5	0.925			
	K-III. Combination (C)	4	0.948			
	K-IV. Internalisation (I)	3	0.921			
Teachers' Job Satisfaction	S. Teachers' satisfaction and intention to maintain their current jobs (TJS)	5	0.904	0.904	0.912	0.723

CR: Composite Reliability; AVE: Average Variance Extracted

5.2.2 Discriminant Validity

Convergent validity and discriminant validity are like two sides of the same hand. At the same time, convergent validity warrants the consistency of each construct, discriminant validity supports to ensure that each construct is measuring a distinct and separate concept (Kock, 2017). Well-established approaches to measure discriminant validity in structural equation models are Fornell-Larcker criterion (Fornell & Larcker, 1981), Heterotrait-Monotrait Ratio (HTMT) (Bushashe, 2023), Cross-loadings (Shmueli et al., 2019), and AVE Comparison (Hair et al., 2019). These approaches provide researchers with various methods to assess the distinctiveness of constructs in their studies. By utilising these techniques, researchers can ensure that their measures are accurately capturing unique concepts and not overlapping or duplicating each other. This is crucial for establishing the validity and reliability of the measurement instruments used in structural equation modeling.

According to the proposal made by Hair et al. (2011), theoretically speaking, it is not required to carry out all of those methods in order to justify the validity of a PLS-SEM model. In light of the fact that the Fornell-Larcker criterion and the AVE comparison both require AVE as its fundamental component, the researcher made the decision to solely apply the Fornell-Larcker criterion. A comparison is made between (i) the square root of the average variance extracted for each construct and (ii) the correlations between matched constructs using this method. According to the hypothesis put forth by Fornell & Larcker (1981), the discriminant validity of the model is considered to be acceptable when (i) is more prominent than (ii). It can be shown from Table 21 that every measurement construct is in accordance with the proposed standard. Given this information, it appears that the PLS-SEM model possesses sufficient discriminant validity.

Table 21. Fornell-Larcker Criterion Results

	Knowledge Circulation Effectiveness	Principalship	School Culture	Teacher Job Satisfaction	Teacher Leadership
Knowledge Circulation Effectiveness	**0.828**				
Principalship	0.342	**0.855**			
School Culture	0.784	0.335	**0.804**		
Teacher Job Satisfaction	0.593	0.215	0.560	**0.850**	
Teacher Leadership	0.574	0.299	0.636	0.450	**0.725**

The Heterotrait-Monotrait Ratio (HTMT) is a relative measure of distinctiveness that is a complement to the Fornell-Lacker criterion. It does this by directly evaluating the correlations between different domains. The steps involved in executing this method are incorporated into the name of the technique. To be more specific, the researcher will be required to measure the ratio of the average correlation between two distinct constructs (heterotrait) to the moderate correlation that exists within each construct (monotrait). According to Garson (2016), the HTMT ratio ought to be less than one in order to guarantee discriminant validity. On the other hand, Henseler & Sarstedt (2013) propose a threshold of 0.9. All of the measurement constructions were found to be

in compliance with the HTMT ratio standards, as described in Table 22. This indicates that there is sufficient evidence to establish the discriminant validity of the measurement constructs with regard to the measurement constructs. As a result, we are able to draw the conclusion that each construct is different from the others and does not considerably overlap with one another in terms of the correlations that they share.

Table 22. Heterotrait-Monotrait Ratio (HTMT) Results

	Knowledge Circulation Effectiveness	Principalship	School Culture	Teacher Job Satisfaction	Teacher Leadership	Culture * Teacher Leadership	Culture * Principalship
Knowledge Circulation Effectiveness							
Principalship	0.350						
School Culture	0.813	0.345					
Teacher Job Satisfaction	0.626	0.224	0.597				
Teacher Leadership	0.598	0.310	0.667	0.481			
Culture * Teacher Leadership	0.122	0.178	0.211	0.130	0.277		
Culture * Principalship	0.139	0.072	0.239	0.140	0.207	0.517	

5.2.3 Robustness checks

The researcher utilized the Bias-Corrected and Accelerated (BCa) bootstrapping technique (Streukens & Leroi-Werelds, 2016) in order to investigate the robustness of the measurement. It is possible to estimate the confidence intervals for measurements in a model using this method, which also addresses the possibility of biases and improves the accuracy of the estimation of confidence intervals. According to (Liu et al., 2011), this technique is referred to as a "resampling method" since it enables us to estimate the confidence interval without making any assumptions about the distribution of the real dataset. The findings of the BCa bootstrapping for all constructs and latent variables are summarized in Table 23, which may be found in Appendix C. There was only one pathway inside the suggested model that had a p-value that was bigger than 0.05 and did not satisfy the necessary level. This pathway was the direct influence of principalship over teachers' work satisfaction, and it had a p-value of 0.609, which was much higher than the barrier. In general, the conclusions from this model have a high degree of generalizability and are not dependent on the assumptions and conditions of this particular dataset. This is because the overall model was able to justify the robustness requirements.

5.3 The Structural Model: Model Assessment

5.3.1 PLS-SEM Standard Model Assessment Criteria

Indicator collinearity

In the context of SEM, as well as PLS-SEM, the concept of indicator collinearity refers to the correlation or covariance between indicators that belong to the same latent construct, as well as indicators that come from various constructs that fall under the same factor (Dormann et al., 2013). There is a possibility that indicator collinearity will result in multicollinearity problems, which

will have an impact on the accuracy and stability of the calculated model parameters. In order to solve this issue, researchers need to make certain that the appropriate degree of indicator collinearity is maintained in order to enhance the dependability of the calibration model. As a result, the study of collinearity is the stage that cannot be replaced before any structural connection assessment (Kock, 2017). A statistical metric known as the Variance Inflation Factor (VIF) assesses the extent to which the variance of a variable is inflated as a result of the multicollinearity that exists inside a structural equation modeling (SEM) model. By computing the variance inflation factor (VIF) for each indicator in the model, researchers are able to identify variables that have high levels of collinearity and then take suitable measures to alleviate multicollinearity difficulties. These methods may include deleting or merging indicators. A further benefit of analyzing the VIF is that it can shed light on the potential influence that collinearity may have on the overall model fit and the interpretation of the results. Hair et al. (2017) recommend a VIF cut-off of three or lower, while Becker et al. (2015) recommend a range of three to five. The greater the value of the VIF, the greater the likelihood that the measurement model contains a great deal of multicollinearity problems. In Table 24, every single VIF number is either comparable to or lower than three. According to this, the indicators that are included in the measurement model do not have a strong correlation with one another, which indicates that there is a low likelihood of multicollinearity developing. Nevertheless, it is still essential to evaluate the VIF values and take into consideration the results of additional diagnostic procedures in order to guarantee the reliability of the model's findings.

Table 24. Indicator Inner Collinearity

	VIF
School Culture → C.AC	1.000
School Culture → C.PC	1.000
School Culture → C.SDE	1.000
School Culture → Teacher Job Satisfaction	3.106
Knowledge Circulation Effectiveness → K.C	1.000
Knowledge Circulation Effectiveness → K.E	1.000
Knowledge Circulation Effectiveness → K.I	1.000
Knowledge Circulation Effectiveness → K.S	1.000
Knowledge Circulation Effectiveness → Teacher Job Satisfaction	2.732
Principalship → Knowledge Circulation Effectiveness	1.098
Principalship → P.BRDP	1.000
Principalship → P.DOSP	1.000
Principalship → P.IIP	1.000
Principalship → P.SD	1.000
Principalship → Teacher Job Satisfaction	1.251
Principalship → Teacher Leadership	1.000
Teacher Leadership → Knowledge Circulation Effectiveness	1.098
Teacher Leadership → T.BTE	1.000
Teacher Leadership → T.CLV	1.000
Teacher Leadership → T.ICI	1.000
Teacher Leadership → T.STPD	1.000
Teacher Leadership → Teacher Job Satisfaction	1.801
School Culture * Principalship → Teacher Job Satisfaction	1.493
School Culture * Teacher Leadership → Teacher Job Satisfaction	1.498

Coefficient of Determination

In PLS-SEM, the emphasis is on the predictive relevance of the latent variables and their relationships rather than regular approaches to explaining variance (Hair et al., 2019). PLS-SEM focuses on the measurement of latent variables and their impact on predicting outcomes, making it particularly useful for complex models with limited sample sizes. It allows researchers to prioritise predictive power over traditional methods that solely focus on explaining variance. The Coefficient of Determination (R^2) indicates the amount of variance in the dependent variable that can be explained by the model. R^2 is the square value of the related path coefficient (between the latent variable and its items) (Shmueli & Koppius, 2011). An enormous R^2 value means that the model has a higher tendency to explain the complex relationships between its variables (Rigdon, 2012). This can be especially beneficial when dealing with small sample sizes, as it helps to mitigate the risk of overfitting and provides more accurate predictions. Additionally, a high R^2 value suggests that the model is effective in capturing and explaining the intricate connections between its variables, making it a valuable tool for researchers in various fields. As proposed by Henseler & Sarstedt (2013) and Hair et al. (2011), R^2 values of 0.25, 0.50, and 0.75 are weak, moderate, and substantial, respectively.

According to the summarised results in Table 25, most of the endogenous and latent variables have substantial R^2 values, and two constructs with moderate R^2 values are Knowledge Circulation Effectiveness and Teachers' Job Satisfaction. Teacher Leadership is the only construct that has a weak R^2 value. These findings suggest that the majority of the variables in the model have a strong impact on the overall outcome, with Knowledge Circulation Effectiveness and Teachers' Job

Satisfaction having a moderate influence. However, it is important to note that Teacher Leadership may not have as significant of an effect on the outcome as compared to other constructs.

Table 25. R^2 value of the endogenous construct(s)

	R^2	R^2 adjusted
C.AC	0.925	0.925
C.PC	0.810	0.809
C.SDE	0.845	0.845
K.C	0.873	0.872
K.E	0.931	0.931
K.I	0.808	0.807
K.S	0.809	0.809
Knowledge Circulation Effectiveness	0.362	0.359
P.BRDP	0.937	0.937
P.DOSP	0.949	0.949
P.IIP	0.880	0.880
P.SD	0.881	0.881
T.BTE	0.840	0.840
T.CLV	0.711	0.711
T.ICI	0.855	0.855
T.STPD	0.781	0.781
Teacher Leadership	0.090	0.088
Teacher Job Satisfaction	0.383	0.376

5.3.2 Model's Predictive Accuracy

PLS-SEM focuses on the predictive power of the model rather than the explanation of variance (Shmueli, 2010). This approach is particularly useful in situations where the main goal is to make accurate predictions or forecasts. By concentrating on predictive power, PLS-SEM allows researchers to develop models that can effectively predict outcomes and trends, even if they may not provide a detailed understanding of the underlying mechanisms or factors driving those predictions.

Aligned with that purpose, the f^2 effect size provides more insights into the significance of a relationship between latent variables and observed variables (Nitzl et al., 2016). The formula to calculate this indicator is $f^2 = R^2 / (1 - R^2)$. Cohen (1988) stated a rule of thumb that determines the f^2 effect size regarding three thresholds of 0.02 (small effect), 0.15 (medium effect), and 0.35 (large effect).

As shown by Table 26, six out of nine relationships have small f2 effect sizes, from 0.050 to 0.119. Notably, the influence of Teacher Leadership on Teachers' Job Satisfaction has the most considerable predictive power, which is three times or even five times larger than the other ones (0.383). Also, the two moderation relationships of School Culture have very weak predictive scores of 0.011. These findings suggest that the relationship between Teacher Leadership and Teachers' Job Satisfaction is particularly strong, indicating that Teacher Leadership plays a significant role in influencing job satisfaction among teachers. If we remove this construct, there will be enormous impacts on the whole model. On the other hand, the weak predictive scores for the moderation relationships of School Culture indicate that School Culture has minimal impact

on the outcomes being measured. These findings highlight the importance of fostering strong teacher leadership within schools to promote job satisfaction among teachers. Additionally, further research may be needed to explore other factors that contribute to teachers' job satisfaction beyond Teacher Leadership and School Culture.

Table 26. Results of f^2 effect sizes

	f-square
Principalship → Teacher Leadership	0.098*
Principalship → Knowledge Circulation Effectiveness	0.050*
Principalship → Teacher Job Satisfaction	0.050*
Teacher Leadership → Knowledge Circulation Effectiveness	0.383***
Teacher Leadership → Teacher Job Satisfaction	0.060*
Knowledge Circulation Effectiveness → Teacher Job Satisfaction	0.087*
School Culture * Principalship → Teacher Job Satisfaction	0.011
School Culture * Teacher Leadership → Teacher Job Satisfaction	0.011
School Culture → Teacher Job Satisfaction	0.119*

**. Small f^2 effect size*
***. Medium f^2 effect size*
****. Large f^2 effect size*

In addition to the f^2 effect size, this study conducted Construct Cross-validated Redundancy (Q2) (Geisser, 1974) and Cross-validated Predictive Ability Test (CVPAT) (Shmueli et al., 2019) to evaluate the measurement model's predictivity. These additional tests were used to assess the reliability and validity of the measurement model. The Construct Cross-validated Redundancy (Q2) measure helped determine the amount of variance explained by the model, while the Cross-validated Predictive Ability Test (CVPAT) assessed the model's ability to accurately predict future outcomes. Both two approaches are based on the concept of cross-validation. However, Q2 focuses

more on each latent variable, while CVPAT assesses the predictivity of the whole model (Streukens & Leroi-Werelds, 2016). Table 27 presents Q2 values of each latent variable regarding a procedure of 10 blindfolding iterations. According to Rigdon (2014) and Sarstedt et al. (2017), the Q2 value from 0.25 to 0.50 indicates medium predictive relevance, and the Q2 value bigger than 0.50 implies immense predictive relevance. Therefore, the results suggest that the model is able to accurately predict future outcomes.

Table 27. Results of Construct Cross-validated Redundancy

	Q^2
C.AC	0.658***
C.PC	0.604***
C.SDE	0.652***
Culture	0.274**
K.C	0.746***
K.E	0.707***
K.I	0.691***
K.S	0.576***
Knowledge Circulation Effectiveness	0.429**
P.BRDP	0.728***
P.DOSP	0.745***
P.IIP	0.725***
P.SD	0.695***
Principalship	0.376**
T.BTE	0.568***
T.CLV	0.475**
T.ICI	0.606***
T.STPD	0.422**
Teacher Leadership	0.430**
Teacher Job Satisfaction	0.510***

. Small predictive relevance. **. Medium predictive relevance. *. Large predictive relevance.*

The Cross-Validated Predictive Ability Test (CVPAT) has been conducted to assess the whole model's ability to predict reliable outcomes on unseen data (Shmueli et al., 2019). Within the cross-validation procedure of this test, the SmartPLS program deployed a training model that tested the model multiple times to examine whether its performance measures (e.g. Mean Squared Error – MSE, Root Mean Squared Error - RMSE) are acceptable (Hair et al., 2019). This process helps to evaluate the model's generalisability and determine if it can accurately predict outcomes for new data. The use of performance measures such as MSE and RMSE allows for a quantitative assessment of the model's predictive ability. After ten folds, Table 28 presents the summarised results of the CVPAT, with all reported p-values are under 0.05. This suggests that the model's performance measures, such as MSE and RMSE, are acceptable and that it can accurately predict outcomes for new data.

Table 28. Results of Cross-Validated Predictive Ability Test

	Average loss difference	*t value*	*p-value*
C.AC	-0.067	2.561	0.011
C.PC	-0.061	2.397	0.017
C.SDE	-0.071	2.657	0.008
Culture	-0.067	2.66	0.008
K.C	-0.095	3.258	0.001
K.E	-0.081	3.021	0.003
K.I	-0.075	2.824	0.005
K.S	-0.049	2.052	0.041
Knowledge Circulation Effectiveness	-0.076	2.984	0.003
P.BRDP	-0.732	11.003	0.001
P.DOSP	-0.75	11.188	0.011
P.IIP	-0.731	11.17	0.011
P.SD	-0.7	9.49	0.001
T.BTE	-0.04	1.927	0.054
T.CLV	-0.052	2.696	0.007
T.ICI	-0.046	2.128	0.034
T.STPD	-0.034	2.067	0.039
Teacher Leadership	-0.042	2.326	0.020
Teacher Job Satisfaction	-0.029	1.804	0.072

5.4 The Final Research Model and Hypotheses Testing

The fundamental objective of the conceptual model that has been proposed is to investigate the intricate connections that exist between principalship, teacher leadership, and school culture, as well as the efficiency of information circulation and the level of job satisfaction experienced by teachers. The statistical findings presented in the earlier sections demonstrate that the measurement model and the structural model assessment are adequate; the research model as a whole is valid, trustworthy, and generalizable. Using total effect indexes, Figure 8 illustrates the intricate link that exists between the variables that are seen and the variables that are latent. According to Hair et al. (2019, 2020), the four key antecedents of this research (principalship, teacher leadership, knowledge circulation efficacy, and school culture) can be treated as multi-layer latent variables that comprise sub-constructs, which are themselves latent variables. This research was conducted in the United States. Formative relationships, in which observed indicators collectively define or form the latent construct, should be used to describe the relationship between those four basic constructs and their sub-latent variables. This is because, for this reason, the relationship should be articulated using formative relationships. With regard to the more specific aspects of these sub-latent variables, there are fifteen constructs that have been developed by a variety of factors that have been observed. These kinds of definitions are able to be evaluated through interactions that are reflective. Last but not least, the only dependent latent variable in this research project is the level of job satisfaction experienced by instructors. This variable is measured as the product of its five factors in relation to the initial concept proposed by Ho & Au (2006).

From the very start, with regard to the connections between latent variables, it is evident that the influence of principalship on the efficiency of knowledge circulation and the level of job

satisfaction experienced by teachers is less than the influence of teacher leadership on those constructs. Furthermore, the moderating impacts of the school culture are portrayed in a deficient manner.

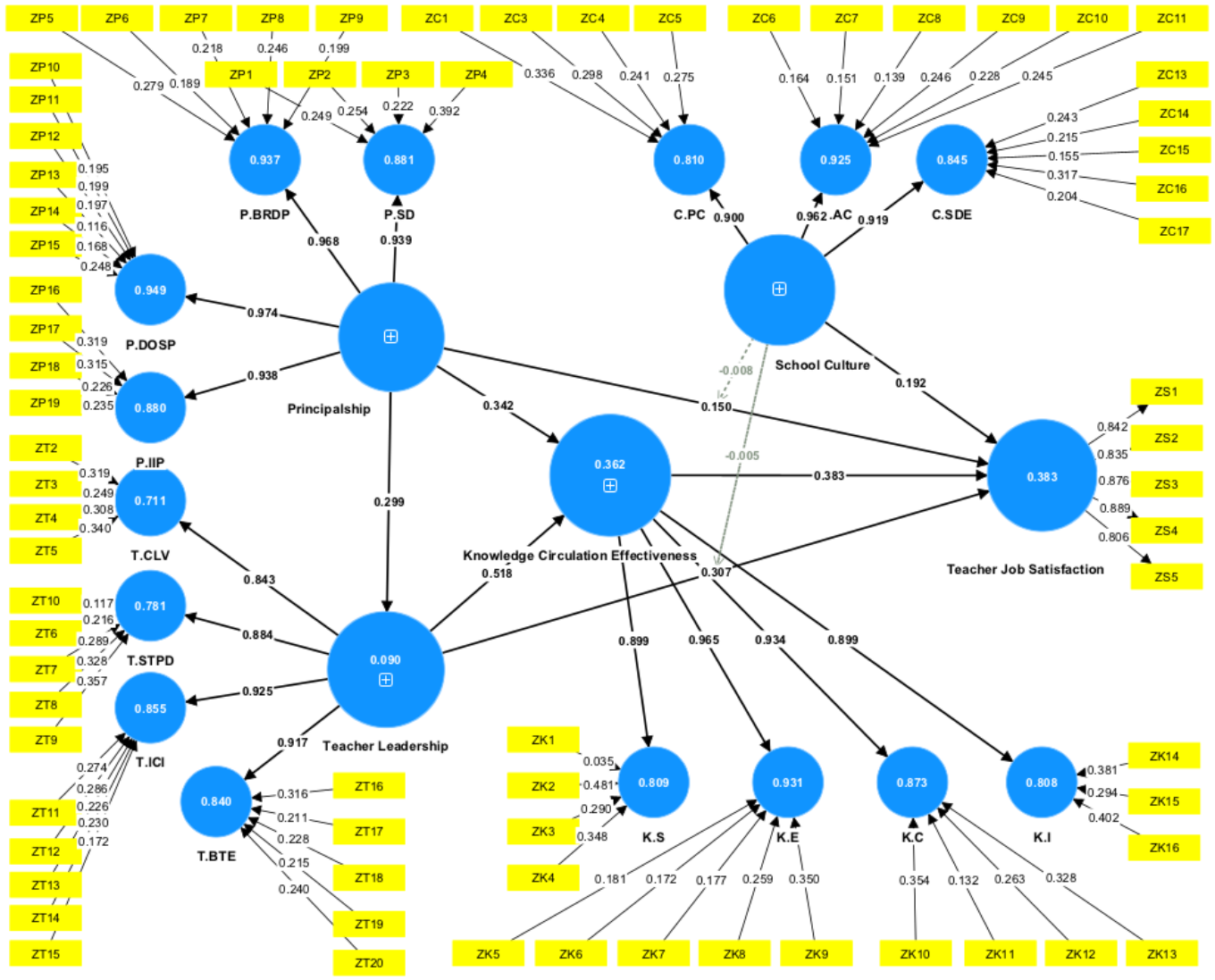
Second, with regard to the intricate interaction that exists between the variables that have been observed, through mediators such as teacher leadership and knowledge circulation, each of the four components of principalship has an indirect impact on the level of job satisfaction that teachers experience. The following part will provide an explanation of the hypothesis and outcomes in greater detail.

The results of the hypothesis tests conducted on nine different hypotheses are summarised in Table 29, which allows for the drawing of conclusions based on the structured model. In the following, the detailed justifications for testing the hypothesis are offered respectively:

Hypothesis 1: Principalship positively influences teacher leadership.

The causal path between the two constructs resulted in a coefficient of 0.299 at a p-value of 0.000, which indicates that the causal path between the two constructs was successful. The conclusion that can be drawn from this is that the null hypothesis should be rejected and the alternative hypothesis should be accepted. To put it another way, the principalship exerts a significant direct influence on the leadership demonstrated by teachers (0.299).

Fig 8. Path Analysis Total Effect Results (The author, 2024).



(Latent variables are displayed in blue circles, and measurement indicators are displayed in yellow rectangles)

Hypothesis 2: Principalship positively influences knowledge circulation effectiveness.

When compared to the significance level of 0.05, the p-value of 0.045 is lower. Based on this outcome, it was clear that we could not accept the null hypothesis and instead support

the alternative that was suggested. To put it another way, improved principalship practices are directly correlated to increased knowledge circulation efficacy (0.342).

Hypothesis 3: Principalship positively influences teachers' job satisfaction.

A p-value of 0.059 indicates that the principalship has an effect on the level of work satisfaction experienced by teachers. On the other hand, according to Halsey et al. (2015), the sole reliance on a threshold of 0.05 might not be warranted for testing the null hypothesis. Instead, we ought to treat a p-value of 0.06 in the same manner that we perceive a p-value of 0.04. Consequently, the researcher suggested that we can clearly reject the null hypothesis and validate the minor impact that principalship has on the level of job satisfaction experienced by teachers (0.150 coefficient).

Hypothesis 4: Teacher leadership positively influences knowledge circulation effectiveness.

A significant level of 0.045 was highlighted by the hypothesis test, which resulted in a definitive rejection of the null hypothesis and provided support for the dominant impact of teacher leadership on the effectiveness of knowledge circulation (0.518).

Hypothesis 5: Teacher leadership positively influences teachers' job satisfaction.

This association was shown to be valid by the statistical significance of 0.042, which was found to be significant. In conclusion, it is clear that the null hypothesis should be rejected, and it is also clear that the persuasive influence of teacher leadership on job satisfaction (0.307) should be confirmed.

Hypothesis 6: Knowledge circulation effectiveness positively influences teachers' job satisfaction.

The null hypothesis is categorically rejected by the empirical findings due to the value of 0.000. Through the use of a route coefficient score of 0.383, the hypothesis test demonstrated that there is a significant connection between the efficiency of information circulation and the level of job satisfaction experienced by teachers.

Hypothesis 7: There is a moderation effect of school culture over the influence of principalship on teachers' job satisfaction.

Even though the p-value was 0.000, which indicated that the null hypothesis should be rejected, the value of the path coefficient was -0.008, which also indicated that the alternative hypothesis should be rejected. This unequivocal conclusion demonstrated that there is no moderating effect of school culture over the influence of principalship on the level of job satisfaction experienced by teachers.

Hypothesis 8: There is a moderation effect of school culture over the influence of teacher leadership on teachers' job satisfaction.

The p-value of 0.000, which was quite similar to the results of hypothesis 7 that were presented before, strongly rejected the null hypothesis. Nevertheless, the path coefficient of -0.005 led us to disapprove of the moderating effect of school culture over the impact of teacher leadership on teachers' job satisfaction. This was the case because the path coefficient was negative.

Hypothesis 9: There are influences of school culture on teachers' job satisfaction.

Clearly, since the p-value is 0.005, it is obvious that the null hypothesis cannot be rejected because it is too strong. The value of the path coefficient, which was 0.192, indicated that the school culture plays a significant role in the level of job satisfaction experienced by instructors.

Table 29. Hypotheses Test Results

Hypothesis	Path	Path Coefficient	p-value	Remarks
H1	Principalship → Teacher Leadership	0.299	0.000	Supported
H2	Principalship → Knowledge Circulation effectiveness	0.342	0.045	Supported
H3	Principalship →Teachers' Job Satisfaction	0.150	0.059	Supported
H4	Teacher Leadership → Knowledge Circulation effectiveness	0.518	0.045	Supported
H5	Teacher Leadership →Teachers' Job Satisfaction	0.307	0.042	Supported
H6	Knowledge Circulation effectiveness →Teachers' Job Satisfaction	0.383	0.000	Supported
H7	School Culture * Principalship→ Teacher Job Satisfaction	-0.008	0.000	Rejected
H8	School Culture * Teacher Leadership → Teacher Job Satisfaction	-0.005	0.000	Rejected
H9	School Culture →Teachers' Job Satisfaction	0.192	0.005	Supported

In addition to the explanation of relationships between the primary constructs that formed the main hypotheses, Table 30 (Appendix C) provides further details about path coefficients between all 20 latent variables. In brief, there are 24 standardised total effects of each latent variable on another, which include both direct and indirect relationships. By looking at the total and path effects, we

can be able to explain the involvement of child-latent variables in constructing each overall latent variable, as well as their influences on the final dependent variable: teachers' job satisfaction. Notably, there are differences between sub-constructs of the same construct regarding their correlation with teachers' job satisfaction. These differences suggest that certain aspects of the several latent variables have a stronger impact on teachers' job satisfaction compared to others. Understanding these variations can help identify specific areas for improvement in order to enhance teachers' overall job satisfaction. Additionally, examining the path coefficients can provide insights into the complex interplay between different latent variables and their combined influence on teachers' job satisfaction.

Regarding the constructions of major latent variables, first, four latent variables that constructed Principalship contributed to determining the notation of principalship equally: Set direction (SD) (0.939), Build relationship to develop people (BRDP) (0.968), Develop organisation to support desired practices (DOSP) (0.974), and Improve the instructional program (IIP) (0.938). These findings suggest that all four aspects of Principalship play a significant role in shaping teachers' job satisfaction. Moreover, the high path coefficients indicate a strong positive relationship between these latent variables and overall job satisfaction, highlighting the importance of effective leadership in creating a supportive and fulfilling work environment for teachers. Also, it is worth mentioning that, BRDP and DOSP secured higher contributions to the influence of principalship on teachers' job satisfaction with weighted indexes of 0.937 and 0.949, respectively, while SD and IPP have slighter involvements at 0.881 and 0.880. Overall, the principalship measurement scale that was developed by Leithwood et al. (2020) has been validated with regard to the setting of Vietnamese education from kindergarten through high school.

Second, regarding the notion of Teacher Leadership, the formation of this construct has a notch higher level of involvement from teachers' habits to initiate curricular and instructional improvement (ICI) (0.925) and contributions toward a better teaching environment (BTE) (0.917). The other two elements have slightly lower inputs: Supporting teacher professional development (STPD) (0.884) and Communicating a learning vision (CLV) (0.843). Hence, ICI and BTE affect teachers' job satisfaction at higher levels of 0.855 and 0.840, compared to the indices of 0.884 from STPD and 0.843 from CLV. These findings suggest that teachers' habits of initiating curricular and instructional improvement and contributing to a better teaching environment have a stronger impact on their job satisfaction compared to their support for professional development and communication of a learning vision. It is important for schools and educational institutions to promote and encourage teacher leadership in these areas to enhance overall job satisfaction among educators. In brief, taking into consideration the setting of Vietnamese K-12 education, the teacher leadership measuring scale developed by Pan & Chen (2020) has been verified.

Third, in the matter of factors that shape Knowledge Circulation Effectiveness, the two top-contributing factors are Knowledge externalisation practices (KE) (0.965) and Knowledge combination (KC) (0.934), which are marginally more remarkable than the involvement of Knowledge internalisation (KI) (0.899) and Knowledge sharing (KS) (0.899). In a similar manner, the indirect effects that KE and KC had on teachers' job satisfaction are fractions more than KI and KS'. In a nutshell, the knowledge circulation effectiveness scale developed by Tsai & Li (2007), which originated in the setting of manufacturing, has been expanded to the context of education by means of the validation of the responses provided by Vietnamese K-12 teachers.

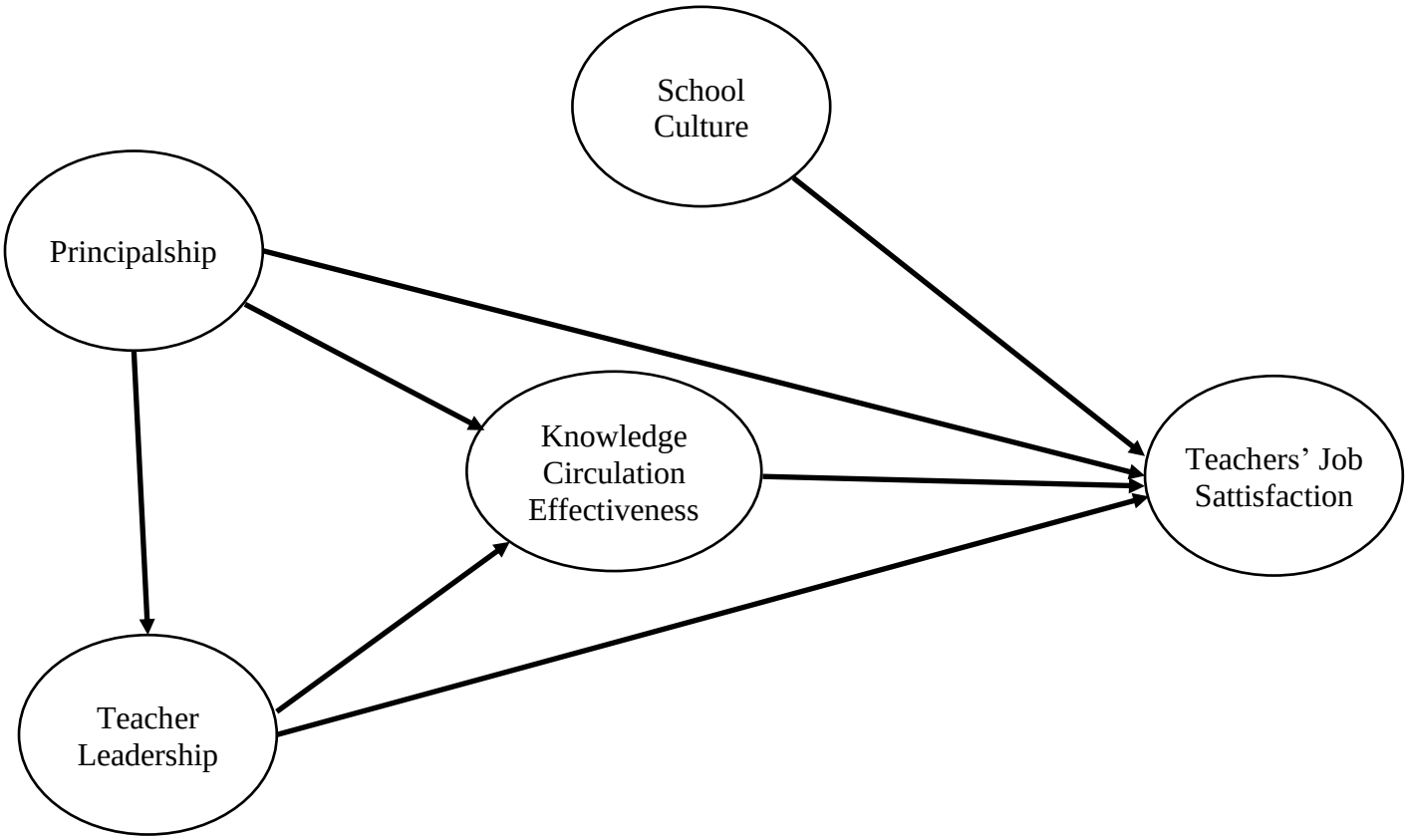
Fourth, concerning the adoption of school culture, there is one pinnacle component that expressed higher involvement: Affiliative collegiality (AC), with a path coefficient of 0.962, in comparison with 0.919 from Self-determination and efficacy (SDE) and 0.900 from Professional collaboration (PC). The indirect influence of AC on teachers' job satisfaction (0.925) also vastly outstrips SDE (0.845) and PC (0.810). These results suggest that fostering affiliative collegiality among teachers can significantly contribute to their job satisfaction. Additionally, the strong indirect influence of affiliative collegiality on job satisfaction highlights the importance of creating a supportive and collaborative school culture. Overall, the construct of school culture adopted from Wagner (2006) is confirmed regarding the context of Vietnamese K-12 education.

Last but not least, the teacher work satisfaction scale developed by Ho & Au (2006) has been validated with regard to the setting of Vietnamese education from primary through high school, regarding its variables about teachers' general satisfaction, satisfactions with their working condition and occupation, perceived value of being a teacher, and willingness to maintain their current job.

As a result, the researcher successfully developed the ultimate theoretical framework, which consists of seven hypotheses that are accepted and two hypotheses that are denied regarding the moderation functions of school culture. In particular, regarding the context of Vietnamese K-12 education, there are influences of principalship on teacher leadership and teachers' job satisfaction. Additionally, there are direct effects on teachers' job satisfaction that come from the leadership of instructors and the culture of the school. One final point to consider is that the effectiveness of

knowledge circulation acts as a mediator in the relationship between educational leadership and the level of job satisfaction experienced by teachers. Figure 9 provides a concise summary of the conceptual framework that was developed for this research effort.

Figure 9. The Final Theoretical Framework (The author, 2024).



5.5 Summary

This chapter focused on validating the research model, examining proposed hypotheses, and finalising the conceptual framework through various inferential analyses. Systematically, this chapter validated the measurement model, evaluated the model assessment, tested the proposed hypotheses, and refined the theoretical framework. To begin, the researcher adhered to convergent

validity, discriminant validity, and robustness analyses when it came to the validation of the structural model. Second, this chapter contained conventional model assessment criteria such as indicator collinearity and coefficient of determination. These criteria were discussed in relation to the evaluation of the model assessment. The researcher carried out the f-square effect, constructed cross-validated redundancy, and cross-validated predictive ability analyses in order to guarantee that the model would accurately forecast the future. Consequently, the researcher conducted hypothesis testing analyses in order to investigate the nine hypotheses that were offered, and he or she rejected two hypotheses concerning the moderating functions that school culture plays. In addition, twenty-four path analyses have been incorporated in order to better analyse the direct and indirect influence of primary constructs and sub-latent constructs on the level of job satisfaction experienced by instructors. This chapter culminates in the development of a refined theoretical model of educational leadership, the efficiency of knowledge circulation, the culture of schools, and the level of job satisfaction experienced by teachers.

Chapter 6. Discussion, Contributions, Limitations, Conclusions, and Future Research Directions

6.1 Introduction

This chapter offers a structured interpretation of various perspectives that have been explored in previous chapters through qualitative data from the literature and quantitative data from the survey. Within this chapter, there are six sections that are organized in a manner that is consistent with the structure of the proposed study aims and objectives. Following the presentation of the introduction, there will be reviews and discussions of the most important findings. A discussion of the theoretical and practical contributions, limitations of the research, and the path that future research should take is presented in the following sections.

6.2 Key Findings

6.2.1 Research Objective 1

As proposed in Chapter 1, the first research object of this project is "To determine the antecedents of K-12 educational leadership that includes principalship and teacher leadership". In order to accomplish this objective, the majority of Chapter 2 was devoted to providing answers to the first research question, which was as follows:

Research question 1:

"What defines educational leadership within the K-12 education context?"

To answer this question, the author reviewed a pool of 1,642 scholarly works on various topics: principalship and teacher leadership, leadership measurement, leadership and knowledge management, school as learning organisations, school culture, and K-12 teachers' job satisfaction (Table 1). Thematic evolution of research on educational leadership from 1975 to 2022 pointed out that K-12 educational leadership can be shaped by various stakeholders (School leaders, teachers, students, parents, and the community) and factors (Performance, students' achievement, teachers' achievement, motivation, engagement, collaboration, and professional development). The research also highlighted the importance of principalship and teacher leadership in shaping educational leadership. Effective school leaders and teachers who exhibit strong leadership skills can have a significant impact on student outcomes and overall school success. Additionally, the measurement of leadership effectiveness has become a crucial aspect in educational settings, as it allows for the identification of areas that need improvement and the implementation of targeted strategies for growth. In addition, blind spots and blank spots in teacher leadership were identified in Chapter 2. These blind spots and blank spots included the engagement of teachers as coaches or collaborators to support their peers, as well as their ability to lead themselves through changes and innovations. Following the findings of the complete and organized literature study, it was indicated that educational leadership in the context of K-12 education should be a combination of principalship and teacher leadership.

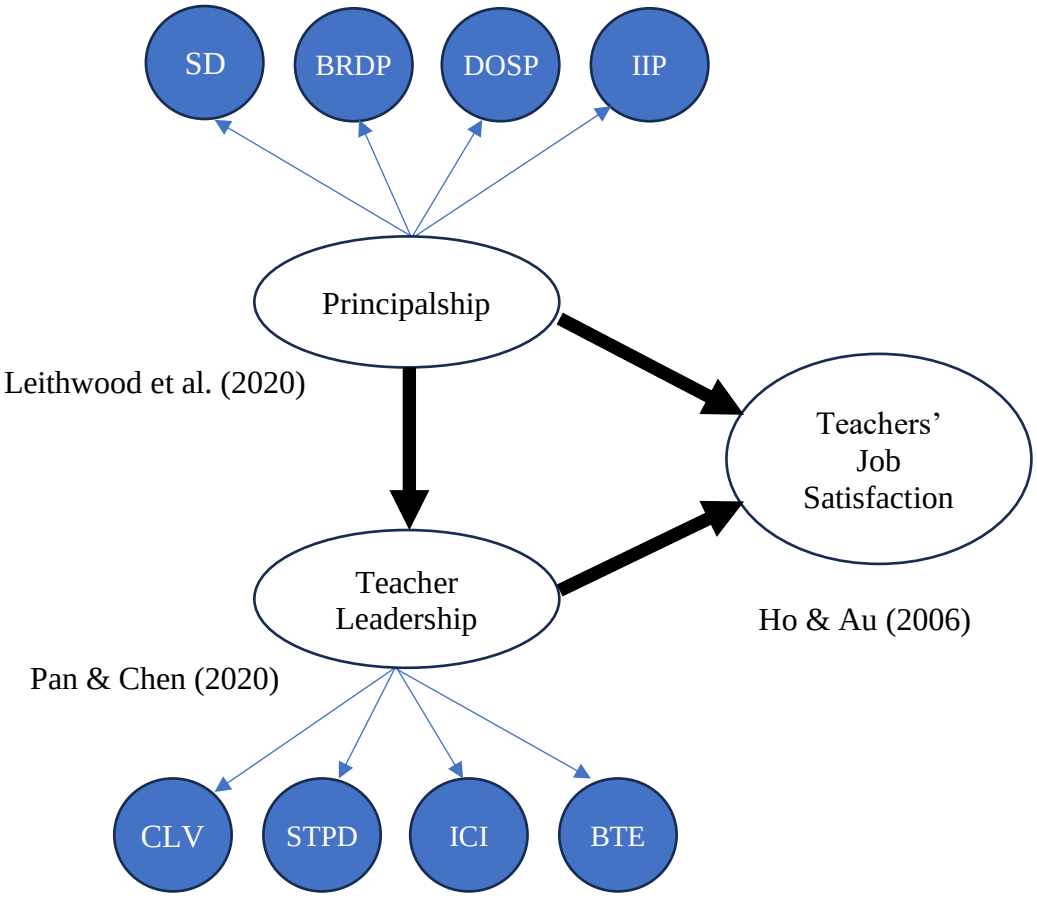
6.2.2 Research Objective 2

The second objective of this research project is *"To develop a scale to measure K-12 educational leadership."* With the intention of accomplishing this objective, the researcher continued to review published educational leadership measurement frameworks to further answer the first research

question. To ensure that this research can eliminate the blind spot of being dominant in Western scholarly works, the researcher included well-established measurement models from across the globe. By incorporating diverse measurement models from different regions, the researcher aims to provide a comprehensive and culturally inclusive perspective on educational leadership. This approach will contribute to the development of a robust and universally applicable scale that can accurately assess leadership qualities in various educational contexts worldwide.

The scope of this research has been restricted to merely measuring principalship and teacher leadership. This is the only emphasis of the entire investigation. On the other hand, the previous research on this subject concentrated an excessive amount of attention on the official leadership of the school leaders, which resulted in a great deal of voids in the leadership of teachers. The researcher gathered toolkits that take into consideration the involvement of instructors in various collaboration and development processes as attempts towards improved teaching and learning settings, as well as greater perceived value and progress. This was done by relying on the fundamental philosophy of the Social Exchange Theory. As a consequence of this, the researcher decided to define K-12 educational leadership by combining the principalship measurement model developed by Leithwood et al. (2020) and the teacher leadership measurement framework developed by Pan & Chen (2020). Taking into account the fact that the most important outcome of educational leadership is the level of job satisfaction and intention to remain in one's position, the author utilized the questionnaires developed by Ho & Au (2006). In the preceding chapters, statistical analyses were used to validate three hypotheses: H1, H3, and H5 (Table 4). These assumptions were used to develop this educational leadership assessment framework (Figure 10).

Figure 10. Proposed and Validated K-12 Educational Leadership Measurement Framework (The author, 2024).



6.2.3 Research Objective 3

Extends beyond the measurement of educational leadership, the third research objective of this project is *"To evaluate the influence of K-12 educational leadership over the knowledge circulation effectiveness."* The second research question was prompted by this project in an effort to accomplish the aforementioned outcome.

Research question 2:

"How does educational leadership influence the organisational knowledge circulation effectiveness?"

Pertaining to the target of transforming schools as learning organisations, this research adopted the idea of the SECI model and considered knowledge-sharing practices as one of the main outputs of K-12 educational leadership. By applying this model to educational leadership in K-12 schools, the research aimed to explore how knowledge-sharing practices can contribute to transforming schools into effective learning organisations. Furthermore, understanding the role of educational leaders in facilitating knowledge-sharing practices can provide valuable insights for improving overall school performance. This research adopted the questionnaire of Tsai & Li (2007), using four constructs and 16 variables to measure four aspects of knowledge circulating from the original model of Nonaka (1990): Socialisation, Externalisation, Combination, and Internalisation. The literature that was reviewed in Chapter 2 also confirmed the mediating role that Knowledge Circulation Effectiveness plays within the influence of principalship (Gurr, 2017; Pashiardis et al., 2018) and teacher leadership (Berg & Zoellick, 2019; Berry, 2019) on teachers' job satisfaction. This led to the formulation of three hypotheses, which are as follows: H2, H4, and H6 (Table 4).

Regarding the empirical from Vienamese K-12 education, the PLS-SEM results confirmed all three hypotheses and indicated that teacher leadership has a more decisive influence on knowledge circulation effectiveness than principalship (with path coefficients of 0.518 and 0.342, respectively). In addition, when compared to the results of the preceding hypotheses (H3 and H5), it is important to note that the only influence of principalship on teachers' job satisfaction has the

least significant impact (0.149), which is only almost half of the outcome created by teacher leadership (0.309). Furthermore, the effectiveness of knowledge circulation played a mediating role, which enhanced those impacts to a greater degree (0.381). These findings suggest that teacher leadership plays a crucial role in promoting knowledge circulation effectiveness within schools. The results also highlight the importance of considering the mediating effect of knowledge circulation effectiveness when examining the impact of principalship and teacher leadership on teachers' job satisfaction.

6.2.4 Research Objective 4

Conforming to the rounded structure of educational leadership and its influence on teachers' satisfaction, this research extended the fourth research objective, *"To evaluate the moderation of school culture over the impacts of educational leadership."* In particular, this goal is especially associated with the third study question:

Research question 3:

"How does school culture affect the influence of educational leadership on teachers' job satisfaction?"

A total number of 53 publications on school culture have been reviewed within Chapter 2 and indicate the moderate effects of school culture on the influence of principalship and teacher leadership on teachers' job satisfaction. Therefore, two hypotheses, H7 and H8, have been pointed out (Table 4). Hypothesis H7 states that school culture moderates the relationship between principalship and teachers' job satisfaction. This suggests that the impact of principalship on job

satisfaction may vary depending on the prevailing school culture. Hypothesis H8, on the other hand, proposes that school culture also moderates the relationship between teacher leadership and teachers' job satisfaction. This implies that the influence of teacher leadership on job satisfaction may be influenced by the specific school culture in place. In addition, relying on the prior work of (Sadeghi et al., 2013; Smith & Holloway, 2020), the researcher proposed a hypothesis about the direct influence of school culture on teachers' job satisfaction (H9).

Over the course of the process of validating the PLS-SEM model, it was discovered that Hypotheses 7 and 8 were not supported by evidence. Since this is the case, the culture of the school does not have any moderating influence in this model. However, it became clear that the culture of the school has a direct influence on the level of job satisfaction experienced by teachers, and this influence is moderate (0.196).

6.2.5 Research Objective 5

The final research objective of this project is "To inform policy renovations towards K-12 educational leadership development." In addition to the aforementioned findings from previous research questions, it is crucial to tackle the fourth research question.

Research question 4:

"What are the differences in teachers' job satisfaction between demographics (gender, level of education, years of experience, grade level of teaching, and school type)?"

Chapter 4 analysed the differences in teachers' job satisfaction across demographics using five domains: *S1 (Current job matched their expectation), S2 (Happy with the current conditions), S3 (Overall satisfaction), S4 (Perceived value of being a teacher), and S5 (Intention to maintain their teaching occupations).* The mean differences that are derived from each demographic category exhibit comparable patterns throughout all five domains, in addition to the overall means, as shown in Table 11. Nevertheless, it is important to highlight the fact that certain subgroups of teachers exhibit higher or lower levels of happiness in certain fields.

Genders and Teachers' Job Satisfactions

Across five domains, the differences in job satisfaction between male and female teachers are not significant. There is only a slight difference in domain S1, in which male teachers feel that their jobs match their expectations a bit more than their female peers. Thus, this slight difference does not imply any significant variations in overall job satisfaction between male and female teachers.

This study contributes to the contradictory findings that have been found in previous academic research on the relationship between gender and satisfied teachers. Tran (2015) conducted an investigation into the experiences of 387 Vietnamese teachers working in lower secondary education and discovered that female teachers reported higher levels of stress and lower levels of satisfaction than their male counterparts. Previous empirical findings come from the province of New Brunswick in Canada (Ma & MacMillan, 1999) and the state of Minnesota in the United States of America (Mahmood et al., 2011). In comparison to their male colleagues, female teachers reported higher levels of satisfaction, according to Shrestha (2019). With regard to the contexts of

Cyprus and India, respectively, Menon & Athanasoula-Reppa (2011) and Singh & Kumar (2016) discovered that there was no significant variation in the level of job satisfaction between the sexes.

Teaching Experience and Teachers' Job Satisfactions

To capture the multi-facets of teaching experiences and teachers' satisfaction, the study considered two categories of experiences: Total years of teaching experience, and teachers' experience at their current school. The total years of teaching experience provides a comprehensive understanding of a teacher's overall professional background and expertise. On the other hand, teachers' experience at their current school sheds light on their specific familiarity with the school's environment, curriculum, and community dynamics. By examining both categories, the study aims to gain a nuanced perspective on the factors influencing teachers' satisfaction in their profession.

Regarding the total years of experience, the indices from five domains indicated that 5-10 years is the happiest range for teachers, followed by the second range of 3-5 years. Teachers with more than ten years of experience perceived the lowest satisfaction scores across five domains, just a little bit higher than their juniors with less than three years of experience. This suggests that while some level of experience is beneficial for teacher satisfaction, there may be a point of diminishing returns after a certain number of years.

These findings shared similar insights to the prior work of Fraser et al. (1998), which concluded that teachers with more extended service are overall less satisfied with teaching. Klecker & Loadman (1997) also stated that teachers with five or fewer years of teaching experience report higher levels of satisfaction due to their expectation of future opportunities for advancement. Guha

et al. (2017) also raised concerns about teacher retention when it is harder to recruit and keep teachers. Their study also suggested mentoring programs that offer early-career teachers opportunities to learn and grow as a medium to increase teachers' possibility of staying. Cockburn (2000) also pointed out scopes and pathways to enhance teacher recruitment, retention time, and rate, while Demirtas (2010) stated a linear relationship between teachers' age and their decreasing satisfaction.

Regarding teachers' years of experience at their current school, teachers with less than three years and 3-5 years of experience perceived the highest levels of satisfaction among almost five domains. However, colleagues who have been teaching at their current school for 5-10 years expressed lower satisfaction across three out of five domains (S2, S4, S5). They are satisfied with their current occupations (S1) and overall satisfaction (S3) at similar levels to the newcomers. However, they have pretty low satisfaction with the current working conditions (S2), slightly lower satisfaction with the perceived value of being a teacher (S4), and remarkably lower intention to maintain their job (S5). The undermost satisfaction across all domains especially belongs to teachers who have engaged with a school for more than ten years. These long-term teachers may be experiencing burnout or feeling stagnant in their current positions. They may also be more aware of the challenges and limitations of being a teacher, leading to a lower perceived value of their profession. Additionally, the decrease in job satisfaction and intention to maintain their job could be attributed to a lack of opportunities for growth or advancement within their current school. Regarding the Likert scale of ten, this group of teachers expressed that they were less satisfied than the other groups, ranging from 0.3 to 0.95 points. Overall, the longer teachers maintain their occupation, the higher the tendency for them to have lower levels of satisfaction.

Teachers' Education and Teachers' Job Satisfactions

In most aspects, teachers with bachelor's degrees are slightly satisfied with their peers who hold master's degrees. However, the minor variations observed between the two groups do not significantly impact their overall satisfaction with their peers. This finding lends credence to the previous research conducted by Bentea & Anghelache (2012). In specifically, they evaluated the perceived job satisfaction and motivation of 122 Romanian teachers working in grades K-12. They also underlined the significance of continual professional growth rather than formal degree education. While this finding is in contrast to the conclusion that Aliakbari (2015) drew from the population of 332 Iranian secondary teachers, which was that academic degrees are connected with teachers' job satisfaction, this data also contradicts that conclusion.

Grade Level of Teaching and Teachers' Job Satisfactions

A number of earlier studies have highlighted the fact that teachers at primary schools ((Ontas, 2016; Kumar & Balasubramani, 2019), lower-secondary (Leung et al., 2009; Admiraal, 2022) and upper-secondary schools (Kothawade, 2011) are experiencing symptoms of burnout and working conditions that are extremely difficult. Primary school teachers experienced higher levels of strain and worry, as well as poorer levels of well-being, compared to their peers who teach older pupils (Hoang, 2020; Chan et al., 2021). This was especially true during the chaotic time of the COVID-19 pandemic. However, within the scope of this study, teachers who teach primary, lower-secondary, and upper-secondary levels expressed similar levels of satisfaction across all the five measured aspects. This finding suggests that educational leadership practices may have a consistent impact on teachers' satisfaction regardless of the grade level they teach. Additionally,

the inclusion of indirect factors such as students' outcomes and income in prior studies may have provided a more comprehensive understanding of teachers' satisfaction in those contexts.

In addition, it is important to note that previous research has frequently included other aspects, such as the outcomes of students, the status of their marriages, and their incomes (Anbu, 2015; Suriansyah & Aslamiah, 2018), in order to evaluate the level of pleasure that teachers have. On the other hand, because the purpose of this research was to evaluate the impact of educational leadership via the lens of social exchange and knowledge management theories, such indirect influences were not taken into consideration.

School Types and Teachers' Job Satisfactions

Overall, teachers from public schools demonstrated lower levels of satisfaction in five measured domains. However, the differences in their current occupations (S1) and the perceived value of being a teacher (S4) are not significant. Thus, we can conclude that regardless of the school type, teachers are happy with their teaching career and the values they receive from teaching. This suggests that the teachers' perceived characteristics and values are not solely dependent on the type of school they work in, but rather on other factors such as their current job responsibilities and the intrinsic rewards they derive from teaching. It is important to further explore these factors to better understand the varying levels of satisfaction among teachers in different school settings. This finding shares the same insight as the work of Lopes & Oliveira (2020) that as regards factors related to the teacher directly, there is no difference between teachers' satisfaction across school types; while regarding school governance-related factors, school type is a significant predictor of teachers' satisfaction.

On the other sides, private school teachers have higher overall satisfaction (S3) and are happier with their current working conditions (S2) than their peers from public schools. As a result, private school teachers have a higher tendency to maintain their current jobs. This suggests that private schools may have more effective governance structures or policies in place that contribute to higher job satisfaction among their teachers. Additionally, the findings highlight the importance of considering both individual and organisational factors when examining teacher satisfaction and retention rates. Scholars across the globe also shared similar findings. For instance, Crossman & Harris (2006) reported that teachers in private schools in the UK perceived higher satisfaction than ones from public schools. Similar findings are also found in the case of the USA (Renzulli et al., 2011) and India (Mehta, 2012). These studies suggest that the presence of supportive leadership and clear communication channels within schools can greatly impact teacher satisfaction. Furthermore, the findings draw attention to the need for policymakers and school administrators to address both individual needs and systemic issues in order to improve teacher retention rates.

6.3 Theoretical Contributions

A primary purpose of this research was to systematize the flow of research on educational leadership, schools as learning organisations, and teachers' job satisfaction. This was accomplished by our complete evaluation of the relevant literature. In particular, this study analysed the trajectory development of the concepts of general leadership (from 1950 to 2022), educational leadership (from 1975 to 2022), schools as learning organisations (from 1975 to 2022), and teachers' satisfaction (from 1956 to 2022). All of these concepts were examined from the perspective of the study. There has also been an examination of the most recent initiatives that have been made to

measure educational leadership. Consequently, the findings of this paper lead to the identification of a number of blind spots and blank spots pertaining to that subject matter. In general, this research effort made a contribution to the diversification of those conversations and debates that were already taking place on educational leadership and teacher satisfaction. At the same time, the findings of this research contribute to the minimalisation of the theoretical and empirical gaps that exist between established countries and emerging countries. Additionally, the findings of this research enrich the existing knowledge base of schools as learning organisations.

Regarding this project's first research aim, "to propose and validate a framework to measure educational leadership", the study came up with a congruent model of educational leadership, which considers the vital roles of teacher leadership, complementing the well-established roles of principalship. At first, this model expanded previous findings regarding principalship that were published by Leithwood et al. (2020) and the model that Pan & Chen (2020) had published about teacher leadership. This was accomplished by merging the validated constructs of both models into a new framework. The findings provided evidence that both principalship and teacher leadership had an impact on the level of job satisfaction experienced by teachers and the efficiency with which they share their knowledge. Previous research on principalship (Craig, 2021; Gurr, 2017; Pashiardis et al., 2018; W. Zhang et al., 2023) and teacher leadership (Crowther, 1997; Smylie & Eckert, 2018; You et al., 2017; W. Zhang et al., 2023) was also strengthened by the findings of this study for a number of reasons. In a broader sense, this study was a response to the request made by Hallinger (2020) on the excessive focus of existing literature on head teachers, their behaviors, and leadership styles when it comes to the examination of educational leadership.

Overall, the findings of this study contribute to the ongoing discussion on the importance of distributed leadership and collaborative decision-making in schools.

Second, regarding factors that are associated with teachers' job satisfaction, studies in the past decades have focused too much on student achievements (especially in math and literature) (Figlio & Loeb, 2011), school achievements (Wöbmann et al., 2007), teachers' performance (Smith & Holloway, 2020) and burnout (Capone & Petrillo, 2020) (as presented in the motor theme of research on teachers' job satisfaction, Figure 3). To complement these factors, this research explored the influence of teacher leadership and knowledge circulation effectiveness on teachers' job satisfaction. These factors were chosen because they have been found to play a significant role in shaping teachers' experiences and perceptions in the school context. Teacher leadership refers to the ability of teachers to take on leadership roles within their schools, such as mentoring other teachers or participating in decision-making processes. Knowledge circulation effectiveness, on the other hand, refers to how well information and ideas are shared and disseminated among teachers within a school. By examining these factors, this research aims to provide a more comprehensive understanding of the various factors that contribute to teachers' job satisfaction. Moreover, existing concepts of educational leadership mostly rely on the structure of the school system to determine leadership factors (Leithwood, 1994; Sergiovanni, 1984) or leadership characteristics (Gronn, 2000; Hopkins & Jackson, 2003). This study extended the call of Dimmock & Walker (2002, 2005) on constructing nonsequential approaches to school leadership development. In particular, the research extended findings on the effectiveness of collaboration and partnership, interpersonal communication, staff and professional development – three out of eight aspects proposed by Dimmock & Walker.

In addition, while most previous research considered teachers as participants to measure the leadership style or effectiveness of school leaders only, this study positioned teachers as the primary research object and explored their perceived values about leadership practices of school leaders, their peers and themselves, in nonsequential processes of teaching, learning, and professional development. This approach allowed for a comprehensive understanding of the various factors that influence teachers' perceptions of leadership. By examining their perspectives on leadership practices within different contexts, such as teaching, learning, and professional development, the study provides valuable insights into the complex dynamics between school leaders, teachers, and their peers.

Fourth, by examining the implementation of learning organisation theories in the K-12 education setting rather than commercial settings, as suggested by (Berry, 2019), this study contributes to the existing body of knowledge on organisational learning. Furthermore, it offers insights into how these theories can be effectively applied in educational settings to enhance student outcomes and promote continuous improvement. This movement also responded to the concern of Tsai & Li (2007) that learning organisation theories have been initiated from manufacturing industries and mostly applied in commercial work environments only, as well as the concern of Saks (2006) that theoretical frameworks on teachers' job satisfaction are borrowed from other industries. The application of organisational learning theories in educational settings not only expands the scope of research but also addresses the unique challenges and dynamics within the education sector. By exploring how these theories can be effectively applied in schools and universities, educators can develop strategies to foster a culture of continuous learning and improvement among both students,

teachers, and of course, other non-teaching staff. Additionally, by developing theoretical frameworks specifically tailored to teachers' job satisfaction, researchers can provide more accurate and relevant insights into the factors that influence teacher motivation and well-being in educational settings.

The findings of this research confirmed that, regardless of the school type and grade level, knowledge circulation is a growth factor that contributes to the development of schools as learning organisations to step out of the trap of "good enough". In particular, knowledge circulation directly impacts teachers' job satisfaction, similar to the previous finding of Copland (2003). Furthermore, the research highlighted the importance of creating a supportive and collaborative work environment that encourages knowledge sharing among teachers. This not only enhances their job satisfaction but also fosters continuous professional growth and improvement within the educational institution. Besides, the study also confirmed the contributions of knowledge circulation to strengthening the influences of educational leadership on teachers' job satisfaction, which supports earlier studies by Brundrett & Rhodes (2011) and Keay & Lloyd (2011). These findings suggest that promoting a culture of knowledge sharing and collaboration can have a positive impact on both teacher satisfaction and the overall effectiveness of educational leadership.

The inferences drawn from this research also endorsed the mediation roles of knowledge circulation (including the four phases of transforming tacit knowledge into explicit knowledge and vice-versa: Socialisation, Externalisation, Combination, and Internalisation) over the impacts of educational leadership on job satisfaction. The outcomes of this study indicate that educational leaders who are able to support the sharing and transformation of knowledge among their staff

members are more likely to contribute to higher levels of job satisfaction. In light of this, it is essential to establish a working atmosphere that is not just friendly and collaborative but also promotes the exchange of information and the acquisition of new skills. First and foremost, the investigation supported previous research on the effects of principalship on the knowledge circulation practices of teachers (Berry, 2019; Da'as, 2022). In detail, with emphasis on the four factors that contributed to the notion of principalship in this study (Set directions; Build relationships and develop people; Develop the organisation to support desired practices; and Improve the instructional program), they equally contributed to the overall direct and indirect impact on knowledge circulation. It was discovered that these elements contributed to the formation of a constructive and encouraging atmosphere, one in which educators felt at ease exchanging their expertise and gaining knowledge from one another. In addition, the research showed that administrators who successfully integrated these elements were able to cultivate a culture of innovation and continual improvement within the institutional community of the school.

Similarly, the influence of teacher leadership on knowledge circulation has also been corroborated. Amongst the four constructs adopted from the recent study of Pan & Chen (2020), teachers' intentions and behaviours in initiating curricular and instructional improvement (ICI) and bettering teaching environment (BTE) have more significant influences on knowledge circulation effectiveness than their way to communicate a learning vision (CLV) and to support teacher professional development activities (STPD). These findings imply that teachers who actively participate in curricular and instructional improvement and try to establish a better teaching environment are more likely to contribute to the successful circulation of information within the school community. This is because these teachers are more likely to be involved in all aspects of

the improvement process. For the purpose of fostering innovation and continual development, it is essential for educational institutions to acknowledge the significance of the aforementioned objectives and behaviors.

These findings consolidated the preceding results about teachers' involvement in renovating the curriculum (Hoang et al., 2020) and teaching practices (Siddiqui et al., 2021), professional collaborations (McCharen et al., 2011) and teachers' communities of practices (Duong et al., 2021). By appreciating the significance of these intentions and behaviors, schools have the ability to cultivate a culture of continuous improvement and innovation, which ultimately benefits the entire school community.

Thereafter, significantly, the research also ratified that knowledge circulation reflected the impacts of principalship and teacher leadership and transformed them into a congruent influence on teachers' job satisfaction. It would appear, on the basis of this conclusion, that the ability of school leaders and teacher leaders to facilitate the dissemination of information is closely connected to the degree to which these individuals are successful in enhancing the level of job satisfaction experienced by teachers. Moreover, the study highlights the significance of establishing an environment that is not only supportive but also collaborative. This environment should allow for the free flow of information, which ultimately results in an increase in the level of job satisfaction regarding educators' perceived experiences. The findings of these path linkages were in agreement with the conclusions reached by Talebizadeh et al. (2021) regarding the full mediation effect of teachers' trust and knowledge-based sharing behaviors in their research on learning-centered leadership. The implications of these findings extend the request made by Elena et al. (2010) to

investigate the ways in which teachers' perceptions of support and collaboration influence their level of job satisfaction.

In furtherance of these above findings, the study also examined the moderation effects of school culture by testing two hypotheses on the path relationships between school culture, principalship, and teacher leadership on teachers' job satisfaction. Particularly noteworthy is the fact that the statistical findings disproved the moderate effect that school culture plays. Based on these data, it appears that the perceptions of support and collaboration that teachers have a direct impact on the amount of job satisfaction that they experience, regardless of the culture of the school. This outcome contrasts with the existing claims of Liu et al. (2021) about the moderation effects of school culture. However, the findings substantiated the direct influence of school culture on teachers' job satisfaction, which shares commonalities with previous investigations by McCharen et al. (2011), Van Houtte & Van Maele (2011), and Gil et al. (2019). All of these earlier research have come to the same conclusion: the culture of the school has a substantial impact in determining the level of job satisfaction experienced by instructors. Consequently, despite the fact that the current data cast doubt on the idea that school culture might operate as a moderating factor, they continue to support the significance of this component in determining the degree to which instructors are satisfied with their jobs overall.

In brief, regarding theoretical contributions, the research adopted the philosophical stands of the complexity theory (Capra, 2007) to propose a congruent definition of educational leadership as an amalgamation of principalship and teacher leadership. This definition acknowledges the interconnection and interdependence of school administrators and instructors in the process of

developing a strong culture inside an educational institution. Furthermore, it emphasizes the importance of a collaborative approach to leadership that recognizes and appreciates the significance of the contributions made by both administrators and teachers in the process of enhancing job satisfaction. The study also synthesised the foundational ideas of the social exchange theory (Cropanzano & Mitchell, 2005) and knowledge management theory (the SECI model, Nonaka, 1990) to portray and validate a theoretical framework for educational leadership, knowledge circulation, school culture, and teachers' job satisfaction. The purpose of this theoretical framework is to illustrate the significance of effective communication and the exchange of information between school leaders and teachers in the process of developing a positive school culture. It is aware of the fact that enhanced job satisfaction for both administrators and teachers is a result of collaboration between both of them, which involves the exchange of ideas and resources. In addition, this framework underscores the role that school leaders have in the process of establishing a warm and encouraging atmosphere in which educators are made to feel respected and given the authority to share their expertise.

The new model contributed to the theoretical gaps in educational leadership measurements (Dimmock & Walker, 2005; Hallinger, 2020), knowledge management in the field of education (McCharen et al., 2011; Snell & Hong, 2012), and especially, the neglected roles of teacher leadership (Smylie & Eckert, 2018; Hallinger, 2020). This new model also addresses the requirement for teachers to collaborate with one another and share their knowledge, which has been demonstrated to further improve the outcomes for students (Karen & Toole, 1999). Furthermore, it underlines the significance of acknowledging and making use of the knowledge of teachers in the decision-making processes that take place within K-12 educational institutions.

Equally important to the contributions from the proposed and validated theoretical framework, the findings of this research also extended the discussion of teachers' job satisfaction among various demographic factors. Age, gender, number of years of teaching experience, and educational background were some of the demographic criteria that were considered. The study found that there were significant disparities in degrees of job satisfaction based on these criteria, which provided helpful insights for understanding the intricacies of teacher satisfaction in a variety of circumstances. To begin, there is no difference in the level of job satisfaction experienced by teachers of different genders with relation to the five dimensions of job satisfaction that are measured. This conclusion was different from the one that was found in the most recent study conducted by Webber & Rogers (2018). That study discovered that female teachers report higher levels of satisfaction with aspects such as work-life balance, recognition, and strong mentoring opportunities, whereas male teachers report higher levels of satisfaction with performance and achievement. In addition, Mahmood et al. (2011) found that female teachers in secondary schools in India report higher levels of satisfaction than their male counterparts. When it comes to the result that Klassen & Chiu (2010) reached, gender may have a role in determining job satisfaction, but it is not the deciding factor. Generally speaking, there should be a greater number of investigations conducted to further investigate the specific disparities in job satisfaction that exist between the sexes across a variety of circumstances and cultures.

Subsequently, the research also was not able to find significant differences in Vietnamese teachers' job satisfaction among their levels of education. It would appear from this that the degree of education that Vietnamese teachers have obtained does not necessarily have an effect on the overall

job satisfaction that they experience. Nevertheless, additional research might investigate other aspects that can have an impact on job satisfaction in this particular setting. In contrast to the ongoing disputes regarding previous findings, this conclusion was different. An example of this would be the discovery made by Cavusoglu et al. (2021) that Turkish educators who have completed higher levels of education tend to report lower levels of job satisfaction. On the other hand, Abdulahi (2020) found that Ethiopian teachers who had greater qualifications reported higher levels of job satisfaction. This was based on the fact that the degree of education that teachers had was considered to be a determining factor that led to job satisfaction. In the specific context of implementing online teaching approaches in China, Zhu et al. (2023) found that instructors with higher levels of education are also older teachers, struggle with teaching reforms, and frequently report lower levels of job satisfaction. This was seen with regard to the implementation of online teaching approaches. According to these findings, the connection between the level of education that teachers have, and their level of job satisfaction may vary depending on the cultural and educational setting in which they are working. In order to provide a more comprehensive understanding of this intricate link, it is essential for future research to conduct additional investigations into the elements that influence job satisfaction among educators who have completed higher levels of education. The context of this research is K-12 education, which is not as demanding and complicated as higher education in terms of the requirements for teachers' professional qualifications. It is important to note that this is the context in which this research is being conducted. For this reason, additional research needs to be conducted in the future in order to determine the influence that the level of education of teachers plays.

Next in line is the concern of teachers' grade level of teaching. Within the scope of this study, there is no significant difference in job satisfaction between primary, lower secondary, and upper secondary teachers. The results of this study indicate that teachers of varying grade levels report comparable levels of satisfaction with their jobs. However, it is essential to keep in mind that other aspects, including as the number of students in a classroom, the requirements of the curriculum, and the assistance provided by administration, may still have an effect on their total job satisfaction. The empirical data that comes from Vietnam is comparable to the conclusions that Glaveli et al. (2022) discovered in the past about the situation of Greek primary and secondary school teachers. Additionally, Pedditzi et al. (2021) investigated the fact that Italian secondary school teachers report lower levels of job satisfaction compared to their colleagues who teach in elementary schools. This finding presents a rather contradicting perspective. Based on these contradictory findings, it appears that the amount of job satisfaction experienced by educators may vary not just between countries but also between educational levels within the same nation. It is possible that the distinct difficulties and requirements that instructors at each level are required to meet are a contributing factor in the disparities in work satisfaction that are seen. It is necessary to do additional study in order to have a better understanding of the specific aspects that influence the work satisfaction of teachers in a variety of educational settings.

Additionally, this research contributed novel findings about job satisfaction across various ranges of experiences. The study found that job satisfaction was highest among employees with less than five years of experience, but gradually decreased as the years of experience increased. Specifically, with regard to the total number of years of experience that instructors have, the findings of this research were in agreement with the findings of the previous study by Klassen & Chiu (2010) on

the nonlinear relationship that exists between teachers' experience and their level of satisfaction. The level of satisfaction experienced by early career teachers continues to rise until they reach the peak of their satisfaction about halfway through their careers (about five to ten years), after which it begins to decline. The experience that instructors have had at their current schools was also investigated in this study, and the researchers found that the curve was comparable. Therefore, it is possible that there is a blind spot in the expectations that instructors have placed on their existing institutions. In case such expectations are not met, and other circumstances cause them to transfer to a different school, what will their new expectations be, and how will teachers find a way to come up with such expectations? It is probable that their newly formed expectations will be influenced by their previous experiences, whether those experiences were pleasant or negative. Furthermore, the establishment of these new expectations may also be influenced by other factors, such as the culture of the school, the leadership, and the support systems the school provides. As a result, the author would like to make a request for further investigation to be conducted on the specific case of job satisfactions prior to, during, and following transition periods for educators across levels of education.

Last but not least, the final demographic factor is school types, including public and private schools. Different types of schools can have a substantial impact on the educational options and experiences available to a person. The government provides funding for public schools, which often have larger class sizes. On the other hand, private schools receive funding from private sources; hence, they typically have smaller class sizes and offer more specialized programs. When it comes to analyzing demographic trends in educational research, where teacher development is not an exception, it is essential to have a solid understanding of the variations that exist between

these different types of schools. The empirical data from Vietnam is comparable to the findings from other nations, as was discussed in the part that came before this one (e.g. Crossman & Harris, 2006). Private school instructors reported higher levels of satisfaction than public school teachers with regard to their working circumstances and their willingness to continue working in their current positions. This is despite the fact that teachers from both public and private schools reported experiencing a similar degree of happiness with their careers. It appears from this that the working circumstances and resources that are available in private schools may be a contributing factor to the greater levels of job satisfaction that teachers experience. In addition, it is essential to take into consideration the impact that these disparities have on the outcomes of students and the overall quality of education and instruction. While it is true that the working circumstances and resources in private schools may contribute to higher job satisfaction for teachers, it is important to consider that public school teachers often face challenges that require resilience and dedication, leading to a sense of fulfillment in their careers despite limited resources (Zhu et al., 2023). The findings of this study highlight the significance of retaining teachers in public schools that have little resources or autonomy to modify their teaching and learning settings (Duong et al., 2021).

6.4 Policy Implications and Practical Contributions

In addition to the theoretical contributions, this research also sheds light on several policy implications and practical insights. The dynamic nature of the current VUCA and TUNA worlds (Scoblic, 2020) requires policymakers, school leaders, teachers, and other stakeholders such as educational researchers, advocates, students, and parents to refresh their perspectives and shift approaches toward sustainable education development continuously. The policy implications of this research highlight the need for regulatory measures to address the identified issues.

Furthermore, the practical insights gained from this study can assist schools in implementing effective strategies to overcome challenges and improve their operations. By continuously refreshing their perspectives and shifting approaches, policymakers, school leaders, teachers, and other stakeholders can work together to foster sustainable education development.

Regularly there are several aspects that researchers often adopt to describe the goals of sustainable education reform, such as sustainable finance models (Kane & Staiger, 2002), sustainable investment in infrastructure and planning (Cuesta et al., 2016), sustainable curriculum development (Hoang et al., 2020), and sustainable technology enhancement (Berry, 2019), etc. This research aims to trigger another focus on the sustainable engagement and growth of teachers and schools under the prism of schools as learning organisations. By incorporating the concept of schools as learning organisations, the research aims to contribute to the overall goal of sustainable education development by ensuring that the key stakeholders in the education system are equipped with the necessary knowledge and skills to thrive in a rapidly changing world.

At the outset, the researcher would like to focus on the persistent gaps between teacher education during formal college training, teacher competencies, and their required missions to educate new generations (Duong et al., 2021). All education systems around the world have to face the undeniable fact that such gaps always exist, no matter how much effort we keep investing in formal education for pedagogical students. Therefore, continuous professional development is an essential pillar for constructing a sustainable bridge that connects those gaps. Continuous professional development plays a crucial role in equipping teachers with the necessary skills and knowledge to effectively address the growing needs of students in the 21st century (Admiraal, 2022). It offers

teachers opportunities to expand their pedagogical repertoire, stay updated with current research and best practices, and develop a reflective and growth mindset. By investing in ongoing professional development, education systems can ensure that teachers are equipped with the tools and strategies needed to meet the diverse needs of their students and contribute to the overall goal of quality education for all. Regardless of national culture and context, policymakers across the globe should reshape their visions toward supporting teachers' professional development throughout their careers beyond the boundaries of classrooms and schools (Admiraal, 2022). Establishing mentorship programs, creating opportunities for educator collaboration and networking, and providing funding and resources for professional development programs are all ways to achieve this (Siddiqui et al., 2021). Additionally, policymakers should establish knowledge-exchange platforms, encourage and support teachers in pursuing advanced degrees, attending conferences and workshops, and engaging in continuous learning. By placing emphasis on and investing in teachers' professional development, education systems can ensure that students receive the highest quality education and are prepared for success in a continuous changing world. As the mechanism of knowledge-sharing-based approaches triggers teachers' motivations to learn and share at the same time, the more rounds of knowledge circulation we can foster, the more constructive teaching and learning environments we can form. Thus, by extending connections and engagements, education systems will be able to embrace new possibilities and pathways to sustain the future of our classrooms, schools, and societies.

Subsequently, to sustain educational reforms, policymakers should pay attention to school leaders' capabilities to deal with daily ad-hoc and long-term targets at the same time. On the one hand, they need to revisit current policy and regulation structures to determine obstacles that inhibit

principals' visions and focuses. The more compromising the principals have to deal with short-term issues, the higher risks we have when aiming to sustain long-term development goals, and the more chances there are that innovations and opportunities will be missed or skipped (Bixler, 2011). On the other hand, policymakers should also invest in providing school leaders with the necessary resources and professional development opportunities to enhance their capabilities. This includes training programs that focus on strategic planning, effective communication, and problem-solving skills. By equipping principals with the tools they need to effectively manage both daily challenges and long-term goals, educational reforms can be sustained, and schools can continue to provide high-quality education to students (Hoang et al., 2020). In addition, by fostering principals' visionary thinking and strategic engagement capabilities, we will allow them to attribute more to enhancing the linkages between stakeholders and resources toward better learning visions and learning and teaching environments (Bogler, 2001). Ultimately, the success of educational reforms relies on the ability of school leaders as change agents to navigate the complexities of the education system and effectively implement necessary changes. With their expertise and guidance, teachers can be inspired to implement new teaching methods and strategies that align with the evolving needs of students (Maynard, 2001). Furthermore, principals can collaborate with parents, community members, and other stakeholders to create a supportive network that fosters the holistic development of students.

In addition, policymakers and school leaders should consider teachers as change agents. The findings of this research determined that the influences of teacher leadership over knowledge circulation and teachers' job satisfaction are greater than principalship. Thus, teachers should be recognised as pivotal figures in transforming teaching and learning environments (Allen, 2018).

By embracing teachers as change agents, policymakers and school leaders can empower them to take ownership of their classrooms and contribute to the development of innovative teaching practices. Furthermore, providing opportunities for teacher leadership can not only enhance knowledge circulation within schools but also foster a sense of job satisfaction among educators. Therefore, it is crucial for education systems to invest in professional development programs that promote teacher leadership and create a collaborative and supportive culture where teachers can thrive (Liu, 2020).

Besides addressing immediate financial and infrastructure investments for schools, policymakers should allocate proper resources to promote teacher leadership. Approaches to supporting and guiding teachers' professional development should not be limited to pedagogical issues only; concerning the validated framework of educational leadership in this project, such support must be extended to a broader holistic scope of teachers' capacity development, engagement, and collaboration. By providing teachers with opportunities for leadership, education systems and schools can tap into the expertise and potential of their educators (Lai & Cheung, 2015). This not only benefits individual teachers in their professional growth but also creates a positive school culture where teachers feel valued and empowered. By expanding the scope of teacher professional development to include capacity development, engagement, and collaboration, policymakers can ensure that teachers have the necessary skills and support to thrive in their roles and positively impact student learning outcomes.

Also, the researcher suggests that policymakers should establish and maintain mechanisms to evaluate and improve these supporting regulations (Elmore, 2000), to ensure the efficiency and

effectiveness of investment in education across levels. Fostering a positive school culture requires a commitment to ongoing communication and feedback between teachers and administrators. Regular check-ins and opportunities for open dialogue can help identify areas for improvement and address any concerns or challenges that may arise (Parker et al., 2015). By investing in these foundational elements, policymakers can lay the groundwork for a thriving educational ecosystem that benefits both teachers and students alike.

Furthermore, policymakers also need to acknowledge the contemporary gaps between public and private schools. Regarding the case of Vietnam, in the early 1990s, private schools were considered as alternatives for students who were not good enough to secure a spot in public schools. However, to date, that proposition has been changed, and many top-tier K-12 schools in Vietnam are private schools. This shift also created differences in teacher recruitment and development practices across school types. As private schools gained recognition and popularity, they were able to attract highly qualified teachers through competitive salaries and benefits, while public schools struggled to retain and attract teachers due to limited resources and lower salaries. Consequently, this disparity in teacher quality has led to a significant gap in educational outcomes between public and private schools in Vietnam. Therefore, policymakers must address this issue and ensure that all students, regardless of their school type, have access to quality education and equal opportunities for success.

The population of this study focused on Hanoi and Ho Chi Minh City, two major cities of Vietnam, and teachers' job satisfaction results indicated the increasing competitive advantages of private schools. Prior studies identified funding (Duong et al., 2021), organisational structure (Hoang et

al., 2020), and learning visions (Truong et al., 2017) as the leading causes of these gaps in Vietnamese education. Therefore, policymakers should investigate the cases of various private schools to trigger further questions and findings that can help to strengthen the development of public schools. By examining the funding, organisational structure, and learning visions of private schools, policymakers can gain valuable insights into how these factors contribute to the higher job satisfaction of teachers. This knowledge can then be used to inform strategies and reforms within the public school system, aiming to bridge the gap and improve overall job satisfaction among public school teachers. Additionally, exploring the cases of successful private schools may also shed light on innovative approaches and practices that can be adopted by public schools, ultimately enhancing the quality of education provided to students.

To conclude, regardless of school type, leadership style, and other demographic factors, there are best practices that empower teachers' leadership, enhance teachers' capabilities, and embrace relationships between teachers and other stakeholders (Elmore, 2004). These best practices include fostering a collaborative and inclusive school culture, providing professional development opportunities for teachers, and creating spaces for open and honest communication. By implementing these strategies, schools can ensure that teachers feel supported, valued, and empowered in their roles. Additionally, these practices enhance the overall learning environment for students and contribute to the success of the school community as a whole. Policymakers and school leaders should strengthen their commitment to fostering these best practices through timely acknowledgement (Klassen et al., 2010), responsive guidance and support (Siddiqui et al., 2021), constructive communities of practices (Maynard, 2001), as well as other platforms to receive feedback, reflect, and reform (Liu, 2020). These initiatives can help create a positive and inclusive

culture within schools, where teachers feel valued and appreciated for their dedication. By appreciating the efforts of teachers and providing them with the necessary support and resources, policymakers and school leaders can ensure that teachers have the tools they need to succeed. This, in turn, will create a nurturing and supportive learning environment for students, leading to improved academic outcomes and a stronger school community overall.

6.5 Research Limitations

Apart from the above theoretical and practical contributions, this research also contains certain limitations. In the first instance, even though the study explored the importance of both principalship and teacher leadership, the findings relied on teachers' self-reported data, which might include response bias and inaccuracies. For instance, in some cases, the participants may lower the values of principals whom they do not favour and higher the scores of their own contributions. At the same time, these actions might double the observed gaps between measured principalship and teacher leadership. Furthermore, this study did not include an evaluation of the actual impact of principalship and teacher leadership on teachers' outcomes. While self-reported data is valuable for understanding perceptions and attitudes, it does not provide concrete evidence of the actual influence these leadership roles have on teachers' achievement. In order to enhance the validity and reliability of the findings, besides teachers' perspectives, future research should also explore the perspectives of other stakeholders such as students, parents, and school leaders. This would provide a well-rounded view of teacher leadership and its impact on educational outcomes. By examining these factors, a more comprehensive understanding of teacher leadership can be achieved, and strategies for improvement can be developed accordingly.

Moreover, within the validated theoretical framework of this study, constructs that measure principalship origin from a Western context (Leithwood et al., 2020)and constructs that examine teacher leadership came from an Asian context (Pan & Chen, 2020). Therefore, policymakers, school leaders, and educational researchers who want to utilise the findings of this study should combine these results with other triangulation approaches to ensure the robustness of their conclusions. Overall, a global perspective on teacher leadership can lead to more effective and informed decision-making in education.

Next in line is the limitation of model validation. While all statistical results ensured the validity and reliability of the model, the R^2 and adjusted R^2 of teacher leadership are pretty small, in comparison with the same indexes of other constructs. This difference led to a smaller predictivity of the construct of teacher leadership. This suggests that the model may not fully capture all the factors that contribute to teacher leadership, and there may be other variables at play that were not included in the study. Therefore, additional research is needed to further explore and validate the construct of teacher leadership in order to enhance the predictive power of the model. Additionally, future studies could consider incorporating qualitative methods such as interviews or observations to gain a more comprehensive understanding of teacher leadership and its impact on educational outcomes.

Subsequently, concerning the research context, this study solely focused on primary, lower secondary, and upper secondary schools. Therefore, the findings might not be applicable to other education contexts in which teachers' characteristics and requirements are quite different. For instance, teachers who teach kindergarten rarely have a master's degree and focus more on

nurturing and caring aspects. In another context, university lecturers are required to have higher degrees and must take care of other non-teaching duties like research and development. Hence, the proposed theoretical framework might not fit with early childhood and higher education contexts.

Similarly, another limitation of this research is the focus on schools in urban settings. On the one hand, the matured context of Hanoi and Ho Chi Minh City – the two biggest metropolitan areas of Vietnam can ensure the diversity of the dynamic interactions among measured variables and constructs. On the other hand, the results might not be representative of the entire population of Vietnamese schools and teachers. In fact, within the rural context, teachers might face more difficulties such as improper living standards, lack of teaching and learning resources, and poor training and development opportunities. Any of these obstacles might affect teachers' willingness to be involved in communities of practice, to develop their competencies and their job satisfaction.

Last but not least, as the primary focus of this research relies on learning organisation theories, the proposed framework narrowed teachers' perspectives on issues and practices related to knowledge management and sharing only. As a consequence, the framework did not cover all factors that influence teachers' job satisfaction, such as income, students' achievements, teachers' performance, and school structure, etc. Similarly, the study did not consider external factors such as school resources or community support, which could also affect the effectiveness of principalship and teacher leadership. Future research should address these limitations to further enhance our understanding of the complex dynamics within educational leadership.

6.6 Conclusions and Directions for Future Research

In conclusion, this research project contributed to extending the applications of knowledge management theories into the context of K-12 education – a sector with a considerable demand for transforming schools into learning organisations (McClelland et al., 2023). Using systematic review techniques, the researcher conducted several structured reviews to cluster the trajectory development of research focuses on principalship, teacher leadership, educational leadership measurement, schools as learning organisations, school culture, and teachers' job satisfaction among various timespans. By reviewing 1,642 articles on these above six topics, the researcher came up with notable gaps such as the over-focus on principals, the need for transforming schools as learning organisations, the imbalance of prior studies from Western countries, as well as the role of school culture in determining job satisfaction. Thereafter, the research came up with a conceptual framework with nine hypotheses on the interactions between principalship, teacher leadership, knowledge circulation effectiveness, school culture, and teachers' job satisfaction. Upon these hypotheses, the researcher constructed a questionnaire with 77 observed variables (five constructs) and six other demographic variables. The survey was distributed to K-12 teachers in two major cities of Vietnam and received 559 qualified respondents. Using descriptive analyses (description, t-test, and ANOVA) and inferential analyses (PLS-SEM), this research project validated the toolset to measure educational leadership as an aggregation of principalship and teacher leadership. Among the nine proposed hypotheses, the study confirmed six hypotheses about the relationships between principalship, teacher leadership, knowledge circulation, and teachers' job satisfaction. The findings rejected two hypotheses about the moderation role of school culture regarding the influence of educational leadership on job satisfaction and confirmed the direct impact of school culture on teachers' job satisfaction. Finally, the research came up with

a theoretical framework for educational leadership, knowledge circulation, school culture, and job satisfaction.

In furtherance of these theoretical contributions, the research presented a number of empirical findings from the instance of Vietnam, which refuted the notion that there is a difference in the level of job satisfaction experienced by teachers based on gender, level of education, or grade level of teaching. The results, on the other hand, reveal significant differences in the levels of job satisfaction experienced by teachers with varying years of experience (including overall years, as well as years of experience at their current schools) and types of schools. In general, the study made a significant contribution to the body of knowledge concerning educational leadership, schools as learning organizations, and the level of job satisfaction experienced by teachers. Additionally, the effort helped to reduce the disparities that existed between Western countries and Asian countries.

Along with these contributions, the research also contains limitations that hinder the ability to generalise its findings. To overcome the earlier-mentioned limitations, the researcher suggests that future studies should extend the triangulation of their research design by mixing responses from both teachers and principals. By including perspectives from both teachers and principals, future studies can provide a more comprehensive understanding of the impact of educational leadership on job satisfaction. Additionally, conducting longitudinal studies that follow participants over an extended period could provide valuable insights into the long-term effects of these factors on educational outcomes, allowing for a more accurate assessment of their effectiveness. These

suggestions aim to address the limitations of the current research and provide a more robust foundation for future studies in this field.

Furthermore, to enhance the generalisability of the theoretical framework, future studies can extend the research population to a broader range of settings, such as early childhood, vocational education, higher education, or other alternative education contexts. By expanding the research population to include various educational settings, researchers can gain a more comprehensive understanding of the factors influencing principalship, teacher leadership, and teachers' job satisfaction.

In addition, future studies can examine additional hypotheses about the mediation role of school culture, as well as include other non-teaching-related factors such as salary or work-life balance to measure teachers' job satisfaction. Within the current construct of knowledge circulation, the researcher would like to suggest future studies that explore teachers' intrinsic and extrinsic motivations to learn and share. For example, researchers could conduct a study comparing principals, teacher leaders, and regular teachers across different types of schools such as public, private, and charter schools. This would allow for a deeper understanding of how the educational setting influences teachers' motivations and job satisfaction.

The connections between teachers and students, parents, and local communities might play vital roles in determining teachers' job satisfaction, as well as in transforming schools into learning organisations. Overall, more investigations on school structures, other stakeholders, and their

influence on teachers' involvement in communities of practices and job satisfaction will shed further light on the conditions of schools as learning organisations.

Last but with equal emphasis, to enhance the generalisability and external validity of the proposed theoretical framework, future research can consider examining these hypotheses in rural contexts, as well as conducting comparative studies between countries across the globe. The more diversified contexts we can compare, the more insights we can gain to further develop new hypotheses and tackle new blind and blank spots.

References

Abdulahi, B. A. (2020). Determinants of teachers' job satisfaction: School culture perspective. *Humaniora*, *32*(2), 151.

Admiraal, W. (2022). Teachers' Work Conditions and their Job Satisfaction in Primary and Secondary Education. *International Journal on Studies in Education*, *5*(1), 15–26. https://doi.org/10.46328/ijonse.81

Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, *82*(2), 261–277. https://doi.org/10.1037/h0076477

Alavi, M., Kayworth, T. R., & Leidner, D. E. (2005). An Empirical Examination of the Influence of Organizational Culture on Knowledge Management Practices. *Journal of Management Information Systems*, *22*(3), 191–224. https://doi.org/10.2753/MIS0742-1222220307

Aliakbari, A. (2015). Job Satisfaction of Teachers according to their Academic Degrees: A case study of the secondary school teachers in the Iranian province of Mazandaran. *Journal of Economics and Sustainable Development*, *6*, 131–135.

Allen, L. Q. (2018). Teacher leadership and the advancement of teacher agency. *Foreign Language Annals*, *51*(1), 240–250. https://doi.org/10.1111/flan.12311

Alvesson, M., & Szkudlarek, B. (2020). Honorable Surrender: On the Erosion of Resistance in a University Setting. *Journal of Management Inquiry*, 105649262093918. https://doi.org/10.1177/1056492620939189

Anbu, A. (2015). Professional Stress of Higher Secondary School Teachers. *International Journal of Multidisciplinary Research and Development*, *2*, 01–03.

Anderson, J., & Sice, P. (2016). Evaluating the possibilities and actualities of the learning process. *The Learning Organization*, *23*(2/3), 94–120. https://doi.org/10.1108/TLO-02-2014-0004

Anderson, K. D. (2004). The Nature of Teacher Leadership in Schools as Reciprocal Influences Between Teacher Leaders and Principals. *School Effectiveness and School Improvement*, *15*(1), 97–113. https://doi.org/10.1076/sesi.15.1.97.27489

Angelle, P. S., & Dehart, C. (2010). A four factor model of teacher leadership: Construction and testing of the Teacher Leadership Inventory. *Annual Meeting of the American Educational Research Association*.

Argyris, C., & Schon, D. A. (1974). *Theory in practice: Increasing professional effectiveness*.

Jossey-bass.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. https://doi.org/10.1007/BF02723327

Bai, J., & Ng, S. (2005). Tests for Skewness, Kurtosis, and Normality for Time Series Data. *Journal of Business & Economic Statistics*, *23*(1), 49–60. https://doi.org/10.1198/073500104000000271

Banerjee, N., Stearns, E., Moller, S., & Mickelson, R. A. (2017). Teacher Job Satisfaction and Student Achievement: The Roles of Teacher Professional Community and Teacher Collaboration in Schools. *American Journal of Education*, *123*(2), 203–241. https://doi.org/10.1086/689932

Banks, E. C. (2003). *Ernst Mach's World Elements: A Study in Natural Philosophy*. Springer.

Barnard, P. A. (2020). Secondary school structure, organisational learning capacity and learning organisations: a systemic contribution. *International Journal of Educational Management*, *34*(8), 1253–1264. https://doi.org/10.1108/IJEM-01-2020-0037

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Barrow, J. C. (1977). The Variables of Leadership: A Review and Conceptual Framework. *The Academy of Management Review*, *2*(2), 231. https://doi.org/10.2307/257906

Bass, B. M., & Bass, R. (2009). *The Bass handbook of leadership: Theory, research, and managerial applications*. Simon and Schuster.

Beabout, B. R., & Jakiel, L. B. (2011). Family and Community Engagement in Charter Schools. In S. Redding, M. Murphy, & P. Sheley (Eds.), *Handbook on Family and Community Engagement* (p. 147).

Becker, J.-M., Ringle, C. M., Sarstedt, M., & Völckner, F. (2015). How collinearity affects mixture regression results. *Marketing Letters*, *26*(4), 643–659. https://doi.org/10.1007/s11002-014-9299-9

Benoliel, P., & Barth, A. (2017). The implications of the school's cultural attributes in the relationships between participative leadership and teacher job satisfaction and burnout. *Journal of Educational Administration*, *55*(6), 640–656. https://doi.org/10.1108/JEA-10-

2016-0116

Bensimon, E. M. (1989). A feminist reinterpretation of presidents' definitions of leadership. *Peabody Journal of Education*, *66*(3), 143–156. https://doi.org/10.1080/01619568909538653

Bentea, C., & Anghelache, V. (2012). Teachers' motivation and satisfaction for professional activity. *Procedia - Social and Behavioral Sciences*, *33*, 563–567. https://doi.org/10.1016/j.sbspro.2012.01.184

Berg, J. H., & Zoellick, B. (2019). Teacher leadership: toward a new conceptual framework. *Journal of Professional Capital and Community*, *4*(1), 2–14. https://doi.org/10.1108/JPCC-06-2018-0017

Berkovich, I., & Bogler, R. (2020). Conceptualising the mediating paths linking effective school leadership to teachers' organisational commitment. *Educational Management Administration & Leadership*, 174114322090732. https://doi.org/10.1177/1741143220907321

Berry, B. (2019). Teacher leadership: Prospects and promises. *Phi Delta Kappan*, *100*(7), 49–55. https://doi.org/10.1177/0031721719841339

Billingsley, B. S. (1993). Teacher Retention and Attrition-in Special and General Education. *The Journal of Special Education*, *27*(2), 137–174. https://doi.org/10.1177/002246699302700202

Bixler, A. (2011). What We Muggles Can Learn about Teaching from Hogwarts. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *84*(2), 75–79. https://doi.org/10.1080/00098655.2010.507825

Blumberg, A. E., & Feigl, H. (1931). Logical Positivism. *The Journal of Philosophy*, *28*(11), 281. https://doi.org/10.2307/2015437

Bogler, R. (2001). The Influence of Leadership Style on Teacher Job Satisfaction. *Educational Administration Quarterly*, *37*(5), 662–683. https://doi.org/10.1177/00131610121969460

Bolman, L. G., & Deal, T. E. (2017). *Reframing Organizations*. John Wiley & Sons, Inc. https://doi.org/10.1002/9781119281856

Bootz, J.-P., Monti, R., Durance, P., Pacini, V., & Chapuy, P. (2019). The links between French school of foresight and organizational learning: An assessment of developments in the last ten years. *Technological Forecasting and Social Change*, *140*, 92–104.

https://doi.org/10.1016/j.techfore.2018.04.007

Borman, G. D., & Dowling, N. M. (2008). Teacher Attrition and Retention: A Meta-Analytic and Narrative Review of the Research. *Review of Educational Research*, *78*(3), 367–409. https://doi.org/10.3102/0034654308321455

Bornemann, A. (1946). Business Leadership in the Large Corporation. By Robert Aaron Gordon. Washington, D. C.: The Brookings Institution, 1945. 369 pp. $3.00. *Social Forces*, *24*(3), 366–367. https://doi.org/10.2307/2571505

Bottery, M. (2016). *Educational leadership for a more sustainable world*. Bloomsbury Academic.

Bowden, A. O. (1926). A study of the personality of student leaders in colleges in the United States. *The Journal of Abnormal and Social Psychology*, *21*(2), 149–160. https://doi.org/10.1037/h0073378

Bowen, G. L., Ware, W. B., Rose, R. A., & Powers, J. D. (2007). Assessing the Functioning of Schools as Learning Organizations. *Children & Schools*, *29*(4), 199–208. https://doi.org/10.1093/cs/29.4.199

Boyan, N. (1981). Follow the Leader: Commentary on Research in Educational Administration. *Educational Researcher*, *10*(2), 6–21. https://doi.org/10.3102/0013189X010002006

Brooks, S. P., & Gelman, A. (1998). General Methods for Monitoring Convergence of Iterative Simulations. *Journal of Computational and Graphical Statistics*, *7*(4), 434–455. https://doi.org/10.1080/10618600.1998.10474787

Brundrett, M., & Rhodes, C. (2011). *Leadership for quality and accountability in education*. Routledge.

Bryman, A. (2003). *Quantity and quality in social research*. Routledge.

Burns, C. (2005). Tensions between national, school and teacher development needs: a survey of teachers' views about continuing professional development within a group of rural primary schools. *Journal of In-Service Education*, *31*(2), 353–372.

Bush, T. (2009). Leadership development and school improvement: contemporary issues in leadership development. *Educational Review*, *61*(4), 375–389. https://doi.org/10.1080/00131910903403956

Bush, T., & Glover, D. (2003). *School leadership: Concepts and evidence*.

Bushashe, M. A. (2023). Determinants of private banks performance in Ethiopia: A partial least

square structural equation model analysis (PLS-SEM). *Cogent Business & Management*, *10*(1). https://doi.org/10.1080/23311975.2023.2174246

Camper, B. M. (2019). *A Case Study Analysis among Former Urban Gifted High School Dropouts* (No. 6182).

Canrinus, E. T., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, A. (2012). Self-efficacy, job satisfaction, motivation and commitment: exploring the relationships between indicators of teachers' professional identity. *European Journal of Psychology of Education*, *27*(1), 115–132. https://doi.org/10.1007/s10212-011-0069-2

Capone, V., & Petrillo, G. (2020). Mental health in teachers: Relationships with job satisfaction, efficacy beliefs, burnout and depression. *Current Psychology*, *39*(5), 1757–1766. https://doi.org/10.1007/s12144-018-9878-7

Capra, F. (2007). Complexity and life. *Systems Research and Behavioral Science*, *24*(5), 475–479. https://doi.org/10.1002/sres.848

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology*, *44*(6), 473–490. https://doi.org/10.1016/j.jsp.2006.09.001

Cavusoglu, B., Cek, K., & Eyupoglu, S. Z. (2021). *Modelling job satisfaction using a logistic regression model*. 020047. https://doi.org/10.1063/5.0040383

Cerit, Y. (2009). The Effects of Servant Leadership Behaviours of School Principals on Teachers' Job Satisfaction. *Educational Management Administration & Leadership*, *37*(5), 600–623. https://doi.org/10.1177/1741143209339650

Chakrabartty, S. N. (2023). Optimum number of Response categories. *Current Psychology*, *42*(7), 5590–5598. https://doi.org/10.1007/s12144-021-01866-6

Chan, M., Sharkey, J. D., Lawrie, S. I., Arch, D. A. N., & Nylund-Gibson, K. (2021). Elementary school teacher well-being and supportive measures amid COVID-19: An exploratory study. *School Psychology*, *36*(6), 533–545. https://doi.org/10.1037/spq0000441

Chapman, D. W. (2000). Trends in Educational Administration in Developing Asia. *Educational Administration Quarterly*, *36*(2), 283–308. https://doi.org/10.1177/00131610021968985

Cheng, Y. C. (1996). *The pursuit of school effectiveness: Research, management and policy*. Hong Kong Institute of Educational Research, Chinese University of Hong Kong.

Cheng, Y. C. (2002). Leadership and Strategy. In T. Bush & L. Bell (Eds.), *The Principles and Practice of Educational Management*. SAGE Publications Ltd.

Chernyak-Hai, L., & Rabenu, E. (2018). The New Era Workplace Relationships: Is Social Exchange Theory Still Relevant? *Industrial and Organizational Psychology*, *11*(3), 456–481. https://doi.org/10.1017/iop.2018.5

Cheung, R., Reinhardt, T., Stone, E., & Little, J. W. (2018). Defining teacher leadership. *Phi Delta Kappan*, *100*(3), 38–44. https://doi.org/10.1177/0031721718808263

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS Quarterly*, vii–xvi.

Choi, Y., & Chung, I. H. (2018). Effects of Public Service Motivation on Turnover and Job Satisfaction in the U.S. Teacher Labor Market. *International Journal of Public Administration*, *41*(3), 172–180. https://doi.org/10.1080/01900692.2016.1256306

Clark, V. L. P., & Creswell, J. W. (2008). *The Mixed Methods Reader*. SAGE Publications Ltd.

Cobo, M. J., Martínez, M. A., Gutiérrez-Salcedo, M., Fujita, H., & Herrera-Viedma, E. (2015). 25years at Knowledge-Based Systems: A bibliometric analysis. *Knowledge-Based Systems*, *80*, 3–13. https://doi.org/10.1016/j.knosys.2014.12.035

Cochran, W. G. (1963). *Sampling Techniques* (2nd ed.). John Wiley and Sons, Inc.

Cockburn, A. D. (2000). Elementary teachers' needs: issues of retention and recruitment. *Teaching and Teacher Education*, *16*(2), 223–238. https://doi.org/10.1016/S0742-051X(99)00056-6

Cohen, J. (1988). The effect size. In *Statistical power analysis for the behavioral sciences* (pp. 77–83).

Cohen, L., Manion, L., & Morrison, K. (2002). *Research Methods in Education*. Routledge. https://doi.org/10.4324/9780203224342

Cohen, L., Manion, L., Morrison, K., & Wyse, D. (2010). *A Guide to Teaching Practice*. Routledge. https://doi.org/10.4324/9780203848623

Coleman, P., & LaRocque, L. (1990). *Struggling to be 'good enough' : administrative practices and school district ethos*. Falmer Press.

Collins, H. (2010). *Tacit and explicit knowledge*. University of Chicago Press.

Collis, J., & Hussey, R. (2013). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students* (4th ed.). Macmillan International Higher Education.

Comte, A. (1975). *Auguste Comte and Positivism: The Essential Writings*. Transaction Publishers.

Cook, K. S., Cheshire, C., Rice, E. R. W., & Nakagawa, S. (2013). *Social Exchange Theory* (pp. 61–88). https://doi.org/10.1007/978-94-007-6772-0_3

Cooper, B., Eva, N., Zarea Fazlelahi, F., Newman, A., Lee, A., & Obschonka, M. (2020). Addressing common method variance and endogeneity in vocational behavior research: A review of the literature and suggestions for future research. *Journal of Vocational Behavior*, *121*, 103472. https://doi.org/10.1016/j.jvb.2020.103472

Copland, M. A. (2003). Leadership of Inquiry: Building and Sustaining Capacity for School Improvement. *Educational Evaluation and Policy Analysis*, *25*(4), 375–395. https://doi.org/10.3102/01623737025004375

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*(1), 3–21. https://doi.org/10.1007/BF00988593

Corlu, M. S., Capraro Prof., R. M., & Capraro, M. M. (2014). *Introducing STEM education: Implications for educating our teachers for the age of innovation*. Egitim ve Bilim.

Craig, I. (2021). Whatever happened to educational management? The case for reinstatement. *Management in Education*, *35*(1), 52–57. https://doi.org/10.1177/0892020620962813

Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE Publications Ltd.

Croce, B. (1964). *The Philosophy of Giambattista Vico*. Transaction Publishers.

Cropanzano, R., & Mitchell, M. S. (2005). Social Exchange Theory: An Interdisciplinary Review. *Journal of Management*, *31*(6), 874–900. https://doi.org/10.1177/0149206305279602

Crossan, F. (2003). Research philosophy: towards an understanding. *Nurse Researcher*, *11*(1), 46–55. https://doi.org/10.7748/nr2003.10.11.1.46.c5914

Crossman, A., & Harris, P. (2006). Job Satisfaction of Secondary School Teachers. *Educational Management Administration & Leadership*, *34*(1), 29–46. https://doi.org/10.1177/1741143206059538

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. SAGE Publications Ltd.

Crowther, F. (1997). Teachers as leaders - an exploratory framework. *International Journal of*

Educational Management, *11*(1), 6–13. https://doi.org/10.1108/09513549710155410

Crowther, F. A., Ferguson, M., & Hann, L. (2008). *Developing teacher leaders: How teacher leadership enhances school success*. Corwin Press, Inc.

Cuesta, A., Glewwe, P., & Krause, B. (2016). School Infrastructure and Educational Outcomes: A Literature Review, with Special Reference to Latin America. *Economía*, *17*(1), 95–130.

Cyert, R. M., & March, J. G. (1992). *Behavioral Theory of the Firm*. Wiley-Blackwell.

Da'as, R. (2022). Principals' attentional scope and teacher creativity: the role of principals' ambidexterity and knowledge sharing. *International Journal of Leadership in Education*, 1–23. https://doi.org/10.1080/13603124.2022.2027525

Dalin, P. (2004). *School development: Theories & strategies*. Continuum International Publishing.

Damkuvienė, M., Valuckienė, J., & Balčiūnas, S. (2019). Teacher leadership for organizational change. *Management*, *24*, 37–52. https://doi.org/10.30924/mjcmi.24.si.3

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*, 121092. https://doi.org/10.1016/j.techfore.2021.121092

Delanty, G., & Strydom, P. (2003). *Philosophies of Social Science: The Classic and Contemporary Readings*. Open University Press.

Demirtas, Z. (2010). Teachers' job satisfaction levels. *Procedia - Social and Behavioral Sciences*, *9*, 1069–1073. https://doi.org/10.1016/j.sbspro.2010.12.287

Dimmock, C., & Walker, A. (2002). School leadership in context: Societal and organisational cultures. In *The Principles and Practice of Educational Management* (p. 18). SAGE Publications Ltd.

Dimmock, C., & Walker, A. (2005). *Educational Leadership: Culture and Diversity*. SAGE Publications Ltd. https://doi.org/10.4135/9781446247143

Dormann, C. F., Elith, J., Bacher, S., Buchmann, C., Carl, G., Carré, G., Marquéz, J. R. G., Gruber, B., Lafourcade, B., Leitão, P. J., Münkemüller, T., McClean, C., Osborne, P. E., Reineking, B., Schröder, B., Skidmore, A. K., Zurell, D., & Lautenbach, S. (2013). Collinearity: a review of methods to deal with it and a simulation study evaluating their performance. *Ecography*, *36*(1), 27–46. https://doi.org/10.1111/j.1600-0587.2012.07348.x

Drucker, P. F. (1971). *Drucker on management*. Haymarket Publishing.

DuFour, R. P. (1997). The School as a Learning Organization: Recommendations For School Improvement. *NASSP Bulletin*, *81*(588), 81–87. https://doi.org/10.1177/019263659708158813

Duong, B. H., Hoang, A.-D., & Bui, T. M. H. (2021). *General Education in Vietnam: Challenges, Innovation, and Change*. Dan Tri Publishing House. https://doi.org/10.31219/osf.io/vxndy

Durkheim, E. (2014). *The Division of Labor in Society*. Free Press.

Dutta, V., & Sahney, S. (2016). School leadership and its impact on student achievement. *International Journal of Educational Management*, *30*(6), 941–958. https://doi.org/10.1108/IJEM-12-2014-0170

Eaker, R., & DuFour, R. (2009). *Getting started: Reculturing schools to become professional learning communities*. Solution Tree.

Eaker, R., DuFour, R., & Burnette, R. (2002). *Getting started: Reculturing schools to become professional learning communities*. Solution Tree.

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). *Management research : Mark Easterby-Smith, Richard Thorpe and Paul Jackson*. SAGE Publications Ltd.

Edinger, S. K., & Edinger, M. J. (2018). Improving Teacher Job Satisfaction: The Roles of Social Capital, Teacher Efficacy, and Support. *The Journal of Psychology*, *152*(8), 573–593. https://doi.org/10.1080/00223980.2018.1489364

Edmondson, A. C. (2018). *The Fearless Organization: Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth*. John Wiley & Sons, Inc.

Eldabi, T., Irani, Z., Paul, R. J., & Love, P. E. D. (2002). Quantitative and qualitative decision-making methods in simulation modelling. *Management Decision*, *40*(1), 64–73. https://doi.org/10.1108/00251740210413370

Elena, B. P., Carmen, T. U., & Alicia, A. M. (2010). Job Satisfaction of Secondary School Teachers: Effect of Demographic and Psycho-Social Factors. *Revista de Psicología Del Trabajo y de Las Organizaciones*, *26*(2), 115–122. https://doi.org/10.5093/tr2010v26n2a3

Elmore, R. (2000). *Building a New Structure For School Leadership*. Albert Shanker Institute.

Elmore, R. F. (2004). School reform from the inside out: Policy, practice, and performance. *Harvard Education Press*.

Emira, M. (2010). Leading to Decide or Deciding to Lead? Understanding the Relationship

Between Teacher Leadership and Decision Making. *Educational Management Administration & Leadership*, *38*(5), 591–612. https://doi.org/10.1177/1741143210373738

Erickson, D. A. (1967). Chapter IV The School Administrator. *Review of Educational Research*, *37*(4), 417–432. https://doi.org/10.3102/00346543037004417

Eriksson, P., & Kovalainen, A. (2015). *Qualitative methods in business research: A practical guide to social research*. SAGE Publications Ltd.

Fairman, J. C., & Mackenzie, S. V. (2015). How teacher leaders influence others and understand their leadership. *International Journal of Leadership in Education*, *18*(1), 61–87. https://doi.org/10.1080/13603124.2014.904002

Falconer, I., Beetham, H., Oliver, R., Lockyer, L., & Litterjohn, A. (2007). *Models for Learning (Mod4L) Final Report: Representing Learning Designs*.

Fayol, H. (1990). *introduction to administration*. Universidad de San Martín de Porres.

Fernandes, V. (2019). Glocalizing educational leadership development in the Asia Pacific region. *Asia Pacific Education: Leadership, Governance and Administration*, 15–29.

Field, L. (2019). Schools as learning organizations. *International Journal of Educational Management*, *33*(5), 1106–1115. https://doi.org/10.1108/IJEM-05-2018-0165

Figlio, D., & Loeb, S. (2011). School Accountability. In *Handbook of the Economics of Education* (Vol. 3, pp. 383–421). https://doi.org/10.1016/B978-0-444-53429-3.00008-9

Flemming, E. G. (1935). A factor analysis of the personality of high school leaders. *Journal of Applied Psychology*, *19*(5), 596–605. https://doi.org/10.1037/h0052228

Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, *18*(3), 382–388. https://doi.org/10.1177/002224378101800313

Foucault, M. (1970). The archaeology of knowledge. *Social Science Information*, *9*(1), 175–185. https://doi.org/10.1177/053901847000900108

Fraser, H., Draper, J., & Taylor, W. (1998). The Quality of Teachers' Professional Lives: Teachers and Job Satisfaction. *Evaluation & Research in Education*, *12*(2), 61–71. https://doi.org/10.1080/09500799808666932

Friedrich, C. J. (1961). Political Leadership and the Problem of the Charismatic Power. *The Journal of Politics*, *23*(1), 3–24. https://doi.org/10.2307/2127069

Frost, D. (2008). 'Teacher leadership': values and voice. *School Leadership & Management*,

28(4), 337–352. https://doi.org/10.1080/13632430802292258

Frost, D. (2019). Teacher Leadership and Professionality. In *Oxford Research Encyclopedia of Education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.778

Fry, G. W., & Bi, H. (2013). The evolution of educational reform in Thailand: the Thai educational paradox. *Journal of Educational Administration*, *51*(3), 290–319. https://doi.org/10.1108/09578231311311483

Fullan, M. (1995). The school as a learning organization: Distant dreams. *Theory Into Practice*, *34*(4), 230–235. https://doi.org/10.1080/00405849509543685

Furlong, P., & Marsh, D. (2002). A skin not a sweater: ontology and epistemology in political science. In D. Marsh & G. Stoker (Eds.), *Theory and Methods in Political Science* (pp. 17–41). Palgrave Macmillan.

Garavan, T. (1997). The learning organization: a review and evaluation. *The Learning Organization*, *4*(1), 18–29. https://doi.org/10.1108/09696479710156442

García Torres, D. (2019). Distributed leadership, professional collaboration, and teachers' job satisfaction in U.S. schools. *Teaching and Teacher Education*, *79*, 111–123. https://doi.org/10.1016/j.tate.2018.12.001

Garfield, E. (2004). Historiographic Mapping of Knowledge Domains Literature. *Journal of Information Science*, *30*(2), 119–145. https://doi.org/10.1177/0165551504042802

Garson, G. D. (2016). Partial least squares. In *Regression and structural equation models*. Statistical Publishing Associates.

Gay, B., & Weaver, S. (2011). Theory Building and Paradigms: A Primer on the Nuances of Theory Construction. *American International Journal of Contemporary Research*, *1*(2).

Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, *61*(1), 101–107.

Gibb, C. A. (1947). The principles and traits of leadership. *The Journal of Abnormal and Social Psychology*, *42*(3), 267–284. https://doi.org/10.1037/h0056420

Gibb, C. A. (1950). The Sociometry of Leadership in Temporary Groups. *Sociometry*, *13*(3), 226. https://doi.org/10.2307/2785459

Gil, A. J., Carrrillo, F. J., & Fonseca-Pedrero, E. (2019). Assessing a learning organization model: A teacher's perspective. *Management in Education*, *33*(1), 21–31.

https://doi.org/10.1177/0892020618783815

Gilles, C., Wang, Y., Fish, J., & Stegall, J. (2018). “I learned by watching my mentor.” Nurturing teacher leadership with an induction program. *Mentoring & Tutoring: Partnership in Learning*, *26*(4), 455–475. https://doi.org/10.1080/13611267.2018.1530174

Glaveli, N., Vouzas, F., & Roumeliotou, M. (2022). The soft side of TQM and teachers job satisfaction: an empirical investigation in primary and secondary education. *The TQM Journal*, *34*(5), 922–938. https://doi.org/10.1108/TQM-11-2020-0269

Graeff, C. L. (1983). The Situational Leadership Theory: A Critical View. *The Academy of Management Review*, *8*(2), 285. https://doi.org/10.2307/257756

Griffiths, D. E. (1959). *Administrative Theory*. Appleton-Century-Crofts.

Grissom, J. A. (2011). Can Good Principals Keep Teachers in Disadvantaged Schools? Linking Principal Effectiveness to Teacher Satisfaction and Turnover in Hard-to-Staff Environments. *Teachers College Record: The Voice of Scholarship in Education*, *113*(11), 2552–2585. https://doi.org/10.1177/016146811111301102

Gronn, P. (2000). Distributed Properties. *Educational Management & Administration*, *28*(3), 317–338. https://doi.org/10.1177/0263211X000283006

Gronn, P., & Ribbins, P. (1996). Leaders in Context: Postpositivist Approaches to Understanding Educational Leadership. *Educational Administration Quarterly*, *32*(3), 452–473. https://doi.org/10.1177/0013161X96032003008

Guba, E. G., & Lincoln, Y. . (1994). Competing paradigms in qualitative research. In *Handbook of qualitative research* (p. 105).

Guha, R., Hyler, M. E., & Darling-Hammond, L. (2017). The Teacher Residency: A Practical Path to Recruitment and Retention. *The American Educator*, *41*(31).

Gul, T., Demir, K., & Criswell, B. (2019). Constructing Teacher Leadership Through Mentoring: Functionality of Mentoring Practices in Evolving Teacher Leadership. *Journal of Science Teacher Education*, *30*(3), 209–228. https://doi.org/10.1080/1046560X.2018.1558655

Güleryüz, G., Güney, S., Aydın, E. M., & Aşan, Ö. (2008). The mediating effect of job satisfaction between emotional intelligence and organisational commitment of nurses: A questionnaire survey. *International Journal of Nursing Studies*, *45*(11), 1625–1635. https://doi.org/10.1016/j.ijnurstu.2008.02.004

Gurr, D. (2017). A Model of Successful School Leadership from the International Successful

School Principalship Project. In *How School Leaders Contribute to Student Success* (pp. 15–29). Springer International Publishing. https://doi.org/10.1007/978-3-319-50980-8_2

Guyton, E., & Farokhi, E. (1987). Relationships among Academic Performance, Basic SkillsSubject Matter Knowledge, and Edith Guyton Elizabeth Farokhi Teaching Skills of Teacher Education Graduates. *Journal of Teacher Education*, *38*(5), 37–42. https://doi.org/10.1177/002248718703800508

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*(5), 616–632. https://doi.org/10.1007/s11747-017-0517-x

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hairon, S., & Dimmock, C. (2012). Singapore schools and professional learning communities: teacher professional development and school leadership in an Asian hierarchical system. *Educational Review*, *64*(4), 405–424. https://doi.org/10.1080/00131911.2011.625111

Halfpenny, P. (1982). *Positivism and Sociology: Explaining Social Life* ((RLE Socia). Routledge.

Hallebone, E., & Priest, J. (2008). *Business and management research: paradigms and practices*. Macmillan International Higher Education.

Hallinger, P. (1998). Educational change in Southeast Asia. *Journal of Educational Administration*, *36*(5), 492–509. https://doi.org/10.1108/09578239810238474

Hallinger, P. (2000). Leading educational change in Southeast Asia: the challenge of creating learning systems. In C. Dimmock & A. Walker (Eds.), *Future School Administration: Western and Asian Perspectives* (First, pp. 169–190). Chinese University Press, The Chinese University of Hong Kongg.

Hallinger, P. (2020). Science mapping the knowledge base on educational leadership and management from the emerging regions of Asia, Africa and Latin America, 1965–2018. *Educational Management Administration & Leadership*, *48*(2), 209–230. https://doi.org/10.1177/1741143218822772

Hallinger, P., Gümüş, S., & Bellibaş, M. Ş. (2020). "Are principals instructional leaders yet?" A science map of the knowledge base on instructional leadership, 1940–2018. *Scientometrics*, *122*(3), 1629–1650. https://doi.org/10.1007/s11192-020-03360-5

Hallinger, P., & Heck, R. H. (1996). Reassessing the Principal's Role in School Effectiveness: A Review of Empirical Research, 1980-1995. *Educational Administration Quarterly*, *32*(1), 5–44. https://doi.org/10.1177/0013161X96032001002

Hallinger, P., & Kulophas, D. (2020). The evolving knowledge base on leadership and teacher professional learning: a bibliometric analysis of the literature, 1960-2018. *Professional Development in Education*, *46*(4), 521–540. https://doi.org/10.1080/19415257.2019.1623287

Halsey, L. G., Curran-Everett, D., Vowler, S. L., & Drummond, G. B. (2015). The fickle P value generates irreproducible results. *Nature Methods*, *12*(3), 179–185. https://doi.org/10.1038/nmeth.3288

Hansen, D. A., Fisherkeller, J., & Johnson, V. A. (1995). The hidden persistence of immigrant "dropouts": Distortions, blank spots and blind spots in research on schooling careers. *International Journal of Educational Research*, *23*(1), 83–105. https://doi.org/10.1016/0883-0355(95)93536-5

Hanushek, E. A., & Woessmann, L. (2011). How much do educational outcomes matter in OECD countries? *Economic Policy*, *26*(67), 427–491. https://doi.org/10.1111/j.1468-0327.2011.00265.x

Hariri, H., Monypenny, R., & Prideaux, M. (2016). Teacher-perceived principal leadership styles, decision-making styles and job satisfaction: how congruent are data from Indonesia with the Anglophile and Western literature? *School Leadership & Management*, *36*(1), 41–

62. https://doi.org/10.1080/13632434.2016.1160210

Harris, A. (2003). Distributed Leadership in Schools: Leading or misleading? *Management in Education*, *16*(5), 10–13. https://doi.org/10.1177/089202060301600504

Harris, A., Leithwood, K., Day, C., Sammons, P., & Hopkins, D. (2007). Distributed leadership and organizational change: Reviewing the evidence. *Journal of Educational Change*, *8*(4), 337–347. https://doi.org/10.1007/s10833-007-9048-4

Harris, M. M., & van Tassell, F. (2005). The professional development school as learning organization. *European Journal of Teacher Education*, *28*(2), 179–194. https://doi.org/10.1080/02619760500093255

Harris, S. G. (1990). The fifth discipline: The art and practice of the learning organization, by Peter Senge, New York: Doubleday/Currency, 1990. *Human Resource Management*, *29*(3), 343–348. https://doi.org/10.1002/hrm.3930290308

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, *28*(2), 565–580. https://doi.org/10.1007/s00180-012-0317-1

Heyder, A. (2019). Teachers' beliefs about the determinants of student achievement predict job satisfaction and stress. *Teaching and Teacher Education*, *86*, 102926. https://doi.org/10.1016/j.tate.2019.102926

Higgins, M., Ishimaru, A., Holcombe, R., & Fowler, A. (2012). Examining organizational learning in schools: The role of psychological safety, experimentation, and leadership that reinforces learning. *Journal of Educational Change*, *13*(1), 67–94. https://doi.org/10.1007/s10833-011-9167-9

Hill, A., Mellon, L., Laker, B., & Goddard, J. (2017). *Research: How the Best School Leaders Create Enduring Change*. Harvard Business Review Home.

Ho, C.-L., & Au, W.-T. (2006). Teaching Satisfaction Scale. *Educational and Psychological Measurement*, *66*(1), 172–185. https://doi.org/10.1177/0013164405278573

Hoang, A.-D. (2019). Fantastic Educational Gaps and Where to Find Them: A Review of Research in Educational Equity and Equality. *Journal of International Education and Practice*, *2*(4). https://doi.org/10.30564/jiep.v2i4.1309

Hoang, A.-D. (2020). Pandemic and teacher retention: empirical evidence from expat teachers in Southeast Asia during COVID-19. *International Journal of Sociology and Social Policy*,

40(9/10), 1141–1166. https://doi.org/10.1108/IJSSP-07-2020-0269

Hoang, A.-D., Pham, H.-H., Nguyen, Y.-C., Nguyen, L.-K.-N., Vuong, Q.-H., Dam, M. Q., Tran, T., & Nguyen, T.-T. (2020). Introducing a tool to gauge curriculum quality under Sustainable Development Goal 4: The case of primary schools in Vietnam. *International Review of Education*, *66*(4), 457–485. https://doi.org/10.1007/s11159-020-09850-1

Hock, C., Ringle, C. M., & Sarstedt, M. (2010). Management of multi-purpose stadiums: importance and performance measurement of service interfaces. *International Journal of Services Technology and Management*, *14*(2/3), 188. https://doi.org/10.1504/IJSTM.2010.034327

Hoe, S. L. (2019). The Topicality of the Learning Organization: is the Concept Still Relevant Today? In A. R. Örtenblad (Ed.), *The Oxford Handbook of the Learning Organization* (pp. 18–32). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198832355.013.2

Hofstede, G. (1992). Cultural dimensions in people management: The socialization perspective. *Globalizing Management: Creating and Leading the Competitive Organization*, 139–158.

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, *63*(6), 597–606.

Hong, J. F. L. (2012). Glocalizing Nonaka's knowledge creation model: Issues and challenges. *Management Learning*, *43*(2), 199–215. https://doi.org/10.1177/1350507611428853

Hopkins, D., & Jackson, D. (2003). Building the capacity for leading and learning. *Effective Leadership for School Improvement*, 84–104.

Hoy, W. K., Tarter, C. J., & Hoy, A. W. (2006). Academic Optimism of Schools: A Force for Student Achievement. *American Educational Research Journal*, *43*(3), 425–446. https://doi.org/10.3102/00028312043003425

Jenkins, W. O. (1947). A review of leadership studies with particular reference to military problems. *Psychological Bulletin*, *44*(1), 54–79. https://doi.org/10.1037/h0062329

Jennings, H. (1937). Structure of Leadership-Development and Sphere of Influence. *Sociometry*, *1*(1/2), 99. https://doi.org/10.2307/2785262

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, *33*(7), 14–26. https://doi.org/10.3102/0013189X033007014

Johnson, Y. (2019). *The Impact of Data-driven Instruction on Measures of Academic Progress*

Scores in an Urban Elementary Charter School. Trevecca Nazarene University.

Kane, T. J., & Staiger, D. O. (2002). The Promise and Pitfalls of Using Imprecise School Accountability Measures. *Journal of Economic Perspectives*, *16*(4), 91–114. https://doi.org/10.1257/089533002320950993

Kataoka, S., Vinh, L. A., Kitchlu, S., & Inoue, K. (2020). *Vietnam's Human Capital : Education Success and Future Challenges.*

Katzenmeyer, M. H., & Moller, G. V. (2009). *Awakening the sleeping giant: Leadership development for teachers*. Corwin Press, Inc.

Keay, J. K., & Lloyd, C. M. (2011). *Linking Children's Learning With Professional Learning* (J. K. Keay & C. M. Lloyd (eds.)). SensePublishers. https://doi.org/10.1007/978-94-6091-645-8

Kempster, S., & Parry, K. W. (2011). Grounded theory and leadership research: A critical realist perspective. *The Leadership Quarterly*, *22*(1), 106–120. https://doi.org/10.1016/j.leaqua.2010.12.010

Keuth, H. (2015). The positivist dispute in German sociology: A scientific or a political controversy? *Journal of Classical Sociology*, *15*(2), 154–169. https://doi.org/10.1177/1468795X14567825

Kiralp, F. S. S., & Bolkan, A. (2016). Relationship Between Candidate Teacher's Attitude Towards Teaching Profession and Their Life Satisfaction Levels. *The Anthropologist*, *23*(1–2), 11–20. https://doi.org/10.1080/09720073.2016.11891919

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741–756. https://doi.org/10.1037/a0019237

Klassen, R. M., Usher, E. L., & Bong, M. (2010). Teachers' Collective Efficacy, Job Satisfaction, and Job Stress in Cross-Cultural Context. *The Journal of Experimental Education*, *78*(4), 464–486. https://doi.org/10.1080/00220970903292975

Klecker, B. M., & Loadman, W. E. (1997). *Exploring Teacher Job Satisfaction, across Years of Teaching Experience*.

Klein, H. K., & Myers, M. D. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, *23*(1), 67. https://doi.org/10.2307/249410

Kock, N. (2017). Common Method Bias: A Full Collinearity Assessment Method for PLS-SEM. In *Partial Least Squares Path Modeling* (pp. 245–257). Springer International Publishing. https://doi.org/10.1007/978-3-319-64069-3_11

Kothawade, D. P. L. (2011). Correlative Study of Teaching Effectiveness & Job Satisfaction of Higher Secondary School Teachers. *Indian Journal of Applied Research*, *4*(7), 116–118. https://doi.org/10.15373/2249555X/July2014/35

Kouali, G. (2017). The instructional practice of school principals and its effect on teachers' job satisfaction. *International Journal of Educational Management*, *31*(7), 958–972. https://doi.org/10.1108/IJEM-11-2016-0253

Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, *30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Kyriacou, C., & Sutcliffe, J. (1979). Teacher Stress and Satisfaction. *Educational Research*, *21*(2), 89–96. https://doi.org/10.1080/0013188790210202

Lai, E., & Cheung, D. (2015). Enacting teacher leadership. *Educational Management Administration & Leadership*, *43*(5), 673–692. https://doi.org/10.1177/1741143214535742

Landa, J. B., & Donaldson, M. L. (2022). Teacher Leadership Roles and Teacher Collaboration: Evidence From Green Hills Public Schools Pay-for-Performance System. *Leadership and Policy in Schools*, *21*(2), 303–328. https://doi.org/10.1080/15700763.2020.1759648

Lauer, R. (2019). Is Social Ontology Prior to Social Scientific Methodology? *Philosophy of the Social Sciences*, *49*(3), 171–189. https://doi.org/10.1177/0048393119840328

Law, S. (1999). Leadership for learning. *Journal of Educational Administration*, *37*(1), 66–80. https://doi.org/10.1108/09578239910253944

Leithwood, K. (1994). Leadership for School Restructuring. *Educational Administration Quarterly*, *30*(4), 498–518. https://doi.org/10.1177/0013161X94030004006

Leithwood, K., & Jantzi, D. (2005). A Review of Transformational School Leadership Research 1996–2005. *Leadership and Policy in Schools*, *4*(3), 177–199. https://doi.org/10.1080/15700760500244769

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *Review of research: How leadership influences student learning*. The Wallace Foundation.

Leithwood, K., Sun, J., & Schumacker, R. (2020). How School Leadership Influences Student

Learning: A Test of "The Four Paths Model." *Educational Administration Quarterly*, *56*(4), 570–599. https://doi.org/10.1177/0013161X19878772

Lenin, V. I. (1908). *Materialism and Empirio-criticism* (Collected).

Leung, S. S., Wah Mak, Y., Yu Chui, Y., Chiang, V. C., & Lee, A. C. (2009). Occupational stress, mental health status and stress management behaviors among secondary school teachers in Hong Kong. *Health Education Journal*, *68*(4), 328–343. https://doi.org/10.1177/0017896909349255

Lewis, P. V. (1985). Defining 'business ethics': Like nailing jello to a wall. *Journal of Business Ethics*, *4*(5), 377–383. https://doi.org/10.1007/BF02388590

Lincoln, Y. ., & Denzin, N. K. (1994). The fifth moment. In N. K. Denzin & Y. . Lincoln (Eds.), *Handbook of qualitative research* (pp. 575–586).

Lindlof, T. R., & Taylor, B. C. (2017). *Qualitative Communication Research Methods* (4th ed.). SAGE Publications Ltd.

Little, D. (2021). Social Ontology De-dramatized. *Philosophy of the Social Sciences*, *51*(1), 13–23. https://doi.org/10.1177/0048393120916145

Littlejohn, S., & Foss, K. (2009). *Encyclopedia of Communication Theory*. SAGE Publications, Inc. https://doi.org/10.4135/9781412959384

Liu, S.-H. (2020). Effects of an online sharing and feedback programme on preservice teachers' practical knowledge, learning preferences and satisfaction. *Technology, Pedagogy and Education*, *29*(4), 463–475. https://doi.org/10.1080/1475939X.2020.1788980

Liu, T.-H., Ke, J.-C., Hsu, Y.-L., & Hsu, Y.-L. (2011). Bootstrapping Computation of Availability for a Repairable System with Standby Subject to Imperfect Switching. *Communications in Statistics - Simulation and Computation*, *40*(4), 469–483. https://doi.org/10.1080/03610918.2010.546539

Liu, Y., Bellibaş, M. Ş., & Gümüş, S. (2021). The Effect of Instructional Leadership and Distributed Leadership on Teacher Self-efficacy and Job Satisfaction: Mediating Roles of Supportive School Culture and Teacher Collaboration. *Educational Management Administration & Leadership*, *49*(3), 430–453. https://doi.org/10.1177/1741143220910438

Lopes, J., & Oliveira, C. (2020). Teacher and school determinants of teacher job satisfaction: a multilevel analysis. *School Effectiveness and School Improvement*, *31*(4), 641–659. https://doi.org/10.1080/09243453.2020.1764593

Lord, R. G. (1977). Functional Leadership Behavior: Measurement and Relation to Social Power and Leadership Perceptions. *Administrative Science Quarterly*, *22*(1), 114. https://doi.org/10.2307/2391749

Lowe, G., Prout, P., Gray, C., & Jefferson, S. (2020). Reappraising the AITSL Professional Engagement Domain: Clarifying Social Capacity Building for School Leaders to Enhance Overall Teacher Job Satisfaction and Career Longevity. *Australian Journal of Teacher Education*, *45*(9), 62–78. https://doi.org/10.14221/ajte.2020v45n9.4

Ma, X., & MacMillan, R. B. (1999). Influences of Workplace Conditions on Teachers' Job Satisfaction. *The Journal of Educational Research*, *93*(1), 39–47. https://doi.org/10.1080/00220679909597627

Mahmood, A., Nudrat, S., & Asdaque, M. M. (2011). Job Satisfaction of Secondary School Teachers: A Comparative Analysis of Gender, Urban and Rural Schools. *Asian Social Science*, *7*(8). https://doi.org/10.5539/ass.v7n8p203

Marak, G. E. (1964). The Evolution of Leadership Structure. *Sociometry*, *27*(2), 174. https://doi.org/10.2307/2785714

Mardia, K. V. (1970). Measures of multivariate skewness and kurtosis with applications. *Biometrika*, *57*(3), 519–530. https://doi.org/10.1093/biomet/57.3.519

Martin, J., McKeown, P., Nixon, J., & Ranson, S. (2000). Community-active management and governance of schools in England and Wales 1. In M. A. Arnott & C. D. Raab (Eds.), *The Governance of Schooling: Comparative Studies of Devolved Management* (p. 119). Routledge.

Maynard, T. (2001). The Student Teacher and the School Community of Practice: A consideration of "learning as participation." *Cambridge Journal of Education*, *31*(1), 39–52. https://doi.org/10.1080/03057640123915

McCharen, B., Song, J., & Martens, J. (2011). School Innovation. *Educational Management Administration & Leadership*, *39*(6), 676–694. https://doi.org/10.1177/1741143211416387

McClelland, R. J., Kok, S., & Hoang, D. (2023). Guest editorial: Contemporary approaches of learning organization in the Asia Pacific region. *The Learning Organization*, *30*(5), 509–510. https://doi.org/10.1108/TLO-07-2023-293

Mehta, S. R. (2012). Job Satisfaction Among Teachers. *International Journal of Research in Commerce, IT and Management*, *11*(54).

Menon, M. E., & Athanasoula-Reppa, A. (2011). Job satisfaction among secondary school teachers: the role of gender and experience. *School Leadership & Management*, *31*(5), 435–450. https://doi.org/10.1080/13632434.2011.614942

Miller Hosley, S., Lau, A. T. W., Levy, F. K., & Tan, D. S. K. (1994). The Quest for the Competitive Learning Organization. *Management Decision*, *32*(6), 5–15. https://doi.org/10.1108/00251749410086724

Mohana Sasi Kumar, & P. Balasubramani. (2019). A Study on the Job Satisfaction of Primary School Teachers in Purasaiwakkam Area, Chennai. *International Journal of Engineering and Management Research*, *9*(4), 161–165. https://doi.org/10.31033/ijemr.9.4.23

Moher, D., Altman, D. G., Liberati, A., & Tetzlaff, J. (2011). PRISMA Statement. *Epidemiology*, *22*(1), 128. https://doi.org/10.1097/EDE.0b013e3181fe7825

Morgan, D. L. (2007). Paradigms Lost and Pragmatism Regained. *Journal of Mixed Methods Research*, *1*(1), 48–76. https://doi.org/10.1177/2345678906292462

Mumford, E. (1906). The origins of leadership. *American Journal of Sociology*, *12*(2), 216–240.

Mumford, M. D., Bedell-Avers, K. E., Hunter, S. T., Espejo, J., Eubanks, D., & Connelly, M. S. (2008). Violence in Ideological and Non-Ideological Groups: A Quantitative Analysis of Qualitative Data. *Journal of Applied Social Psychology*, *38*(6), 1521–1561. https://doi.org/10.1111/j.1559-1816.2008.00358.x

Murphy, A. J. (1941). A Study of the Leadership Process. *American Sociological Review*, *6*(5), 674. https://doi.org/10.2307/2085506

Myers, M. D. (2008). *Qualitative Research in Business & Management*. SAGE Publications Ltd.

Nerlino, E. (2020). A theoretical grounding of teacher leadership. *Journal of Professional Capital and Community*, *5*(2), 117–128. https://doi.org/10.1108/JPCC-12-2019-0034

Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling. *Industrial Management & Data Systems*, *116*(9), 1849–1864. https://doi.org/10.1108/IMDS-07-2015-0302

Nonaka, I. (1990). *Management of Knowledge Creation*. Nihon Keizai Shinbun-sha.

Nonaka, I., & Konno, N. (1998). The Concept of "Ba": Building a Foundation for Knowledge Creation. *California Management Review*, *40*(3), 40–54. https://doi.org/10.2307/41165942

Noor, K. B. M. (2008). Case Study: A Strategic Research Methodology. *American Journal of Applied Sciences*, *5*(11), 1602–1604. https://doi.org/10.3844/ajassp.2008.1602.1604

Noruzi, M. R., & Vargas-Hernández, J. G. (2010). How Intellectual Capital and Learning Organization Can Foster Organizational Competitiveness? *International Journal of Business and Management*, *5*(4), 183. https://doi.org/10.5539/ijbm.v5n4p183

OECD. (2016). *What makes a school a learning organisation?* OECD.

Ontas, T. (2016). Employment and first year experience of beginner primary school teachers at private educational institutions. *Journal of Higher Education and Science*, *6*(2), 195. https://doi.org/10.5961/jhes.2016.156

Onwuegbuzie, A. J. (2002). Why can't we all get along? Towards a framework for unifying research paradigms. *Education*, *122*(3), 518.

Ormston, R., Spencer, L., Barnard, M., & Snape, D. (2014). The foundations of qualitative research. In *Qualitative research practice: A guide for social science students and researchers* (2nd ed., pp. 52–55). SAGE Publications Ltd.

Örtenblad, A. (2002). A Typology of the Idea of Learning Organization. *Management Learning*, *33*(2), 213–230. https://doi.org/10.1177/1350507602332004

Örtenblad, A. (2004). The learning organization: towards an integrated model. *The Learning Organization*, *11*(2), 129–144. https://doi.org/10.1108/09696470410521592

Pan, H.-L. W., & Chen, W.-Y. (2020). How principal leadership facilitates teacher learning through teacher leadership: Determining the critical path. *Educational Management Administration & Leadership*, 174114322091355. https://doi.org/10.1177/1741143220913553

Parasuraman, A., Zeithaml, V., & Berry, L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of Retailing*, *64*(1).

Parker, D. W., Holesgrove, M., & Pathak, R. (2015). Improving productivity with self-organised teams and agile leadership. *International Journal of Productivity and Performance Management*, *64*(1), 112–128. https://doi.org/10.1108/IJPPM-10-2013-0178

Parry, K., Mumford, M. D., Bower, I., & Watts, L. L. (2014). Qualitative and historiometric methods in leadership research: A review of the first 25years of The Leadership Quarterly. *The Leadership Quarterly*, *25*(1), 132–151. https://doi.org/10.1016/j.leaqua.2013.11.006

Parry, K. W. (1998). Grounded theory and social process: A new direction for leadership research. *The Leadership Quarterly*, *9*(1), 85–105. https://doi.org/10.1016/S1048-9843(98)90043-1

Pashiardis, P., Brauckmann, S., & Kafa, A. (2018). Let the context become your ally: school principalship in two cases from low performing schools in Cyprus. *School Leadership & Management*, *38*(5), 478–495. https://doi.org/10.1080/13632434.2018.1433652

Pauley, J. A., & Pauley, J. F. (2009). *Communication: The Key To Effective Leadership*. ASQ Quality Press.

Pedditzi, M. L., Nonnis, M., & Nicotra, E. F. (2021). Teacher Satisfaction in Relationships With Students and Parents and Burnout. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.703130

Pedler, M., & Burgoyne, J. G. (2017). Is the learning organisation still alive? *The Learning Organization*, *24*(2), 119–126. https://doi.org/10.1108/TLO-12-2016-0087

Pham, P.-T., Thi Phan, T.-T., Nguyen, Y.-C., & Hoang, A.-D. (2021). Factor Associated With Teacher Satisfaction and Online Teaching Effectiveness Under Adversity Situations: A Case of Vietnamese Teachers During COVID-19. *Journal of Education*, 002205742110394. https://doi.org/10.1177/00220574211039483

Pham, T. T. H., & Renshaw, P. (2013). How To Enable Asian Teachers To Empower Students To Adopt Student-Centred Learning. *Australian Journal of Teacher Education*, *38*(11). https://doi.org/10.14221/ajte.2013v38n11.4

Phan, T.-T. T., Ta, N.-T., Duong, V.-A. P., & Hoang, A.-D. (2020). Dataset of Vietnamese teachers' habits and motivation behind continuous professional development programs participation. *Data in Brief*, *33*, 106525. https://doi.org/10.1016/j.dib.2020.106525

Pittaway, L., Holt, R., & Broad, J. (2014). Synthesising knowledge in entrepreneurship research - the role of systematic literature reviews. In *Handbook of Research on Small Business and Entrepreneurship* (pp. 83–105). Edward Elgar Publishing. https://doi.org/10.4337/9781849809245.00014

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, *52*(2), 126–136. https://doi.org/10.1037/0022-0167.52.2.126

Potterton, A. U. (2020). Parental Accountability, School Choice, and the Invisible Hand of the Market. *Educational Policy*, *34*(1), 166–192. https://doi.org/10.1177/0895904819881155

Printy, S., & Liu, Y. (2021). Distributed Leadership Globally: The Interactive Nature of Principal and Teacher Leadership in 32 Countries. *Educational Administration Quarterly*,

57(2), 290–325. https://doi.org/10.1177/0013161X20926548

Proctor, J. D. (1998). The Social Construction of Nature: Relativist Accusations, Pragmatist and Critical Realist Responses. *Annals of the Association of American Geographers*, *88*(3), 352–376. https://doi.org/10.1111/0004-5608.00105

Quine, W. V. O., & Ullian, J. S. (1978). *The web of belief*. Random House.

Raelin, J. A. (2020). Toward a methodology for studying leadership-as-practice. *Leadership*, *16*(4), 480–508. https://doi.org/10.1177/1742715019882831

Ramesh, M., & Asher, M. G. (2000). *Welfare Capitalism in Southeast Asia*. Palgrave Macmillan UK. https://doi.org/10.1057/9780230512818

Ramseook-Munhurrun, P., & Nundlall, P. (2013). Service quality measurement for secondary school setting. *Quality Assurance in Education*, *21*(4), 387–401. https://doi.org/10.1108/QAE-05-2011-0025

Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S., & Waseem, A. (2019). Case Study Method: A Step-by-Step Guide for Business Researchers. *International Journal of Qualitative Methods*, *18*, 160940691986242. https://doi.org/10.1177/1609406919862424

Razinkina, E., Pankova, L., Trostinskaya, I., Pozdeeva, E., Evseeva, L., & Tanova, A. (2018). Student satisfaction as an element of education quality monitoring in innovative higher education institution. *E3S Web of Conferences*, *33*, 03043. https://doi.org/10.1051/e3sconf/20183303043

Renzulli, L. A., Parrott, H. M., & Beattie, I. R. (2011). Racial Mismatch and School Type. *Sociology of Education*, *84*(1), 23–48. https://doi.org/10.1177/0038040710392720

Rescher, N. (2003). *Nature and Understanding*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199261826.001.0001

Ribbins, P., & Gronn, P. (2000). Researching Principals: Context and Culture in the Study of Leadership in Schools. *Asia Pacific Journal of Education*, *20*(2), 34–45. https://doi.org/10.1080/02188791.2000.10600181

Rigdon, E. E. (2012). Rethinking Partial Least Squares Path Modeling: In Praise of Simple Methods. *Long Range Planning*, *45*(5–6), 341–358. https://doi.org/10.1016/j.lrp.2012.09.010

Rigdon, E. E. (2014). Rethinking Partial Least Squares Path Modeling: Breaking Chains and Forging Ahead. *Long Range Planning*, *47*(3), 161–167.

https://doi.org/10.1016/j.lrp.2014.02.003

Riveros, A., Newton, P., & Costa, J. da. (2013). From Teachers to Teacher-Leaders: A Case Study. *International Journal of Teacher Leadership*, *4*(1), 15.

Robson, C., & McCartan, K. (2016). *Real World Research* (4th ed.). Wiley.

Sadeghi, K., Amani, J., & Mahmudi, H. (2013). A Structural Model of the Impact of Organizational Culture on Job Satisfaction Among Secondary School Teachers. *The Asia-Pacific Education Researcher*, *22*(4), 687–700. https://doi.org/10.1007/s40299-013-0074-0

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600–619. https://doi.org/10.1108/02683940610690169

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Treating Unobserved Heterogeneity in PLS-SEM: A Multi-method Approach. In *Partial Least Squares Path Modeling* (pp. 197–217). Springer International Publishing. https://doi.org/10.1007/978-3-319-64069-3_9

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students* (6th ed.). Pearson Education Limited.

Savas, A. C. (2013). The Effects of Science Teachers' Perception of Learning Organization on Job Satisfaction. *The Anthropologist*, *16*(1–2), 395–404. https://doi.org/10.1080/09720073.2013.11891365

Schleicher, A. (2015). *Schools for 21st-Century Learners: Strong Leaders, Confident Teachers, Innovative Approaches. International Summit on the Teaching Profession*. OECD Publishing.

Scoblic, J. P. (2020). Learning from the future. *Harvard Business Review*, *98*(4), 38–47.

Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms. *English Language Teaching*, *5*(9). https://doi.org/10.5539/elt.v5n9p9

Seashore Karen, & Toole, H. (1999). Rethinking school improvement. In *Handbook of research on educational administration*.

Sebastian, J., Allensworth, E., & Huang, H. (2016). The Role of Teacher Leadership in How Principals Influence Classroom Instruction and Student Learning. *American Journal of Education*, *123*(1), 69–108. https://doi.org/10.1086/688169

Sepkoski, D. (2007). Ontology Recapitulates Epistemology: Gassendi, Epicurean Atomism, and

Nominalism. In *Nominalism and Constructivism in Seventeenth-Century Mathematical Philosophy* (1st ed., p. 21). Routledge.

Sergiovanni, T. J. (1984). Leadership and excellence in schooling. *Educational Leadership*, *41*(5), 6–13.

Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and Analysis of Moderator Variables. *Journal of Marketing Research*, *18*(3), 291. https://doi.org/10.2307/3150970

Shava, G. N. (2018). Distributed leadership in education, contemporary issues in educational leadership. *African Educational Research Journal*, *6*(4), 279–287. https://doi.org/10.30918/AERJ.64.18.097

Shen, J., Leslie, J. M., Spybrook, J. K., & Ma, X. (2012). Are Principal Background and School Processes Related to Teacher Job Satisfaction? A Multilevel Study Using Schools and Staffing Survey 2003-04. *American Educational Research Journal*, *49*(2), 200–230. https://doi.org/10.3102/0002831211419949

Shields, C. M. (2018). *Transformative leadership in education: Equitable and socially just change in an uncertain and complex world*. Routledge.

Shmueli, G. (2010). To Explain or to Predict? *Statistical Science*, *25*(3). https://doi.org/10.1214/10-STS330

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Shmueli, & Koppius. (2011). Predictive Analytics in Information Systems Research. *MIS Quarterly*, *35*(3), 553. https://doi.org/10.2307/23042796

Shrestha, M. (2019). Influences of gender and locale on teachers' job satisfaction. *Research in Educational Policy and Management*, *1*(1), 17–32. https://doi.org/10.46303/repam.01.01.2

Shrivastava, P. (1983). A TYPOLOGY OF ORGANIZATIONAL LEARNING SYSTEMS. *Journal of Management Studies*, *20*(1), 7–28. https://doi.org/10.1111/j.1467-6486.1983.tb00195.x

Siddiqui, K. A., Chachar, Z. A., Zafar, Z., Dool, M. A., & Kumar, A. (2021). Perceptions of Teachers About Teacher Leadership: A Systematic Literature Review. *MIER Journal of Educational Studies Trends and Practices*, 236–251.

https://doi.org/10.52634/mier/2021/v11/i2/1766

Silins, H. C., Mulford, W. R., & Zarins, S. (2002a). Organizational Learning and School Change. *Educational Administration Quarterly*, *38*(5), 613–642. https://doi.org/10.1177/0013161X02239641

Silins, H. C., Mulford, W. R., & Zarins, S. (2002b). Organizational Learning and School Change. *Educational Administration Quarterly*, *38*(5), 613–642. https://doi.org/10.1177/0013161X02239641

Silins, H., & Mulford, B. (2002). Schools as learning organisations. *Journal of Educational Administration*, *40*(5), 425–446. https://doi.org/10.1108/09578230210440285

Silins, H., & Mulford, B. (2004). Schools as Learning Organisations - Effects on Teacher Leadership and Student Outcomes. *School Effectiveness and School Improvement*, *15*(3–4), 443–466. https://doi.org/10.1080/09243450512331383272

Silva, D. Y., Gimbert, B., & Nolan, J. (2000). Sliding the Doors: Locking and Unlocking Possibilities for Teacher Leadership. *Teachers College Record*, *102*(4), 779–804. https://doi.org/10.1111/0161-4681.00077

Singh, B., & Kumar, A. (2016). Effect of Emotional Intelligence and Gender on Job Satisfaction of Primary School Teachers. *European Journal of Educational Research*, *5*(1), 1–9. https://doi.org/10.12973/eu-jer.5.1.1

Singh, V. K., Singh, P., Karmakar, M., Leta, J., & Mayr, P. (2021). The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis. *Scientometrics*, *126*(6), 5113–5142. https://doi.org/10.1007/s11192-021-03948-5

Skaalvik, E. M., & Skaalvik, S. (2014). Teacher Self-Efficacy and Perceived Autonomy: Relations with Teacher Engagement, Job Satisfaction, and Emotional Exhaustion. *Psychological Reports*, *114*(1), 68–77. https://doi.org/10.2466/14.02.PR0.114k14w0

Slevitch, L. (2011). Qualitative and Quantitative Methodologies Compared: Ontological and Epistemological Perspectives. *Journal of Quality Assurance in Hospitality & Tourism*, *12*(1), 73–81. https://doi.org/10.1080/1528008X.2011.541810

Smith, W. C., & Holloway, J. (2020). School testing culture and teacher satisfaction. *Educational Assessment, Evaluation and Accountability*, *32*(4), 461–479. https://doi.org/10.1007/s11092-020-09342-8

Smylie, M. A., & Eckert, J. (2018). Beyond superheroes and advocacy: The pathway of teacher

leadership development. *Educational Management Administration and Leadership*, *46*(4), 556–577. https://doi.org/10.1177/1741143217694893

Snell, R. S. (2002). The Learning Organization, Sensegiving and Psychological Contracts: A Hong Kong Case. *Organization Studies*, *23*(4), 549–569. https://doi.org/10.1177/0170840602234003

Snell, R. S., & Hong, J. (2012). Organizational Learning in Asia. In M. Easterby-Smith & Marjorie A Lyles (Eds.), *Handbook of Organizational Learning and Knowledge Management* (pp. 635–658). John Wiley & Sons, Inc. 10.1002/9781119207245

Sotolongo, J. A., Van Uden, P. J., & Capra, F. (2007). Reframing complexity: Perspectives from the North and the South. In *Reframing complexity* (pp. vii–xix).

Sprague, J., & Zimmerman, M. K. (1993). Overcoming dualisms: A feminist agenda for sociological methodology. In P. England (Ed.), *Theory on Gender: Feminism on Theory*. Aldine De Gruyter.

Stebbins, R. (2001). *Exploratory Research in the Social Sciences*. SAGE Publications, Inc. https://doi.org/10.4135/9781412984249

Stewart, F. (1996). Globalisation and education. *International Journal of Educational Development*, *16*(4), 327–333. https://doi.org/10.1016/S0738-0593(97)87232-X

Stewart, T., & Ruckdeschel, C. (1998). Intellectual capital: The new wealth of organizations. *Performance Improvement*, *37*(7), 56–59. https://doi.org/10.1002/pfi.4140370713

Stogdill, R. M. (1950). Leadership, membership and organization. *Psychological Bulletin*, *47*(1), 1–14. https://doi.org/10.1037/h0053857

Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal*, *34*(6), 618–632. https://doi.org/10.1016/j.emj.2016.06.003

Suriansyah, A., & Aslamiah. (2018). Teacher's Job Satisfaction On Elementary School: Relation To Learning Environment. *The Open Psychology Journal*, *11*(1), 123–130. https://doi.org/10.2174/1874350101811010123

Szeto, E. (2020). Influence of professional cultures and principal leadership effects on early-career teacher leadership development in Hong Kong schools. *Professional Development in Education*, 1–19. https://doi.org/10.1080/19415257.2020.1770837

Szeto, E., & Cheng, A. Y.-N. (2018). Principal–teacher interactions and teacher leadership

development: beginning teachers' perspectives. *International Journal of Leadership in Education*, *21*(3), 363–379. https://doi.org/10.1080/13603124.2016.1274785

Talebizadeh, S. M., Hosseingholizadeh, R., & Bellibaş, M. Ş. (2021). Analyzing the relationship between principals' learning-centered leadership and teacher professional learning: The mediation role of trust and knowledge sharing behavior. *Studies in Educational Evaluation*, *68*, 100970. https://doi.org/10.1016/j.stueduc.2020.100970

Tannenbaum, R., & Massarik, F. (1957). Leadership: A Frame of Reference. *Management Science*, *4*(1), 1–19. https://doi.org/10.1287/mnsc.4.1.1

Terman, L. M. (1904). A Preliminary Study in the Psychology and Pedagogy of Leadership. *The Pedagogical Seminary*, *11*(4), 413–483. https://doi.org/10.1080/08919402.1904.10534107

The Government of Vietnam. (2018). *Nghị định số 86/2018/NĐ-CP: Quy định về hợp tác, đầu tư của nước ngoài trong lĩnh vực giáo dục [Decree Number 86/2018/ND-CP: Regulations on foreign collaboration and investment in education]*.

Thompson, I. M., Lucia, M. S., & Tangen, C. M. (2007). Commentary: The ubiquity of prostate cancer: echoes of the past, implications for the present: "What has been will be again, what has been done will be done again,; there is nothing new under the sun." ECCLESIASTES 1:9. *International Journal of Epidemiology*, *36*(2), 287–289. https://doi.org/10.1093/ije/dym056

Thornton, K., Walton, J., Wilson, M., & Jones, L. (2018). Middle leadership roles in universities: Holy Grail or poisoned chalice. *Journal of Higher Education Policy and Management*, *40*(3), 208–223. https://doi.org/10.1080/1360080X.2018.1462435

Toole, J. C., & Louis, K. S. (2002). The Role of Professional Learning Communities In International Education. In *Second International Handbook of Educational Leadership and Administration* (pp. 245–279). Springer Netherlands. https://doi.org/10.1007/978-94-010-0375-9_10

Tran, V. D. (2015). Effects of Gender on Teachers' Perceptions of School Environment, Teaching Efficacy, Stress and Job Satisfaction. *International Journal of Higher Education*, *4*(4). https://doi.org/10.5430/ijhe.v4n4p147

Travis, M. D. (2019). *Hope for Struggling School Districts*. University of Southern Mississippi.

Truong, T. D., Hallinger, P., & Sanga, K. (2017). Confucian values and school leadership in Vietnam. *Educational Management Administration & Leadership*, *45*(1), 77–100.

https://doi.org/10.1177/1741143215607877

Tsai, J. C.-A., & Kang, T.-C. (2019). Reciprocal intention in knowledge seeking: Examining social exchange theory in an online professional community. *International Journal of Information Management*, *48*, 161–174. https://doi.org/10.1016/j.ijinfomgt.2019.02.008

Tsai, K. C. (2017). Development of the Teacher Leadership Style Scale. *Social Behavior and Personality: An International Journal*, *45*(3), 477–490. https://doi.org/10.2224/sbp.5751

Tsai, M.-T., & Li, Y.-H. (2007). Knowledge creation process in new venture strategy and performance. *Journal of Business Research*, *60*(4), 371–381. https://doi.org/10.1016/j.jbusres.2006.10.003

Tushman, M. L., & O'Reilly, C. A. (2002). *Winning through innovation: A practical guide to leading organizational change and renewal*. Harvard Business Review Press.

Ulrich, D., Jick, T., & Glinow, M. A. Von. (1993). High-impact learning: Building and diffusing learning capability. *Organizational Dynamics*, *22*(2), 52–66. https://doi.org/10.1016/0090-2616(93)90053-4

van Dierendonck, D., & Nuijten, I. (2011). The Servant Leadership Survey: Development and Validation of a Multidimensional Measure. *Journal of Business and Psychology*, *26*(3), 249–267. https://doi.org/10.1007/s10869-010-9194-1

van Eck, N. J., & Waltman, L. (2007). *VOS: A New Method for Visualizing Similarities Between Objects* (pp. 299–306). https://doi.org/10.1007/978-3-540-70981-7_34

Van Houtte, M., & Van Maele, D. (2011). The black box revelation: in search of conceptual clarity regarding climate and culture in school effectiveness research. *Oxford Review of Education*, *37*(4), 505–524. https://doi.org/10.1080/03054985.2011.595552

Vogel, S., & Schwabe, L. (2016). Learning and memory under stress: implications for the classroom. *Npj Science of Learning*, *1*(1), 16011. https://doi.org/10.1038/npjscilearn.2016.11

Vroom, V. H., & Yetton, P. W. (1973). *Leadership and Decision-Making*. University of Pittsburgh Press. https://doi.org/10.2307/j.ctt6wrc8r

Vuong, Q.-H. (2020). Reform retractions to make them more transparent. *Nature*, *582*(7811), 149–149. https://doi.org/10.1038/d41586-020-01694-x

Wagner, C. R. (2006). The school leader's tool for assessing and improving school culture. *Principal Leadership*, *7*(4), 41–44.

Wallace, M. (2002). Modelling Distributed Leadership and Management Effectiveness: Primary School Senior Management Teams in England and Wales. *School Effectiveness and School Improvement, 13*(2), 163–186. https://doi.org/10.1076/sesi.13.2.163.3433

Wallace, R. (2020). Servant leadership: A worldview perspective. *International Journal of Leadership Studies, 2*(2), 114–132.

Wang, H., Hall, N. C., & Rahimi, S. (2015). Self-efficacy and causal attributions in teachers: Effects on burnout, job satisfaction, illness, and quitting intentions. *Teaching and Teacher Education, 47*, 120–130. https://doi.org/10.1016/j.tate.2014.12.005

Wang, Z., Zhao, L., Song, H., Du, J., & Wang, Y. (2022). Linking empowering leadership with older teachers' knowledge-sharing behaviour: the roles of organization-based self-esteem and organizational status. *Asia Pacific Journal of Education*, 1–18. https://doi.org/10.1080/02188791.2022.2151412

Watson, C. (2013). The ironies of leadership: insights from a narrative analysis of the TV Western drama series, Rawhide. *Organization, 20*(6), 924–935. https://doi.org/10.1177/1350508412464896

Webber, K. L., & Rogers, S. M. (2018). Gender Differences in Faculty Member Job Satisfaction: Equity Forestalled? *Research in Higher Education, 59*(8), 1105–1132. https://doi.org/10.1007/s11162-018-9494-2

Weil, J. L. (1988). Management Experientially Taught. *Journal of Management Education, 12*(3), 54–61. https://doi.org/10.1177/105256298801200307

Weiner, J. M., & Lamb, A. J. (2020). Exploring the possibilities and limits to transfer and learning: Examining a teacher leadership initiative using the theory of action framework. *Journal of Educational Change, 21*(2), 267–297. https://doi.org/10.1007/s10833-020-09378-z

Weiner, J., & Woulfin, S. L. (2018). Sailing Across the Divide: Challenges to the Transfer of Teacher Leadership. *Journal of Research on Leadership Education, 13*(3), 210–234. https://doi.org/10.1177/1942775118766319

Wellek, R. (1955). *A History of Modern Criticism: 1750–1950: Volume I, The Later Eighteenth Century*. Yale University Press.

Westburgh, E. M. (1931). A point of view--studies in leadership. *The Journal of Abnormal and Social Psychology, 25*(4), 418–423. https://doi.org/10.1037/h0071032

Wilkins, R. (2002). Schools as organisations: some contemporary issues. *International Journal of Educational Management*, *16*(3), 120–125. https://doi.org/10.1108/09513540210422228

Wöbmann, L., Lüdemann, E., Schütz, G., & West, M. R. (2007). *School Accountability, Autonomy, Choice, and the Level of Student Achievement*. OECD Education Working Papers. https://doi.org/https://doi.org/10.1787/246402531617

World Bank. (2019). *Government expenditure on education, total (% of GDP)*.

Wu, C., Li, N., & Fang, D. (2017). Leadership improvement and its impact on workplace safety in construction projects: A conceptual model and action research. *International Journal of Project Management*, *35*(8), 1495–1511. https://doi.org/10.1016/j.ijproman.2017.08.013

Xie, C., Song, P., & Hu, H. (2020). Measuring Teacher Leadership in Different Domains of Practice: Development and Validation of the Teacher Leadership Scale. *The Asia-Pacific Education Researcher*, 1–11. https://doi.org/10.1007/s40299-020-00527-9

Yamaguchi, E. (2006). Rethinking innovation. In *Recovering from Success* (pp. 166–183). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199297320.003.0009

Yamane, T. (1967). *Statistics: An Introductory Analysis* (2nd ed.). Harper and Row.

Yilmaz, K. (2013). Comparison of Quantitative and Qualitative Research Traditions: epistemological, theoretical, and methodological differences. *European Journal of Education*, *48*(2), 311–325. https://doi.org/10.1111/ejed.12014

York-Barr, J., & Duke, K. (2004). What Do We Know About Teacher Leadership? Findings From Two Decades of Scholarship. *Review of Educational Research*, *74*(3), 255–316. https://doi.org/10.3102/00346543074003255

You, S., Kim, A. Y., & Lim, S. A. (2017). Job satisfaction among secondary teachers in Korea. *Educational Management Administration & Leadership*, *45*(2), 284–297. https://doi.org/10.1177/1741143215587311

Yuet, K. C., Yusof, F., Mohamad, H. S., & Ismail, S. (2016). Development and Validation of the Teacher Leadership Competency Scale. *Malaysian Journal of Learning and Instruction, Vol. 13, No. 2 Dec 2016*, 43–69. https://doi.org/10.32890/mjli2016.13.2.2

Zakariya, Y. F., Bjørkestøl, K., & Nilsen, H. K. (2020). Teacher job satisfaction across 38 countries and economies: An alignment optimization approach to a cross-cultural mean comparison. *International Journal of Educational Research*, *101*, 101573. https://doi.org/10.1016/j.ijer.2020.101573

Zedan, R. (2010). New dimensions in the classroom climate. *Learning Environments Research, 13*(1), 75–88. https://doi.org/10.1007/s10984-009-9068-5

Zeinabadi, H., & Abbasian, H. (2022). Principal's leadership and teacher-to-teacher knowledge-sharing in Iranian schools: Developing and validating a multi-dimensional scale. *Educational Management Administration & Leadership,* 174114322210959. https://doi.org/10.1177/17411432221095947

Zeng, N., Liu, Y., Gong, P., Hertogh, M., & König, M. (2021). Do right PLS and do PLS right: A critical review of the application of PLS-SEM in construction management research. *Frontiers of Engineering Management*, *8*(3), 356–369. https://doi.org/10.1007/s42524-021-0153-5

Zhang, S., Long, R., & Bowers, A. J. (2022). Supporting teacher knowledge sharing in China: The effect of principal authentic leadership, teacher psychological empowerment and interactional justice. *Educational Management Administration & Leadership,* 174114322211203. https://doi.org/10.1177/17411432221120330

Zhang, W., Bowers, A. J., & Pang, S. (2023). Promoting teacher knowledge sharing in China: The fostering roles of authentic leadership, reciprocity norms, and organizational trust. *Educational Management Administration & Leadership*. https://doi.org/10.1177/17411432231199573

Zhang, X., Zhao, C., Xu, Y., Liu, S., & Wu, Z. (2021). Kernel Causality Among Teacher Self-Efficacy, Job Satisfaction, School Climate, and Workplace Well-Being and Stress in TALIS. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.694961

Zhu, Y., Liu, D., & Xu, Y. (2023). The difference of primary school teachers' online teaching satisfaction in subject and educational level. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1027591

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business Research Methods*. Cengage Learning.

Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, *18*(3), 429–472. https://doi.org/10.1177/1094428114562629

Appendix A – Survey Questionnaires

English Survey

Research Project
"Educational Leadership, Organisational Knowledge Circulation and Teachers' Job Satisfaction in Vietnamese K-12 Schools"
<For K-12 teacher only>

PART I: DEMOGRAPHICS

No	Question	Answer type
1	Your Gender	<Male/ Female/ Non-binary or Third Gender/ Prefer not to disclosure>
2	How many years of experience do you have in total?	<less than 3; 3~5; 5~10; more than 10>
3	How many years of experience do you have at the current school?	<less than 3; 3~5; 5~10; more than 10>
4	What is your highest level of education?	<BA/ Master/ Doctoral>
5	What grade level are you teaching?	<Primary/Lower-Secondary/Upper-Secondary>
6	What type of school are you teaching?	<Public/Private>

PART II: YOUR PERSPECTIVES ABOUT PRINCIPALSHIP

Regarding your own perspective, your principal does…

(1 = Totally disagree; 4 = Totally agree)

P1	Build a shared vision	1	2	3	4
P2	Identify specific, shared, short-term goals	1	2	3	4
P3	Create high-performance expectations	1	2	3	4
P4	Communicate the vision and goals	1	2	3	4
P5	Stimulate growth in the professional capacities of staff	1	2	3	4
P6	Provide support and demonstrate consideration for individual staff members	1	2	3	4
P7	Model the school's values and practices	1	2	3	4
P8	Build trusting relationships with and among staff, students, and parents	1	2	3	4
P9	Establish productive working relationships with teacher federation representatives	1	2	3	4
P10	Build collaborative culture and distribute leadership	1	2	3	4
P11	Structure the organization to facilitate collaboration	1	2	3	4

P12	Build productive relationships with families and communities	1	2	3	4
P13	Connect the school to its wider environment	1	2	3	4
P14	Maintain a safe and healthy school environment	1	2	3	4
P15	Allocate resources in support of the school's vision and goals	1	2	3	4
P16	Staff the instructional program	1	2	3	4
P17	Provide instructional support	1	2	3	4
P18	Monitor student learning and school improvement progress	1	2	3	4
P19	Buffer staff from distractions to their instructional work	1	2	3	4

PART III: YOUR SELF-EVALUATION ABOUT TEACHER LEADERSHIP

Regarding yourself, do you agree with those statements?

(1 = Totally disagree; 4 = Totally agree)

T1	I enjoy sharing my passion and thinking about teaching and learning	1	2	3	4
T2	To enhance student learning, I actively share my suggestions for school development	1	2	3	4
T3	I actively discuss with colleagues the importance of cultivating students' competency of self-directed learning	1	2	3	4
T4	I involve colleagues to analyze student learning with data and form the vision of student learning	1	2	3	4
T5	I provoke discussions regarding the learning vision for subjects and learning areas in meetings	1	2	3	4
T6	I **PASSIVELY** care about and help colleagues solve problems about teaching	1	2	3	4
T7	I actively share my knowledge or experience in activities or meetings	1	2	3	4
T8	I actively invite colleagues to organize learning communities and initiate professional dialogue	1	2	3	4
T9	I am engaged in continual learning and facilitate colleagues' professional development	1	2	3	4
T10	I am a **PASSIVE** learner, and my actions can motivate other teachers to learning	1	2	3	4
T11	I actively participate in meetings or discussions about departmental affairs or school curriculum development	1	2	3	4
T12	I actively invite colleagues to develop learning activities beyond textbooks	1	2	3	4

T13	I actively discuss with colleagues how to help students be involved in team learning and facilitate students to manifest their influence in learning	1	2	3	4
T14	I actively discuss with colleagues how to help students express and justify their ideas	1	2	3	4
T15	I actively discuss with colleagues how to facilitate students thinking and inquiry	1	2	3	4
T16	I lead colleagues to recognize their peers' efforts and performance	1	2	3	4
T17	I actively provide support when colleagues have problems with student issues	1	2	3	4
T18	I actively offer support to colleagues who would like to try something new	1	2	3	4
T19	To enhance student learning, I actively communicate and coordinate with administrators and other teachers	1	2	3	4
T20	I actively seek out resources to enhance student learning	1	2	3	4

PART IV: YOUR PERSPECTIVES ABOUT SCHOOL CULTURE

Do you think that at your school…

(1 = Totally disagree; 6 = Totally agree)

C1	Teachers and staff discuss instructional strategies and curriculum issues	1	2	3	4	5	6
C2	Teachers and staff **DON'T** work together to develop the school schedule	1	2	3	4	5	6
C3	Teachers and staff are involved in the decision-making process with regard to materials and resources	1	2	3	4	5	6
C4	The student behaviour code is a result of collaboration and consensus among staff	1	2	3	4	5	6
C5	The planning and organisational time allotted to teachers and staff is used to plan as collective units/teams rather than as separate individuals	1	2	3	4	5	6
C6	Teachers and staff tell stories of celebrations that support the school's values	1	2	3	4	5	6
C7	Teachers and staff visit/talk/meet outside of the school to enjoy each other's company	1	2	3	4	5	6
C8	Our school reflects a true "sense" of community	1	2	3	4	5	6
C9	Our school schedule reflects frequent communication opportunities for teachers and staff	1	2	3	4	5	6

C10	Our school supports and appreciates the sharing of new ideas by members of our school	1	2	3	4	5	6
C11	There is a rich and robust tradition of rituals and celebrations including holidays, special events and recognition of goal attainment	1	2	3	4	5	6
C12	When something is not working in our school, the faculty and staff predict and prevent rather than react and repair	1	2	3	4	5	6
C13	School members are interdependent and value each other	1	2	3	4	5	6
C14	Members of our school community seek alternatives to problems/issues rather than repeating what we have always done	1	2	3	4	5	6
C15	Members of our school community seek to define the problem/issue rather than blame others	1	2	3	4	5	6
C16	The school staff is empowered to make instructional decisions rather than waiting for supervisors to tell them what to do	1	2	3	4	5	6
C17	People work here because they enjoy and choose to be here	1	2	3	4	5	6

PART V: YOUR PERSPECTIVES ABOUT SCHOOL KNOWLEDGE CIRCULATION

At your school, there are…

(1 = Totally disagree; 6 = Totally agree)

K1	Cooperative projects across directorates	1	2	3	4	5	6
K2	The use of apprentices and mentors to transfer knowledge	1	2	3	4	5	6
K3	Brainstorming retreats or camps	1	2	3	4	5	6
K4	Teachers' rotation across areas	1	2	3	4	5	6
K5	A problem-solving system based on technological approaches like case-based reasoning	1	2	3	4	5	6
K6	Groupware and other collaboration learning tools	1	2	3	4	5	6
K7	Pointers to expertise	1	2	3	4	5	6
K8	Modeling based on analogies and metaphors	1	2	3	4	5	6
K9	Capture and transfer of experts' knowledge	1	2	3	4	5	6
K10	Systems that store data and information effectively	1	2	3	4	5	6

K11	Protocols that analyse information towards decision-making	1	2	3	4	5	6
K12	Repositories of information, best practices, and lessons learned	1	2	3	4	5	6
K13	Develop local action plans to transform schools	1	2	3	4	5	6
K14	On-the-job training	1	2	3	4	5	6
K15	Learning by doing	1	2	3	4	5	6
K16	Learning by observation	1	2	3	4	5	6

PART VI: YOUR SELF-EVALUATION ABOUT JOB SATISFACTION

Do you agree with those statements?

(1 = Totally disagree; 10 = Totally agree)

S1	In most ways, being a teacher is close to my ideal									
	1	2	3	4	5	6	7	8	9	10
S2	My conditions of being a teacher are excellent									
	1	2	3	4	5	6	7	8	9	10
S3	I am satisfied with being a teacher									
	1	2	3	4	5	6	7	8	9	10
S4	So far, I have gotten the important things I want to be a teacher									
	1	2	3	4	5	6	7	8	9	10
S5	If I could choose my career over, I would change almost nothing									
	1	2	3	4	5	6	7	8	9	10

Thank you for your time and participation!

As stated in the cover page of this survey, all information will be anonymously collected and will be used for research purposes only.

Vietnamese Survey

Dự án nghiên cứu
"Lãnh đạo giáo dục, Luân chuyển tri thức trong tổ chức, và Độ hài lòng về nghề nghiệp của giáo viên tại các trường phổ thông Việt Nam"

<Dành riêng cho giáo viên>

PHẦN I: THÔNG TIN CHUNG

TT	Câu hỏi	Hình thức trả lời
1	Giới tính của bạn	<Nam/ Nữ/ Dị tính hoặc giới tính thứ ba/ Không muốn tiết lộ>
2	Bạn có tổng cộng bao nhiêu năm kinh nghiệm?	<ít hơn 3; 3~5; 5~10; hơn 10>
3	Bạn có bao nhiêu năm kinh nghiệm tại trường học hiện tại?	<ít hơn 3; 3~5; 5~10; hơn 10>
4	Học vấn cao nhất của bạn	<Cử nhân/ Thạc sĩ/ Tiến sĩ>
5	Bạn đang giảng dạy bậc học nào?	<Tiểu học/Trung học Cơ sở/Trung học Phổ thông
6	Trường bạn đang dạy thuộc nhóm nào?	<Công lập/Tư thục>

PHẦN II: QUAN ĐIỂM CỦA BẠN VỀ NĂNG LỰC LÃNH ĐẠO NHÀ TRƯỜNG

Theo bạn, hiệu trưởng nhà trường có….

(1 = Hoàn toàn Không đồng ý; 4 = Hoàn toàn đồng ý)

P1	Xây dựng một tầm nhìn chung	1	2	3	4
P2	Xác định cụ thể các mục tiêu chung ngắn hạn	1	2	3	4
P3	Thiết lập những kì vọng về hiệu suất công việc cao	1	2	3	4
P4	Truyền tải tốt các thông điệp về tầm nhìn và mục tiêu	1	2	3	4
P5	Thúc đẩy sự phát triển năng lực chuyên môn của cán bộ giáo viên	1	2	3	4
P6	Hỗ trợ và quan tâm tới từng cán bộ giáo viên	1	2	3	4
P7	Là hiện hữu cho các giá trị và hành vi của nhà trường	1	2	3	4
P8	Xây dựng mối quan hệ tin tưởng giữa cán bộ giáo viên, học sinh và phụ huynh	1	2	3	4
P9	Thiết lập mối quan hệ hiệu quả với công đoàn giáo viên	1	2	3	4
P10	Xây dựng văn hoá hợp tác và trao quyền	1	2	3	4
P11	Xây dựng tổ chức hướng tới việc hỗ trợ các sự hợp tác	1	2	3	4
P12	Xây dựng mối quan hệ tốt đối với gia đình học sinh và cộng đồng	1	2	3	4
P13	Kết nối nhà trường với môi trường rộng lớn hơn	1	2	3	4
P14	Đảm bảo môi trường an toàn và khoẻ mạnh	1	2	3	4

P15	Phân bổ các nguồn lực nhằm hỗ trợ tầm nhìn và mục tiêu của nhà trường	1	2	3	4
P16	Dẫn dắt các đổi mới trong chương trình giảng dạy	1	2	3	4
P17	Cung cấp những hỗ trợ cho việc giảng dạy hiệu quả	1	2	3	4
P18	Theo dõi quá trình học tập của học sinh và quá trình tiến bộ của nhà trường	1	2	3	4
P19	Hỗ trợ để giáo viên không bị phân tâm khỏi công việc giảng dạy	1	2	3	4

PHẦN III: ĐÁNH GIÁ VỀ NĂNG LỰC DẪN DẮT CỦA BẢN THÂN

Đối với chỉnh bản thân mình, bạn có đồng ý với những mệnh đề dưới đây?

(1 = Hoàn toàn Không đồng ý; 4 = Hoàn toàn đồng ý)

T1	Tôi thích thú việc chia sẻ đam mê và suy nghĩ của bản thân về việc dạy và học	1	2	3	4
T2	Nhằm củng cố hoạt động học tập của học sinh, tôi chủ động đề xuất các kiến nghị để phát triển nhà trường	1	2	3	4
T3	Tôi chủ động thảo luận với đồng nghiệp về tầm quan trọng của việc trau dồi năng lực tự học của học sinh	1	2	3	4
T4	Tôi mời gọi đồng nghiệp tham gia phân tích các dữ liệu để hình thành cái nhìn tổng thể về việc học của học sinh	1	2	3	4
T5	Tôi khuyến khích các thảo luận liên quan đến tầm nhìn, mục tiêu học tập của các môn học	1	2	3	4
T6	Tôi **KHÔNG** chủ động quan tâm và giúp đỡ đồng nghiệp giải quyết các vấn đề chuyên môn	1	2	3	4
T7	Tôi chủ động chia sẻ kiến thức và kinh nghiệm trong các cuộc họp	1	2	3	4
T8	Tôi chủ động mời đồng nghiệp tham gia các nhóm học tập và khởi xướng các đối thoại chuyên môn	1	2	3	4
T9	Tôi gắn bó với tiến trình học tập liên tục và tạo điều kiện cho đồng nghiệp phát triển chuyên môn	1	2	3	4
T10	Tôi là một người **KHÔNG** chủ động học hỏi, và các hành động của tôi có thể động viên, khuyến khích các giáo viên khác cùng học	1	2	3	4
T11	Tôi tích cực tham gia các cuộc họp, thảo luận về công việc của tổ chuyên môn, cũng như việc xây dựng chương trình giảng dạy của nhà trường	1	2	3	4
T12	Tôi chủ động mời gọi đồng nghiệp phát triển các hoạt động học tập nằm ngoài phạm vi sách giáo khoa	1	2	3	4
T13	Tôi chủ động thảo luận với đồng nghiệp những cách để giúp học sinh tham gia vào các hoạt động nhóm và tạo điều kiện cho học sinh thể hiện sự ảnh hưởng của mình trong việc học	1	2	3	4

T14	Tôi tích cực trao đổi với đồng nghiệp về cách giúp học sinh đưa ra và bảo vệ ý kiến của các em	1	2	3	4
T15	Tôi tích cực trao đổi với đồng nghiệp về cách tạo điều kiện cho học sinh tư duy và tìm tòi	1	2	3	4
T16	Tôi dẫn dắt để các đồng nghiệp công nhận những nỗ lực và hiệu suất của những đồng nghiệp khác	1	2	3	4
T17	Tôi tích cực hỗ trợ khi đồng nghiệp gặp khó khăn với các vấn đề của học sinh	1	2	3	4
T18	Tôi tích cực hỗ trợ những đồng nghiệp muốn thử điều gì đó mới mẻ	1	2	3	4
T19	Để nâng cao hiệu quả học tập của học sinh, tôi tích cực giao tiếp và phối hợp với ban giám hiệu và các giáo viên khác.	1	2	3	4
T20	Tôi tích cực tìm kiếm các nguồn tài nguyên để nâng cao khả năng học tập của học sinh	1	2	3	4

PHẦN IV: QUAN ĐIỂM CỦA BẠN VỀ VĂN HOÁ NHÀ TRƯỜNG

Bạn có nghĩ rằng, tại trường học của mình…

(1 = Hoàn toàn Không đồng ý; 6 = Hoàn toàn đồng ý)

C1	Giáo viên và cán bộ nhà trường cùng thảo luận các chiến lược giảng dạy và các vấn đề về chương trình học	1	2	3	4	5	6
C2	Giáo viên và cán bộ nhà trường **KHÔNG** cùng cộng tác để xây dựng các lịch trình hoạt động	1	2	3	4	5	6
C3	Giáo viên và cán bộ nhà trường cùng tham gia vào các quá trình ra quyết định liên quan tới tài nguyên và nguồn lực	1	2	3	4	5	6
C4	Các quy tắc hành xử của học sinh là kết quả đồng thuận giữa cán bộ giáo viên	1	2	3	4	5	6
C5	Việc xây dựng thời gian cho các công tác kế hoạch, tổ chức, được phân bổ cho cán bộ giáo viên dưới hình thức hoạt động tập thể của đội, nhóm, thay vì hoạt động riêng lẻ của từng cá nhân	1	2	3	4	5	6
C6	Cán bộ giáo viên chia sẻ những câu chuyện hứng khởi, cổ xuý các giá trị của nhà trường	1	2	3	4	5	6
C7	Cán bộ giáo viên gặp gỡ, thăm hỏi, trò chuyện bên ngoài không gian nhà trường để hiểu hau hơn	1	2	3	4	5	6
C8	Nhà trường thực sự phản ánh một "tinh thần cộng đồng"	1	2	3	4	5	6
C9	Các hoạt động của nhà trường thể hiện rõ những cơ hội trao đổi thường xuyên giữa cán bộ giáo viên	1	2	3	4	5	6
C10	Nhà trường ủng hộ và đánh giá cao việc cán bộ giáo viên chia sẻ những ý tưởng mới	1	2	3	4	5	6

C11	Nhà trường có truyền thống phong phú và đậm đà bản sắc với các nghi thức và lễ kỉ niệm, bao gồm các kì nghỉ, các sự kiện đặc biệt, và sự ghi nhận các thành quả	1	2	3	4	5	6
C12	Khi có vấn đề xảy ra, cán bộ giáo viên thường tiên liệu và phòng tránh, thay vì phản ứng và khắc phục	1	2	3	4	5	6
C13	Cán bộ giáo viên trong trường có sự liên thuộc lẫn nhau, và tôn trọng giá trị của từng người	1	2	3	4	5	6
C14	Cán bộ giáo viên nhà trường thường tìm kiếm những cách thức khác nhau để giải quyết vấn đề, thay vì lặp đi lặp lại những giải pháp thường làm	1	2	3	4	5	6
C15	Cán bộ giáo viên nhà trường thường tìm cách xác định vấn đề thay vì chỉ trích lẫn nhau	1	2	3	4	5	6
C16	Cán bộ giáo viên nhà trường được trao quyền trong các quyết định sư phạm thay vì đợi cấp trên hướng dẫn cách làm	1	2	3	4	5	6
C17	Cán bộ giáo viên nhà trường làm việc tại đây vì họ vui vẻ và lựa chọn ở lại nơi này	1	2	3	4	5	6

PHẦN V: QUAN ĐIỂM CỦA BẠN VỀ VIỆC LUÂN CHUYỂN TRI THỨC TRONG TỔ CHỨC

Tại trường học của bạn, có thể nhận thấy…

(1 = Hoàn toàn Không đồng ý; 6 = Hoàn toàn đồng ý)

K1	Có các dự án hợp tác giữa các phòng ban, đơn vị	1	2	3	4	5	6
K2	Có các hoạt động kèm cặp để truyền thụ kiến thức cho người non kinh nghiệm	1	2	3	4	5	6
K3	Có những hội nghị/trại ý tưởng	1	2	3	4	5	6
K4	Có sự luân chuyển nhân sự giữa các nhóm/khối	1	2	3	4	5	6
K5	Có hệ thống giải quyến vấn đề dựa trên phương pháp như suy luận dựa trên các tình huống/giả định	1	2	3	4	5	6
K6	Có các công cụ hỗ trợ cán bộ giáo viên cộng tác và học tập theo nhóm	1	2	3	4	5	6
K7	Có các gợi ý, hướng dẫn về chuyên môn	1	2	3	4	5	6
K8	Có thói quen xây dựng các giả định dựa trên các loại suy và ẩn dụ	1	2	3	4	5	6
K9	Có sự nắm bắt và chuyển giao kiến thức của những người có kinh nghiệm	1	2	3	4	5	6
K10	Có các hệ thống lưu trữ dữ liệu và thông tin hiệu quả	1	2	3	4	5	6
K11	Có các cơ chế để phân tích dữ liệu cho quá trình ra quyết định	1	2	3	4	5	6
K12	Có cơ chế để lưu trữ các kinh nghiệm và bài học được rút ra từ thực tiễn	1	2	3	4	5	6
K13	Có sự phát triển các kế hoạch tại các tổ, nhóm để cải tổ trường học	1	2	3	4	5	6
K14	Có cơ hội để học qua việc thực tập	1	2	3	4	5	6

K15	Có cơ hội để học qua việc thực hành	1	2	3	4	5	6
K16	Có cơ hội để học qua việc quan sát	1	2	3	4	5	6

PHẦN VI: ĐÁNH GIÁ CỦA BẢN THÂN BẠN VỀ MỨC ĐỘ HÀI LÒNG VỚI CÔNG VIỆC HIỆN TẠI

Bạn có đồng ý với những nhận định dưới đây?

(1 = Hoàn toàn Không đồng ý; 10 = Hoàn toàn đồng ý)

S1	Nhìn chung, trở thành giáo viên là việc gần nhất với lý tưởng của tôi									
	1	2	3	4	5	6	7	8	9	10
S2	Điều kiện để tôi làm một giáo viên như hiện tại là rất tốt									
	1	2	3	4	5	6	7	8	9	10
S3	Tôi hài lòng với việc là một giáo viên									
	1	2	3	4	5	6	7	8	9	10
S4	Cho đến nay, tôi đã nhận được những điều mà tôi cho là quan trọng khi muốn trở thành giáo viên									
	1	2	3	4	5	6	7	8	9	10
S5	Nếu có thể thay đổi nghề nghiệp, tôi cũng không đổi sang nghề nào khác									
	1	2	3	4	5	6	7	8	9	10

Trân trọng cảm ơn quý thầy cô
đã đóng góp quỹ thời gian quý báu để hoàn thành khảo sát này!

Appendix B – Supplementary Documents

Letter to School Leaders (English)

Invitation to participate in the research project

Educational Leadership, Organisational Knowledge Circulation, School Culture, and Teachers' Job Satisfaction in Vietnamese K-12 Schools

Dear School leaders,

My name is Duc Hoang, a PhD candidate in Management at RMIT University Vietnam. Currently, I am implementing the research project **"Educational Leadership, Organisational Knowledge Circulation, School Culture, and Teachers' Job Satisfaction in Vietnamese K-12 Schools"** which aims to determine how we should measure school leadership under the globalization context, as well as how school leaders should focus on improving school innovation and culture. This research involves 675~900 teachers from K-12 schools from Hanoi and Ho Chi Minh City.

I would like to invite teachers from your school to participate in this research, which includes one online survey. This research has been granted ethics approval from RMIT University (No. BLCHEAN 24956).

For your convenience, there are some highlights about the research procedures.

- You can support this research project by forwarding the invitation to all your teaching staff.
- Teachers can decide to participate on a voluntary basis.
- At the beginning of the survey, the is one page with project information and consent form.

- There is no identifiable information about the teacher or your school that teachers must provide. All information is anonymously collected.
- Teachers reserve the right to discontinue the survey at any time, due to any reason, just by closing the survey URL on their browser.
- School leaders are required not to be present during the time the teacher completes the survey.
- All questions can be completed within 15~20 minutes.
- All data will be anonymously stored and used for research purposes only.

Please take your time to check out the survey, as well as the PICF (Participant Information Consent Form) its first page <URL>. If you are willing to support this project, please help us forward the survey <URL> to all of your teaching staff.

Again, thank you so much for your time and support. Wish you and your school a happy learning and development journey.

With enterprising regard,

Anh-Duc Hoang (MSc., PMP)

PhD. Candidate, RMIT University, Vietnam

Letter to School Leaders (Vietnamese)

Thư mời tham gia dự án nghiên cứu

"Lãnh đạo giáo dục, Luân chuyển tri thức tổ chức, Văn hoá nhà trường, và độ hài lòng về nghề nhiệp của giáo viên tại các trường phổ thông Việt Nam"

Thân gửi Quý thầy, cô Ban Giám hiệu nhà trường,

Tôi là Hoàng Anh Đức, Nghiên cứu sinh Tiến sĩ về Quản lý Giáo dục tại Đại học RMIT Việt Nam. Hiện tại, tôi đang triển khai dự án nghiên cứu "Lãnh đạo giáo dục, Luân chuyển tri thức tổ chức, Văn hoá nhà trường, và độ hài lòng về nghề nhiệp của giáo viên tại các trường phổ thông Việt Nam", hướng tới việc xây dựng phương thức đo lường năng lực lãnh đạo nhà trường trong bối cảnh toàn cầu hoá, cũng như xác định những trọng tâm mà các nhà lãnh đạo giáo dục cần chú ý để tăng cường tính đổi mới, cũng như văn hoá học đường. Nghiên cứu này tiếp cận khoảng 675~900 giáo viên phổ thông tại Hà Nội và thành phố Hồ Chí Minh.

Tôi xin gửi lời mời quý thầy cô đang giáo viên đang giảng dạy tại quý trường tham gia dự án nghiên cứu này, qua một bản khảo sát online. Nghiên cứu này đã được phê duyệt bởi Hội đồng Đạo đức và Học thuật của Đại học RMIT (Số BLCHEAN 24956).

Để thuận tiện cho quý thầy, cô, các lưu ý quan trọng về quy trình nghiên cứu được liệt kê dưới đây:

- Quý thầy, cô có thể hỗ trợ nghiên cứu này bằng việc chuyển tiếp lời mời tới tất cả giáo viên nhà trường.
- Giáo viên có thể quyết định việc tham gia của mình một cách tình nguyện.
- Tại đầu bảng khảo sát, có một trang cung cấp đầy đủ thông tin về dự án cũng như các cam kết bảo mật.
- Nghiên cứu này không thu thập bất kì thông tin định danh nào về giáo viên hay nhà trường. Tất cả thông tin đều được thu thập ẩn danh.

- Giáo viên có quyền ngừng tham gia nghiên cứu này bất kể lúc nào, bất kể ký do gì, bằng cách tắt link khảo sát khỏi trình duyệt web.
- Ban Giám hiệu nhà trường vui lòng không hiện diện trong quá trình giáo viên tiến hành khảo sát.
- Toàn bộ khảo sát có thể được hoàn thiện trong khoảng 15~20 phút.
- Toàn bộ dữ liệu sẽ được lưu trữ ẩn danh và chỉ phục vụ mục đích nghiên cứu

Xin quý thầy, cô vui lòng kiểm tra nội dung của bảng hỏi, cũng như bản cam kết bảo mật thông tin (PICF) tại đường dẫn này <URL>. Nếu quý thầy, cô có thể hỗ trợ dự án nghiên cứu, xin vui lòng chuyển tiếp đường dẫn này <URL> tới toàn bộ giáo viên nhà trường.

Một lần nữa, xin cảm ơn quý thầy, cô đã dành thời gian hỗ trợ. Xin kính chúc quý thầy cô và nhà trường một năm mới tốt lành, và những hành trình giáo dục đầy ý nghĩa.

Trân trọng,
ThS. Hoàng Anh Đức,

Nghiên cứu sinh, Đại học RMIT, Việt Nam

Participant Information Statement and Consent Form (English)

Research Project: Educational Leadership, Organisational Knowledge Circulation, School Culture, and Teachers' Job Satisfaction in Vietnamese K-12 Schools

Title	Educational Leadership, Organisational Knowledge Circulation, School Culture, and Teachers' Job Satisfaction in Vietnamese K-12 Schools
Chief Investigator	Seng Kiat Kok
Co-Investigators	Anh-Duc Hoang Greeni Maheshwari

This PICF supersedes any previous information provided to the participants prior to formal recruitment.

What does my participation involve?

1. Introduction

The research aims to determine how we should measure school leadership under the globalization context, as well as how school leaders should focus to improve school innovation and culture. This research will involve approximately 675~900 teachers from public, private, and international K-12 schools in Hanoi and Ho Chi Minh city.

This Participant Information Sheet tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether to take part, you might want to talk about it with a relative or friend.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you may continue to the survey after reading this Participant Information Sheet. By completing the survey you are telling us that you:

- Understand what you have read
- Consent to take part in the research project

2. What is the purpose of the research?

This research aims to examine Vietnamese K-12 teachers' perspectives about educational leadership, organisational knowledge creation processes, school culture, and job satisfaction.

3. What does participation in this research involve?

You will be provided a survey with 6 demographic questions and 5 groups of questions about: (i) Principalship, (ii) Teacher leadership, (iii) School culture, (iv) School knowledge creation, and (v) Job satisfaction. The demographics questions are unidentifiable, and you are not allowed to provide any identifiable information. The other 77 research questions can be answered using different scales (four levels, six levels, or ten levels). The whole process will consume 15~20 minutes to complete.

There are no costs associated with participating in this research project, nor will you be paid.

4. Other relevant information about the research project

Your school leaders granted the researcher the right to deliver this research to you. You can decide to take part in this research on a voluntary basis. School leaders will not know whether or not you have participated in this survey. Please take note that School leaders are required not to be present during the time the teacher completes the survey.

5. Do I have to take part in this research project?

Participation in this study is strictly voluntary and your responses are confidential. Your school leaders are required not to present while you are taking the survey. If you experience discomfort, you may withdraw at any time, regardless of any reason. Your return of this survey will also imply your consent to participate in the study.

Survey results and survey responses are anonymous and will not be reported to school leaders. The responses you provide are private and confidential and will only be utilized by the approved research team. Please note that anonymity is upheld from the very outset.

6. What are the possible benefits of taking part?

You will have a chance to self-reflect on your current work, your collaboration with peers, and your school's recent and future movements.

7. What are the risks and disadvantages of taking part?

The risks associated with this study are minimal. First, there is no identifiable information about you or your school. The project uses Qualtrics to create, collect and analyse data collected in a survey format. If you agree to participate in this survey, the responses you provide will be stored on their host server. No personal information will be collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data to the RMIT server where it will be stored securely for five years. The data on the host server will then be deleted and expunged.

8. What if I withdraw from this research project?

You preserve the right to withdraw at any time and regardless of the reason, just by closing this URL on your browser. However, as the survey is anonymously collected, the withdrawal of data will not be possible after your submission of the survey.

9. What happens when the research project ends?

You will not receive a copy of your own answer after submitting the survey.

If you want to receive a copy of the final publication in the future, please contact the researchers through email. The document will be in form of a pre-publishing version of a journal article or a conference paper without any identifiable information.

All respondent's data are kept for a period of five years after the completion of the project, before being discarded.

10. What will happen to information about me?

The most important ethical consideration is to protect participants' data from any other party. Therefore, the researcher does not collect identifiable information. All collected raw data will also be secured and will not be provided to any other third party unless under laws provided. Therefore, only the researcher and supervisors can access the project from RMIT guaranteed accounts. Participants will not be able to access the data and the information about other participants and the results reported publicly will be de-identified. The data will be used for research purposes only.

11. Who is organising and funding the research?

The research has no funding.

12. Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). This research project has been approved by the RMIT University HREC.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

13. Further information and who to contact

If you want any further information concerning this project, you can contact the researcher on +xx xxx xxx xxx or any of the following people:

Name	Seng Kiat Kok	Anh-Duc Hoang	Greeni Maheshwari
Position	Chief investigator	Co-Investigator	Co-Investigator
Email	....@rmit.edu.vn	....@rmit.edu.vn	....@rmit.edu.vn

14. Complaints

Should you have any concerns or questions about this research project, which you do not wish to discuss with the researchers listed in this document, then you may contact:

Reviewing HREC name	RMIT University
HREC Secretary	Vivienne Moyle
Telephone	……..
Email	human.ethics@rmit.edu.au
Mailing address	Manager, Research Governance and Ethics RMIT University ……..

15. Acknowledgement by Participant

I have read and understood the Participant Information Sheet.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my relationship with RMIT.

After reading all above information about the research project, please tick the below box if you willing to participate in this research. Otherwise, please discard this survey by closing the URL (regarding online survey), or return the blank survey, covered by the PICF form (regarding the paper survey).

☐ I have read all information about the research project and consent my participant to this research.

Participant Information Statement and Consent Form (Vietnamese)

Phiếu cam kết tham gia nghiên cứu

Dự án nghiên cứu: Lãnh đạo giáo dục, Luân chuyển tri thức tổ chức, Văn hoá nhà trường, và độ hài lòng về nghề nghiệp của giáo viên tại các trường phổ thông Việt Nam

Tiêu đề	Lãnh đạo giáo dục, Luân chuyển tri thức tổ chức, Văn hoá nhà trường, và độ hài lòng về nghề nghiệp của giáo viên tại các trường phổ thông Việt Nam
Nghiên cứu viên chính	Seng Kiat Kok
Cộng sự	Anh-Duc Hoang Greeni Maheshwari

Bản cam kết tham gia nghiên cứu này thay thế mọi thông tin đã được cung cấp không chính thức trước đó.

Tôi sẽ tham gia vào những việc cụ thể gì?

1. Tổng quan

Nghiên cứu này hướng tới việc xây dựng cách thức đo lường năng lực lãnh đạo nhà trường trong bối cảnh toàn cầu hoá, đồng thời tìm kiếm những cách thức mà các nhà lãnh đạo giáo dục nên tập trung để tăng cường tính đổi mới và văn hoá nhà trường. Nghiên cứu này tiếp cận khoảng 675~900 giáo viên phổ thông tại Hà Nội và thành phố Hồ Chí Minh.

Phiếu cam kết tham gia nghiên cứu này cung cấp cho quý thầy/cô các thông tin về dự án nghiên cứu. Phiếu này giải thích các quy trình nghiên cứu mà thầy/cô sẽ tham gia. Việc biết rõ về các quy trình này sẽ giúp thầy/cô quyết định xem có tham gia vào nghiên cứu hay không.

Xin vui lòng đọc kỹ các thông tin này. Nếu thầy/cô không rõ hoặc muốn biết thêm bất cứ thông tin nào về nghiên cứu, xin vui lòng liên hệ với nhóm nghiên cứu. Trước khi quyết định tham gia, thầy/cô cũng có thể tham khảo ý kiến của người thân hoặc bạn bè.

Việc tham gia vào nghiên cứu này là hoàn toàn tự nguyện.

Nếu thầy/cô quyết định tham gia vào nghiên cứu, xin vui lòng tiếp tục trả lời bảng khảo sát sau khi đọc kỹ phiếu thông tin này. Bằng việc hoàn thành khảo sát này, quý thầy/cô xác nhận với nhóm nghiên cứu rằng:

- Thầy/cô đã hiểu những nội dung này
- Thầy/cô đồng ý tham gia vào dự án nghiên cứu này

2. Mục đích của nghiên cứu này là gì?

Dự án này nhằm nghiên cứu các nhận định của giáo viên phổ thông về năng lực lãnh đạo nhà trường, quy trình khởi tạo tri thức mới trong nhà trường, văn hoá nhà trường, và sự hài lòng với công việc.

3. Tham gia vào nghiên cứu này đòi hỏi tôi phải làm những gì?

Thầy/cô sẽ được cung cấp một khảo sát bao gồm 6 câu hỏi nhân khẩu học và 5 nhóm câu hỏi về các nội dung: (i) Năng lực lãnh đạo của hiệu trưởng, (ii) Năng lực lãnh đạo của giáo viên, (iii) Văn hoá nhà trường, (iv) Quá trình kiến tạo tri thức mới tại nhà trường, và (v) Sự hài lòng với công việc. Các câu hỏi nhân khẩu học là những câu hỏi không định danh, và thầy/cô không được phép cung cấp bất cứ thông tin nào có thể sử dụng để xác định danh tính của bản thân. 77 câu hỏi nghiên cứu con lại có thể được trả lời bởi các thang đo với các giá trị khác nhau (4, 6, hoặc 10 bậc). Toàn bộ bảng hỏi sẽ tiêu tốn khoảng 15~20 phút để hoàn thiện.

Việc tham gia vào nghiên cứu này không phát sinh chi phí, và thầy/cô cũng không nhận được bất kì một khoản phí nào

4. Những thông tin khác liên quan tới dự án nghiên cứu

Ban Giám hiệu nhà trường đã cho phép nhóm nghiên cứu chuyển tiếp bảng hỏi này tới quý thầy/cô. Thầy/cô có quyền lựa chọn tham gia vào nghiên cứu này một cách tình nguyện. BGH nhà trường sẽ không biết rằng liệu thầy/cô có tham gia hay không. Và xin lưu ý rằng Ban Giám hiệu được yêu cầu không hiện diện trong quá trình thầy/cô hoàn thành khảo sát.

5. Tôi có buộc phải tham gia nghiên cứu này không?

Việc tham gia nghiên cứu này là hoàn toàn tình nguyện và các câu trả lời của thầy/cô được đảm bảo giữ kín. Nếu cảm thấy không thoải mái, thầy/cô có thể rút khỏi nghiên cứu này bất kì thời điểm nào, bất kể lí do. Việc thầy/cô gửi trả lại bảng hỏi cũng đồng thời xác nhận sự đồng tình tham gia vào dự án nghiên cứu.

Các kết quả khảo sát, cũng như dữ liệu khảo sát được thu thập ẩn danh và sẽ không được gửi tới lãnh đạo nhà trường. Câu trả lời của thầy/cô hoàn toàn bảo mật và chỉ được sử dụng với thẩm quyền của nhóm nghiên cứu. Xin lưu ý rằng, tính ẩn danh được đảm bảo ngay từ khi bắt đầu.

6. Đâu là những lợi ích tiềm năng của việc tham dự nghiên cứu này?

Thầy/cô sẽ có cơ hội để tự chiêm nghiệm về công việc của mình, về quá trình cộng tác với đồng nghiệp, về các chuyển biến của nhà trường trong hiện tại và tương lai.

7. Đâu là những rủi ro và bất lợi của việc tham dự?

Các rủi ro khi tham dự nghiên cứu này là tối thiểu. Trước hết, nghiên cứu không thu thập bất kì thông tin định danh nào về thầy/cô hay nhà trường. Dự án sử dụng nền tảng Qualtrics để tạo, thu thập và xử lý dữ liệu khảo sát. Nếu thầy/cô đồng ý tham gia nghiên cứu, các phản hồi sẽ được lưu trữ tại máy chủ của Qualtrics. Không có bất kì thông tin cá nhân nào được thu thập, nên sẽ không có thông tin cá nhân nào được lưu trữ. Sau khi đã thu thập dữ liệu, chúng tôi sẽ xuất dữ liệu về máy chủ của Đại học RMIT và lưu trữ tại đây trong vòng 5 năm. Sau đó, dữ liệu sẽ được tiêu huỷ.

8. Điều gì sẽ diễn ra nếu tôi rút khỏi dự án nghiên cứu này?

Thầy/cô có quyền rút khỏi dự án nghiên cứu bất kì thời điểm nào, bất kể lí do nào. thầy/cô chỉ cần tắt link khảo sát này khỏi trình duyệt web. Tuy nhiên, vì khảo sát này được thu thập ẩn danh, thế nên thầy/cô sẽ không thể thu lại dữ liệu của mình sau khi nhấn nút hoàn thành khảo sát.

9. Điều gì sẽ diễn ra khi dự án nghiên cứu kết thúc?

Thầy/cô sẽ không nhận được một bản sao các câu trả lời của mình sau khi hoàn thành.

Nếu thầy/cô muốn nhận một bản sao của công trình nghiên cứu trong tương lai, xin vui lòng liên hệ nhóm nghiên cứu thông qua email. Thầy/cô sẽ nhận được một bài báo dưới dạng một bản thảo nghiên cứu tiền xuất bản của tạp chí/hội nghị khoa học, không bao gồm bất cứ thông tin định danh nào.

Tất cả dữ liệu được lưu trữ trong thời hạn năm năm sau khi dự án kết thúc, trước khi được xoá bỏ hoàn toàn.

10. Điều gì sẽ diễn ra đối với các thông tin về tôi?

Mối quan tâm đạo đức quan trọng nhất là đảm bảo dữ liệu về các khách thể nghiên cứu đối với bất kì bên thứ ba nào khác. Bởi vậy, nhóm nghiên cứu không thu thập các thông tin định danh cá nhân. Tất cả các dữ liệu thô sẽ được đảm bảo an toàn và không cung cấp cho bất kì bên thứ ba nào khác, trừ khi có các yêu cầu từ toà án. Vì thế, chỉ có nhóm nghiên cứu và người giám sát mới có quyền truy cập dữ liệu nghiên cứu, thông qua các tài khoản được giám sát bởi Đại học RMIT. Từng cá nhân tham gia trả lời sẽ không thể truy cập được dữ liệu về các cá nhân khác; và các kết quả cuối cùng sẽ được công bố ẩn danh. Dữ liệu sẽ chỉ được sử dụng duy nhất cho mục đích nghiên cứu.

11. Ai là người tổ chức và đài thọ cho nghiên cứu này?

Nghiên cứu này không nhận một khoản tài trợ nào.

12. Ai là người đã xét duyệt nghiên cứu này?

Theo quy định quốc gia về nghiên cứu của Australia, tất cả các nghiên cứu có sự tham gia của con người đều được xét duyệt bởi một Hội đồng Đạo đức nghiên cứu Con người độc lập (HREC). Dự án nghiên cứu này đã được phê duyệt bởi Hội đồng HREC của trường Đại học RMIT.

Dự án này được tiến hành tuân thủ theo Tuyên bố Quốc gia về Quy chuẩn đạo đức trong nghiên cứu con người của Australia (năm 2007). Tuyên bố này đã được phát triển để bảo vệ các lợi ích của những người đồng ý tham gia vào các công trình nghiên cứu về con người.

13. Thông tin liên hệ

Trong trường hợp muốn biết thêm các thông tin khác về dự án, thầy/cô có thể liên hệ với nhóm nghiên cứu qua số điện thoại +84 982 574 874 hoặc bất kể một thành viên nào dưới đây:

Họ tên	Seng Kiat Kok	Anh-Duc Hoang	Greeni Maheshwari
Chức danh	Nghiên cứu viên chính	Nghiên cứu viên	Nghiên cứu viên
Email	.....@rmit.edu.vn	.....@rmit.edu.vn	.....@rmit.edu.vn

14. Phàn nàn

Nếu có bất cứ quan ngại hay thắc mắc nào về dự án nghiên cứu mà bạn không muốn thảo luận với những người trong danh sách kể trên, vui lòng liên hệ:

Hội đồng Đạo đức	Trường đại học RMIT
Thư ký Hội đồng	Bà Vivienne Moyle
Điện thoại	……..
Email	human.ethics@rmit.edu.au
Địa chỉ thư tín	Quản lý, Ban quản trị dự án nghiên cứu và Đạo đức Trường đại học RMIT ……..

15. Nhận định từ phía người tham gia nghiên cứu

Tôi đã đọc và đã hiểu Phiếu cam kết tham gia nghiên cứu.

Tôi hiểu mục đích, quy trình và các rủi ro đã được mô tả trong dự án nghiên cứu.

Tôi đã có cơ hội để hỏi về những điều còn vướng mắc, và tôi đã hài lòng với những câu trả lời mình nhận được.

Tôi tham gia dự án nghiên cứu này một cách tự nguyện, và tôi hiểu rằng mình có thể rút lui khỏi dự án nghiên cứu bất kì lúc nào mà không gây ảnh hưởng tới mối quan hệ giữa tôi và RMIT.

Sau khi đã đọc toàn bộ thông tin trên đây về dự án nghiên cứu, xin vui lòng đánh dấu vào ô dưới đây nếu bạn sẵn lòng tham gia dự án nghiên cứu. Nếu không, xin vui lòng bỏ qua khảo sát này bằng cách đóng link khảo sát (đối với bảng hỏi online), hoặc nộp lại bảng hỏi trống, được che bởi trang bìa và phiếu cam kết (đối với khảo sát bản cứng).

☐ Tôi đã đọc toàn bộ thông tin về dự án nghiên cứu và xác nhận tham gia dự án nghiên cứu.

RMIT UNIVERSITY

Notice of Ethics Approval

Deputy Pro Vice-Chancellor
(Research & Innovation)
College of Business & Law

GPO Box 2476
Melbourne VIC 3001
Australia

Tel: +[redacted]
Fax: +

Notice of Approval

Date:	21 December 2021
Project number:	BLCHEAN 24956
Project title:	*Educational Leadership, Organisational Knowledge Creation and Teachers' Job Satisfaction in Vietnamese K-12 Schools*
Risk classification:	Low Risk
Chief Investigator:	Dr Seng Kok (RMIT Vietnam)
Student Investigator:	Duc Hoang
Other Investigators:	Dr Greeni Maheshwari (RMIT Vietnam)
Project Approved:	**From: 21st December 2021 To: 21st December 2024**

Terms of approval:

1. *Responsibilities of the principal investigator*
   It is the responsibility of the principal investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by BLCHEAN. Approval is only valid while the investigator holds a position at RMIT University.
2. *Amendments*
   Approval must be sought from BLCHEAN to amend any aspect of a project including approved documents. To apply for an amendment please submit a request via the Research Ethics Platform (REP). Amendments must not be implemented without first gaining approval from BLCHEAN.
3. *Adverse events*
   You should notify BLCHEAN immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
4. *Participant Information Statement and Consent Form (PISCF)*
   The PISCF must be distributed to all research participants, where relevant, and the consent form is to be retained and stored by the investigator. The PISCF must contain the RMIT University logo and a complaints clause including the above project number.
5. *Annual reports*
   Continued approval of this project is dependent on the submission of an annual report.
6. *Final report*
   A final report must be provided at the conclusion of the project. BLCHEAN must be notified if the project is discontinued before the expected date of completion.
7. *Monitoring*
   Projects may be subject to an audit or any other form of monitoring by BLCHEAN at any time.
8. *Retention and storage of data*
   The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.
9. *Special Conditions of approval*
   Nil

In any future correspondence please quote the project number and project title above.

Regards,

[redacted]

A/Prof. Christopher Cheong
Chairperson, Business & Law College Human Ethics Advisory Network (BLCHEAN)

List of Published Publications

Hoang, A. D. (2023). A bibliometrics analysis of research on teachers' satisfaction from 1956 to 2022. *International journal of educational management*, *37*(1), 164-185.

Appendix C – Supplementary Data and Tables

Table 7. Sample size for the whole project, according to the formular of Yamane (1967)

$$n = \frac{N}{1 + N(e)^2}$$

N = 1,200,000
e = 2.71828
Therefore, n = 399.8667110963012

Table 8. Sample size for each school cluster, according to the formular of* Krejcie & Morgan *(1970)

Within the teacher groups, the total population (N) is 1.2 million. The researcher expects 1 response over 20 contacted people (P=0.05). Chi-square at expected confidence level at 95% is 1.96. and the desired margin of error at 0.05%. Thus, sample volume (n) is 72.99.

$$n = \frac{X^2 * N * P * (1 - P)}{(ME^2 * (N - 1)) + (X^2 * P * (1 - P))}$$

in which:

n = Sample size

X^2 = Chi-square for the specific confidence level at 1 degree of freedom

N = Population Size

P = Population Proportion

ME = Margin of Error (expressed as a proportion)

Table 10. Mean, SD and Normal Distribution Indexes of Each Individual Item

	N	Min	Max	Mean		Std. Deviation	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Gender	559	1	4	1.75	.020	.467	-.498	.103	.961	.206
Exp	559	1	4	2.98	.044	1.034	-.549	.103	-.964	.206
Exphere	559	1	4	2.48	.048	1.126	.091	.103	-1.373	.206
Degree	559	1	3	1.30	.020	.472	1.007	.103	-.584	.206
Gradelevel	559	1	3	1.95	.035	.829	.097	.103	-1.539	.206
Schooltype	559	1	3	1.36	.024	.575	1.367	.103	.872	.206
P1	559	1	4	3.37	.031	.739	-1.359	.103	2.211	.206
P2	559	1	4	3.31	.031	.734	-1.205	.103	1.921	.206
P3	559	1	4	3.29	.032	.749	-1.066	.103	1.242	.206
P4	559	1	4	3.31	.033	.783	-1.148	.103	1.140	.206
P5	559	1	4	3.31	.033	.786	-1.197	.103	1.298	.206
P6	559	1	4	3.26	.035	.817	-1.112	.103	.923	.206
P7	559	1	4	3.23	.034	.806	-.954	.103	.546	.206
P8	559	1	4	3.36	.033	.783	-1.235	.103	1.268	.206
P9	559	1	4	3.31	.033	.776	-1.134	.103	1.145	.206
P10	559	1	4	3.26	.035	.822	-1.030	.103	.572	.206
P11	559	1	4	3.29	.034	.800	-1.121	.103	.971	.206
P12	559	1	4	3.28	.033	.782	-1.105	.103	1.105	.206
P13	559	1	4	3.23	.034	.804	-1.010	.103	.754	.206
P14	559	1	4	3.37	.033	.771	-1.348	.103	1.826	.206
P15	559	1	4	3.30	.033	.781	-1.202	.103	1.413	.206
P16	559	1	4	3.26	.033	.780	-.989	.103	.765	.206
P17	559	1	4	3.27	.034	.800	-1.044	.103	.779	.206
P18	559	1	4	3.25	.032	.768	-1.012	.103	.988	.206
P19	559	1	4	3.24	.035	.824	-1.018	.103	.596	.206
T1	559	2	4	3.42	.025	.593	-.472	.103	-.665	.206
T2	559	1	4	3.28	.024	.576	-.167	.103	-.230	.206
T3	559	1	4	3.31	.025	.591	-.259	.103	-.321	.206
T4	559	1	4	3.20	.028	.668	-.360	.103	-.335	.206
T5	559	1	4	3.32	.027	.649	-.544	.103	-.117	.206
T6	559	1	4	3.66	.022	.531	-1.387	.103	1.817	.206
T7	559	1	4	3.42	.027	.631	-.664	.103	-.321	.206
T8	559	1	4	3.24	.027	.636	-.290	.103	-.461	.206

T9	559	1	4	3.33	.024	.573	-.277	.103	.009	.206
T10	559	1	4	3.62	.026	.618	-1.510	.103	1.537	.206
T11	559	1	4	3.35	.026	.604	-.740	.103	1.564	.206
T12	559	1	4	3.23	.029	.674	-.775	.103	1.178	.206
T13	559	1	4	3.37	.026	.610	-.690	.103	.969	.206
T14	559	1	4	3.33	.025	.587	-.502	.103	.874	.206
T15	559	1	4	3.37	.027	.632	-.885	.103	1.491	.206
T16	559	1	4	3.31	.028	.666	-.816	.103	1.023	.206
T17	559	1	4	3.44	.025	.601	-.749	.103	.639	.206
T18	559	1	4	3.40	.025	.589	-.597	.103	.596	.206
T19	559	1	4	3.38	.025	.596	-.534	.103	.234	.206
T20	559	1	4	3.44	.025	.586	-.644	.103	.360	.206
C1	559	1	6	4.82	.045	1.065	-.693	.103	-.040	.206
C2	559	1	4	3.54	.027	.629	-1.099	.103	.320	.206
C3	559	1	6	4.60	.047	1.113	-.624	.103	.009	.206
C4	559	2	6	4.61	.041	.963	-.351	.103	-.277	.206
C5	559	2	6	4.70	.042	1.000	-.391	.103	-.626	.206
C6	559	2	6	4.86	.043	1.022	-.408	.103	-.803	.206
C7	559	3	6	4.92	.041	.977	-.420	.103	-.926	.206
C8	559	2	6	4.92	.043	1.022	-.641	.103	-.303	.206
C9	559	3	6	4.91	.039	.933	-.287	.103	-1.005	.206
C10	559	2	6	4.97	.041	.980	-.585	.103	-.479	.206
C11	559	2	6	4.95	.040	.948	-.587	.103	-.304	.206
C12	559	2	6	4.59	.048	1.142	-.466	.103	-.499	.206
C13	559	3	6	4.96	.038	.907	-.515	.103	-.570	.206
C14	559	1	6	4.79	.043	1.019	-.578	.103	-.182	.206
C15	559	2	6	4.89	.042	.984	-.753	.103	.222	.206
C16	559	2	6	4.65	.044	1.037	-.490	.103	-.159	.206
C17	559	2	6	4.89	.043	1.012	-.658	.103	-.213	.206
K1	559	3	6	4.86	.045	1.058	-.456	.103	-1.043	.206
K2	559	3	6	4.87	.040	.934	-.392	.103	-.759	.206
K3	559	3	6	4.83	.042	.984	-.349	.103	-.945	.206
K4	559	2	6	4.66	.049	1.164	-.525	.103	-.680	.206
K5	559	2	6	4.64	.042	.987	-.385	.103	-.555	.206
K6	559	2	6	4.72	.042	1.001	-.658	.103	-.007	.206
K7	559	2	6	4.85	.039	.928	-.459	.103	-.323	.206
K8	559	2	6	4.42	.042	1.002	.009	.103	-.999	.206
K9	559	3	6	4.77	.040	.941	-.221	.103	-.900	.206

K10	559	2	6	4.59	.044	1.040	-.204	.103	-.900	.206
K11	559	2	6	4.40	.045	1.058	-.080	.103	-1.068	.206
K12	559	2	6	4.42	.050	1.175	-.215	.103	-.996	.206
K13	559	2	6	4.57	.048	1.138	-.313	.103	-.930	.206
K14	559	3	6	4.67	.045	1.056	-.216	.103	-1.166	.206
K15	559	2	6	4.70	.047	1.103	-.345	.103	-.970	.206
K16	559	2	6	4.84	.040	.954	-.319	.103	-.749	.206
S1	559	1	10	8.00	.063	1.496	-.322	.103	-.216	.206
S2	559	2	10	7.52	.072	1.703	-.670	.103	.957	.206
S3	559	2	10	7.92	.066	1.564	-.531	.103	.012	.206
S4	559	2	10	7.86	.064	1.523	-.450	.103	.087	.206
S5	559	2	10	7.63	.084	1.989	-.939	.103	1.221	.206
Valid N (listwise)	559									

Table 12. Differences in Teachers' Job Satisfactions between Genders – Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
S1	Male	147	8.20	1.488	.123
	Female	408	7.92	1.488	.074
S2	Male	147	7.39	1.738	.143
	Female	408	7.56	1.683	.083
S3	Male	147	7.90	1.418	.117
	Female	408	7.91	1.610	.080
S4	Male	147	7.82	1.446	.119
	Female	408	7.86	1.545	.076
S5	Male	147	7.58	2.007	.166
	Female	408	7.63	1.983	.098

Table 13. Differences in Teachers' Job Satisfactions between Genders – Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S1	Equal variances assumed	.610	.435	1.926	553	.055	.276	.143	-.005	.557
	Equal variances not assumed			1.926	258.175	.055	.276	.143	-.006	.558
S2	Equal variances assumed	.354	.552	-1.078	553	.282	-.176	.163	-.497	.145
	Equal variances not assumed			-1.061	251.022	.289	-.176	.166	-.502	.151
S3	Equal variances assumed	5.248	.022	-.092	553	.927	-.014	.150	-.309	.281
	Equal variances not assumed			-.098	290.655	.922	-.014	.142	-.292	.265
S4	Equal variances assumed	1.580	.209	-.237	553	.812	-.035	.146	-.322	.252
	Equal variances not assumed			-.245	274.144	.807	-.035	.142	-.314	.244
S5	Equal variances assumed	.038	.846	-.296	553	.768	-.057	.191	-.432	.319
	Equal variances not assumed			-.294	255.488	.769	-.057	.192	-.436	.322

Table 14. Differences in Teachers' Job Satisfactions regarding Teachers' Experience – ANOVA Results

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
S1	1	61	7.90	1.513	.194	7.51	8.29	5	10
	2	122	8.16	1.324	.120	7.92	8.39	5	10
	3	145	8.27	1.420	.118	8.04	8.50	5	10
	4	231	7.78	1.593	.105	7.57	7.99	1	10
	Total	559	8.00	1.496	.063	7.88	8.13	1	10
S2	1	61	7.52	1.566	.201	7.12	7.93	4	10
	2	122	7.92	1.519	.138	7.65	8.19	4	10
	3	145	7.63	1.602	.133	7.37	7.90	4	10
	4	231	7.23	1.843	.121	6.99	7.47	1	10
	Total	559	7.52	1.703	.072	7.38	7.66	1	10
S3	1	61	7.79	1.561	.200	7.39	8.19	5	10
	2	122	8.08	1.452	.131	7.82	8.34	5	10
	3	145	8.19	1.366	.113	7.97	8.42	4	10
	4	231	7.69	1.704	.112	7.47	7.91	2	10
	Total	559	7.92	1.564	.066	7.79	8.05	2	10
S4	1	61	7.90	1.535	.197	7.51	8.29	4	10
	2	122	8.01	1.480	.134	7.74	8.27	4	10
	3	145	8.10	1.418	.118	7.87	8.34	4	10
	4	231	7.61	1.578	.104	7.41	7.81	2	10
	Total	559	7.86	1.523	.064	7.73	7.98	2	10
S5	1	61	7.79	1.582	.203	7.38	8.19	4	10
	2	122	8.20	1.699	.154	7.89	8.50	3	10
	3	145	7.74	1.889	.157	7.43	8.05	3	10
	4	231	7.22	2.201	.145	6.94	7.51	2	10
	Total	559	7.63	1.989	.084	7.46	7.79	2	10

Table 15. Differences in Teachers' Job Satisfactions regarding Teachers' Experience at their Current Schools – ANOVA Results

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
S1	1	135	8.02	1.401	.121	7.78	8.26	5	10
	2	167	8.17	1.448	.112	7.95	8.39	5	10
	3	108	8.10	1.427	.137	7.83	8.37	5	10
	4	149	7.72	1.648	.135	7.45	7.98	1	10
	Total	559	8.00	1.496	.063	7.88	8.13	1	10
S2	1	135	7.76	1.458	.126	7.51	8.00	4	10
	2	167	7.92	1.527	.118	7.68	8.15	4	10
	3	108	7.12	1.922	.185	6.75	7.49	1	10
	4	149	7.15	1.799	.147	6.86	7.44	4	10
	Total	559	7.52	1.703	.072	7.38	7.66	4	10
S3	1	135	8.06	1.444	.124	7.81	8.31	4	10
	2	167	8.03	1.507	.117	7.80	8.26	4	10
	3	108	7.97	1.531	.147	7.68	8.26	4	10
	4	149	7.62	1.723	.141	7.34	7.90	2	10
	Total	559	7.92	1.564	.066	7.79	8.05	2	10
S4	1	135	8.10	1.435	.123	7.85	8.34	4	10
	2	167	7.95	1.590	.123	7.71	8.20	4	10
	3	108	7.80	1.372	.132	7.53	8.06	4	10
	4	149	7.58	1.595	.131	7.32	7.84	2	10
	Total	559	7.86	1.523	.064	7.73	7.98	2	10
S5	1	135	7.88	1.737	.149	7.59	8.18	3	10
	2	167	8.05	1.722	.133	7.79	8.32	4	10
	3	108	7.39	2.082	.200	6.99	7.79	2	10
	4	149	7.10	2.268	.186	6.73	7.47	4	10
	Total	559	7.63	1.989	.084	7.46	7.79	2	10

Table 16. Differences in Teachers' Job Satisfactions regarding Teachers' Level of Education – ANOVA Results

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
S1	1	392	7.99	1.539	.078	7.84	8.15	1	10
	2	164	8.02	1.377	.108	7.81	8.23	5	10
	3	3	8.00	2.646	1.528	1.43	14.57	5	10
	Total	559	8.00	1.496	.063	7.88	8.13	1	10
S2	1	392	7.53	1.756	.089	7.36	7.70	4	10
	2	164	7.51	1.576	.123	7.26	7.75	4	10
	3	3	6.67	1.528	.882	2.87	10.46	5	8
	Total	559	7.52	1.703	.072	7.38	7.66	4	10
S3	1	392	7.95	1.618	.082	7.79	8.11	2	10
	2	164	7.84	1.444	.113	7.62	8.06	3	10
	3	3	7.67	.577	.333	6.23	9.10	7	8
	Total	559	7.92	1.564	.066	7.79	8.05	2	10
S4	1	392	7.88	1.579	.080	7.72	8.03	2	10
	2	164	7.80	1.387	.108	7.59	8.02	4	10
	3	3	8.33	1.528	.882	4.54	12.13	7	10
	Total	559	7.86	1.523	.064	7.73	7.98	2	10
S5	1	392	7.70	2.005	.101	7.50	7.90	4	10
	2	164	7.47	1.936	.151	7.17	7.77	3	10
	3	3	6.67	2.887	1.667	-.50	13.84	5	10
	Total	559	7.63	1.989	.084	7.46	7.79	3	10

Table 17. Differences in Teachers' Job Satisfactions regarding Teachers' Current Teaching Grade level – ANOVA Results

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
S1	1	207	7.89	1.372	.095	7.71	8.08	5	10
	2	174	7.98	1.486	.113	7.75	8.20	5	10
	3	178	8.15	1.635	.123	7.91	8.39	1	10
	Total	559	8.00	1.496	.063	7.88	8.13	1	10
S2	1	207	7.55	1.538	.107	7.34	7.76	2	10
	2	174	7.47	1.759	.133	7.21	7.73	2	10
	3	178	7.53	1.832	.137	7.26	7.80	2	10
	Total	559	7.52	1.703	.072	7.38	7.66	2	10
S3	1	207	7.89	1.485	.103	7.69	8.09	3	10
	2	174	7.80	1.564	.119	7.57	8.04	2	10
	3	178	8.06	1.649	.124	7.81	8.30	2	10
	Total	559	7.92	1.564	.066	7.79	8.05	2	10
S4	1	207	7.92	1.331	.092	7.74	8.11	4	10
	2	174	7.76	1.583	.120	7.53	8.00	2	10
	3	178	7.87	1.671	.125	7.62	8.12	2	10
	Total	559	7.86	1.523	.064	7.73	7.98	2	10
S5	1	207	7.84	1.781	.124	7.60	8.08	3	10
	2	174	7.67	1.930	.146	7.38	7.96	3	10
	3	178	7.34	2.237	.168	7.01	7.67	4	10
	Total	559	7.63	1.989	.084	7.46	7.79	3	10

Table 18. Differences in Teachers' Job Satisfactions between School Types – Group Statistics

	Schooltype	N	Mean	Std. Deviation	Std. Error Mean
S1	Public	387	7.98	1.553	.079
	Private	172	8.06	1.307	.109
S2	Public	387	7.37	1.778	.090
	Private	172	7.82	1.447	.121
S3	Public	387	7.79	1.627	.083
	Private	172	8.18	1.326	.110
S4	Public	387	7.79	1.568	.080
	Private	172	8.01	1.341	.112
S5	Public	387	7.52	2.039	.104
	Private	172	7.98	1.724	.144

Table 19. Differences in Teachers' Job Satisfactions between School Types – Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S1	Equal variances assumed	10.002	.002	-.554	529	.580	-.081	.145	-.366	.205
	Equal variances not assumed			-.599	301.740	.550	-.081	.135	-.345	.184
S2	Equal variances assumed	12.924	.000	-2.704	529	.007	-.447	.165	-.772	-.122
	Equal variances not assumed			-2.969	312.371	.003	-.447	.151	-.744	-.151
S3	Equal variances assumed	11.089	.001	-2.574	529	.010	-.390	.151	-.687	-.092
	Equal variances not assumed			-2.825	311.958	.005	-.390	.138	-.661	-.118
S4	Equal variances assumed	7.692	.006	-1.485	529	.138	-.219	.147	-.508	.071
	Equal variances not assumed			-1.595	297.057	.112	-.219	.137	-.489	.051
S5	Equal variances assumed	14.318	.000	-2.405	529	.017	-.460	.191	-.835	-.084
	Equal variances not assumed			-2.596	300.457	.010	-.460	.177	-.808	-.111

Table 23. Results of BCa Bootstrapping

	Original sample (O)	Sample mean (M)	Standard deviation (SD)	T statistics (|O/SD|)	P values
Culture → C.AC	1.019	1.019	0.005	210.316	0.000
Culture → C.PC	0.970	0.97	0.009	112.192	0.000
Culture → C.SDE	0.972	0.972	0.009	103.119	0.000
Culture → Teacher Job Satisfaction	0.196	0.197	0.069	2.833	0.005
Knowledge Circulation Effectiveness → K.C	0.970	0.97	0.006	157.127	0.000
Knowledge Circulation Effectiveness → K.E	1.015	1.015	0.003	299.553	0.000
Knowledge Circulation Effectiveness → K.I	0.948	0.948	0.01	91.683	0.000
Knowledge Circulation Effectiveness → K.S	0.962	0.962	0.009	104.669	0.000
Knowledge Circulation Effectiveness →Teacher Job Satisfaction	0.410	0.411	0.067	6.069	0.000
Principalship → Knowledge Circulation Effectiveness	0.072	0.072	0.039	1.847	0.045
Principalship → P.BRDP	1.013	1.013	0.004	255.146	0.000
Principalship → P.DOSP	1.010	1.010	0.003	317.905	0.000
Principalship → P.IIP	0.981	0.981	0.008	119.222	0.000
Principalship → P.SD	0.989	0.989	0.006	175.846	0.000
Principalship → Teacher Job Satisfaction	0.020	0.018	0.039	0.512	0.059
Principalship → Teacher Leadership	0.310	0.310	0.054	5.786	0.000
Teacher Leadership → Knowledge Circulation Effectiveness	0.090	0.091	0.045	2.003	0.045
Teacher Leadership → T.BTE	1.000	0.999	0.008	132.668	0.000
Teacher Leadership → T.CLV	0.941	0.941	0.016	57.443	0.000
Teacher Leadership → T.ICI	0.996	0.996	0.007	143.986	0.000
Teacher Leadership → T.STPD	0.999	1.000	0.011	87.955	0.000
Teacher Leadership → Teacher Job Satisfaction	0.114	0.113	0.056	2.032	0.042

Table 30. Path coefficients between all latent variables and observed variables

	Path coefficients
School Culture → C.AC	0.962
School Culture → C.PC	0.900
School Culture → C.SDE	0.919
School Culture → Teacher Job Satisfaction	**0.192**
Knowledge Circulation Effectiveness → K.C	0.934
Knowledge Circulation Effectiveness → K.E	0.965
Knowledge Circulation Effectiveness → K.I	0.899
Knowledge Circulation Effectiveness → K.S	0.899
Knowledge Circulation Effectiveness → Teacher Job Satisfaction	**0.383**
Principalship → Knowledge Circulation Effectiveness	**0.342**
Principalship → P.BRDP	0.968
Principalship → P.DOSP	0.974
Principalship → P.IIP	0.938
Principalship → P.SD	0.939
Principalship → Teacher Job Satisfaction	**0.150**
Principalship → Teacher Leadership	**0.299**
Teacher Leadership → Knowledge Circulation Effectiveness	**0.518**
Teacher Leadership → T.BTE	0.917
Teacher Leadership → T.CLV	0.843
Teacher Leadership → T.ICI	0.925
Teacher Leadership → T.STPD	0.884
Teacher Leadership → Teacher Job Satisfaction	**0.307**
School Culture * Principalship → Teacher Job Satisfaction	**-0.008**
School Culture * Teacher Leadership → Teacher Job Satisfaction	**-0.005**