

**UNIVERSITI TEKNOLOGI MARA**

**THE INFLUENCE OF  
KNOWLEDGE MANAGEMENT AND  
INDIVIDUAL ABSORPTIVE  
CAPACITY ON MALAYSIAN  
AGRICULTURAL-BASED  
RESEARCHERS'  
INNOVATION CAPABILITY**

**ANAQI BIN AHMAD SALEH**

Thesis submitted in fulfillment  
of the requirements for the degree of  
**Doctor of Philosophy**  
**(Information Management)**

**College of Computing, Informatics and  
Mathematics**

**February 2024**

## ABSTRACT

The importance of agriculture to the basic human lives is irrefutable. It is a vital part of global society, and it significantly impacts the economy and food supply worldwide specifically for Malaysia's society's development since before the colonial era. Besides being responsible for providing food for humans and animals, agriculture also provides employment opportunities and income for people worldwide. However, current economic shifts from an agricultural-based into an industrial-oriented economy have posed greater risks to the national policies involving increment in food supply imports and small farmers' income sources, particularly during post Covid-19 pandemic alongside with the scarcity of soil, weather, and financial supports indicate that this sector needs support to cope with current changes. Thus, advancing research and development (R&D) aspects is one of the main approaches to deal with this critical issue. The R&D process heavily depends on the internal and external knowledge of the researchers in this field to create innovative ways of dealing with the challenges. Accordingly, this study essentially sought to comprehend the individual level measurement on the interrelationship between knowledge management, absorptive capacity, and innovation capability. A literature review and identification of knowledge gaps formed the basis of the conceptual model and 9 hypotheses. To achieve the objectives, this study used a descriptive research design and a purposive sampling design. The unit of analysis was 118 agriculture researchers in Malaysia consisting of respondents from Malaysia research institutions namely MARDI, DVS, MPOB, UiTM and UPM. Empirical data for this study was collected using a self-administered questionnaire based on a five-point Likert-type scale. Descriptive data were used to summarize the data on its distribution, central tendency, and variability, whereas inferential statistics applied Structural Equation Modelling (SEM) analysis to test the hypothesized relationships. Results show that knowledge management and absorptive capacity positively and significantly affect the researcher's innovation capability, and 8 out of 9 hypotheses are supported. The study findings further revealed that absorptive capacity mediates the relationship between knowledge management and innovation capability. Agriculture R&D should encourage and emphasize the researchers to acquire, assimilate, transform, and exploit external knowledge so that the innovation capability will benefit the agriculture sectors. This study, therefore, concludes that the collective effect of knowledge management, mediated with absorptive capacity, affects employees' innovation capability and, by extension, their R&D performance. This study significantly contributed on the theoretical, managerial, and methodological aspects of knowledge management in agricultural sector.

## ACKNOWLEDGEMENT

Bismillahir Rahmanir Rahim.

Alhamdulillah, all praises and thanks are due to Allah, the Most Gracious and the Most Merciful, who has granted me the opportunity to undertake this journey and endure it till today. All these pieces will never meet the end without Allah's will.

Firstly, I would like to express my sincere gratitude to my supervisor, Associate Professor Dr. Mad Khir Johari bin Abdullah Sani and Ts. Dr. Noor Zaidi Sahid, also to former co-supervisor Ts. Dr Siti Arpah Noordin for their guidance, support, and encouragement throughout the entire process. Their valuable insights and feedback were crucial to the completion of this thesis. Without their patience in guiding me, this project will never at this stage.

I would also like to extend my highest appreciation to my parent (Ahmad Saleh and ), siblings, family members and especially my wife and child ( and Umaymah) for their confidence, unwavering support, and inspiration. Their love and encouragement were instrumental in keeping me motivated and focused during this long ups and downs, ever-changing journey. Further appreciation also expanded to the in-law's family for their confidence and trust in striving for this path.

Finally, I would like to express my gratitude to all those who have contributed to my academic and personal development, especially academic and supporting staff from College of Computing, Informatics and Mathematics (previously Faculty of Information Management), my mentors and colleagues at HALUAN, also my friends for their continuous encouragement for me to finish this journey. You know who you are, I'm abstaining myself to mention your names here due to timidly leaving invaluable name. Your support and encouragement have been precious, and I am deeply grateful for all that you have done for me.

Once again, alhamdulillah, all praises and thanks are due to Allah for His countless blessings and guidance throughout this journey.

# TABLE OF CONTENTS

	<b>Page</b>
<b>CONFIRMATION BY PANEL OF EXAMINERS</b>	<b>ii</b>
<b>AUTHOR'S DECLARATION</b>	<b>iii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT</b>	<b>v</b>
<b>TABLE OF CONTENTS</b>	<b>vi</b>
<b>LIST OF TABLES</b>	<b>xi</b>
<b>LIST OF FIGURES</b>	<b>xiii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xiv</b>
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.1 Chapter Introduction	1
1.2 Research Background	1
1.3 Problem Statement	6
1.4 Research Purposes	11
1.5 Research Questions	12
1.6 Research Objectives	12
1.7 Scope And Limitation Of The Study	13
1.8 Significance Of The Study	13
1.8.1 The body of knowledge	13
1.8.2 Research institutions and future researchers	15
1.8.3 Government & policy makers	15
1.8.4 Contribution to society development	16
1.9 Operational Definition Of Terms	17
1.9.1 Knowledge Management	17
1.9.2 Absorptive Capacity	19
1.9.3 Innovation Capability	21
1.9.4 Agricultural-based researchers	22

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Chapter Introduction**

In the interest of providing a fundamental comprehension of the report, this chapter provides an overview of the research conducted. This chapter is distributed into ten (10) sections, the first of which discusses the research background of the topic (section 1.2), while the next section (section 1.3) delves into the problem statement for this study (section 1.2). The explanations for the research purpose, research questions, and research objectives can be found in sections 1.4 through 1.6, respectively. This study has some limitations, which are discussed in Section 1.7 of the report. In addition, the significance of this study is discussed in Section 1.8, and the chapter titled "Chapter 1.9" provides a more in-depth definition of the terms utilized throughout this research. The report's structural framework was outlined in the final section, 1.10.

### **1.2 Research Background**

The substantial value of knowledge in today's knowledge-based industries is undeniable. Current revolutionary changes in competitive markets are no longer competing solely on land or money capital but also on information and knowledge capabilities (Omotayo, 2015). Knowledge-based economy refers to knowledge-intensive activities that contribute to an enhancement step of technical or scientific advance in product or services scope (Bano & Taylor, 2015). Powell & Snellman (2004) suggested that "the key component of the knowledge economy is a greater reliance on intellectual capabilities than on physical or natural resources". Knowledge has been widely acknowledged as a commodity for any individual or organization, especially in developing new inventions and innovative products to sustain businesses (Volkov & Garanina, 2007). A tacit and explicit form of knowledge exists within the organization needs to be managed strategically (Hanson, 2014) starting with the ability