EXPLORING THE BARRIERS TO ADOPTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN LARGE ORGANIZATIONS

CHALITA DANDHANIN

A THEMATIC PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF MANAGEMENT
COLLEGE OF MANAGEMENT
MAHIDOL UNIVERSITY
2021

Thematic paper
entitled

EXPLORING THE BARRIERS TO ADOPTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN LARGE ORGANIZATIONS

was submitted to the College of Management, Mahidol University
for the degree of Master of Management
on
September 12, 2021

.....
Miss Chalita Dandhanin
Candidate

.....	.....
Simon Zaby, Ph.D. Advisor	Assoc. Prof. Astrid Kainzbauer, Ph.D. Chairperson
.....	.....
Assoc. Prof. Vichita Ractham, Ph.D. Dean College of Management Mahidol University	Detlef Reis, Ph.D. Committee member

ACKNOWLEDGEMENTS

Firstly, I would like to express my heartfelt gratitude to Professor Simon Zaby, my thematic advisor, for his guidance and support throughout the drafting process. I also would like to express my appreciation to the faculty and staff at Mahidol University's College of Management for providing me with knowledge and inspiring me to perform an in-depth study on the topic of Artificial Intelligence technology adoption.

In addition, I would like to thank all of my participants and friends for contributing valuable information and opinions to my research. They have given me such a unique perspective, and the interview has taught me a lot. This paper would not be finished without them.

Chalita Dandhanin

EXPLORING THE BARRIERS TO ADOPTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN LARGE ORGANIZATIONS

CHALITA DANDHANIN 6249156

M.M. (GENERAL MANAGEMENT)

THEMATIC PAPER ADVISORY COMMITTEE: SIMON ZABY, Ph.D., ASSOC. PROF. ASTRID KAINZBAUER, Ph.D., DETLEF REIS, Ph.D.

ABSTRACT

The purpose of this thematic paper is to explore the key factors that affect barriers to the adoption of Artificial Intelligence (AI) with a particular focus on enterprises located in Thailand. Several studies show that organizations in Thailand are relatively late in adopting AI technology than the rest of the world. Thus, Thai businesses have to digitally transform their organization or risk losing to competitors.

A semi-structured interview method is used as the data collecting approach. Ten participants from various industries in Thailand are selected for the interview. The findings show that the four most common themes discussed are lack of support from executives, lack of trust in AI, lack of resources dedicated to implementing new technologies, and concern about the expense for implementing AI from the executives. To thrive in the digital era, upper management should establish a strong digital culture, provide resources for digital transformation, and ensure that their workers are digitally competent.

Further research can be conducted in other regions and updated in the post-pandemic period to investigate the extent to which AI technology is used during and after the pandemic. In addition, a more in-depth examination of small and medium-sized enterprises and start-up businesses can also be conducted to discover if they face the same problems as large corporations.

KEY WORDS: Artificial Intelligence/ Barriers/ Large Organizations

39 pages

CONTENTS

CONTENTS (cont.)

LIST OF TABLES

LIST OF FIGURES

CHAPTER I
INTRODUCTION

In the present, Artificial Intelligence (AI) has been a significant and integral part of many businesses in every industry around the world. There are many definitions for AI, but to put it in the simplest term, it is defined as "getting computers to do tasks that would normally require human intelligence" (van Duin & Bakhshi, 2017). From the business perspective, AI technology is helpful in three major tasks: robotics and cognitive automation, cognitive insight, and cognitive engagement (Davenport & Ronanki, 2018).

Davenport and Ronanski (2018) described robotics and cognitive automation as AI being programmed to automate mundane and routine business tasks. For example, it can automatically update the address per the customer's request after filling in the online form. As for cognitive insight, they described it as AI being able to predict and detect patterns in data sets to gain understanding. It is widely used for detecting insurance fraud patterns or determining the risk of defaulting the loans. Lastly, they defined cognitive engagement as using the AI to interact with customers and employees. For example, AI is used for product recommendations to fit customers' preferences in the online shopping website. It can also be utilized to answer employees' inquiries 24/7. Therefore, over 50% of the organizations worldwide, especially in the technology and telecommunication sectors, have adopted AI in one or more of their business functions or units in the year 2020 (Balakrishnan et al., 2020).

On the contrary, the situation in Thailand in terms of digital technologies that Thai businesses have applied or plan to implement is rather dire. According to a survey conducted by Chutijirawong et al. (2020) in Thailand on large organizations, defined as those with more than 1,000 employees, just 11% have already deployed AI technology, 56% expect to do so in the next 1-3 years, and 24% have no intentions to use it at all. Moreover, Thai organizations are still lagging in terms of digital leaders (have digitally transformed the organization) and digital adopters (have a digital plan,

investment, and technology in the organization) compared to the rest of the world. They mentioned that this is a significant issue as the organizations that fail to adapt or adjust to new technologies will often fall behind in business performance and ultimately lose to their competitors. As a result, the upper management has to overcome barriers and develop the most effective method to transform their organization as soon as possible digitally.

Therefore, the purpose of this thematic paper is to explore the key factors that affect barriers to the adoption of Artificial Intelligence (AI) from a mid-management and operational level perspective with a particular focus on enterprises located in Thailand. In addition, this study aims to provide insights for top management in large public and private organizations to adequately prepare their organization to be ready for AI technology and survive in the digital era.

CHAPTER II
LITERATURE REVIEW

2.1 The Adoption of Artificial Intelligence Technology in Thailand

Organizations in Thailand are relatively late in adopting AI technology compared to the rest of the world, evidenced by a limited amount of literature available on adopting AI technology in Thailand (Ngotngamwong, 2020). A study by Chutijirawong et al. (2020), which explored digital technologies implementation in Thai organizations, aligns with the previous statement. The findings show that only 11% of the organizations in Thailand have already implemented AI, 56% plan to implement it within 1-3 years, and 24% do not have a plan to implement AI technology at all (Figure 2.1). Thus, Thai organizations should expect to face the challenge of keeping up with the customers' lifestyle changes soon (Ngotngamwong, 2020).

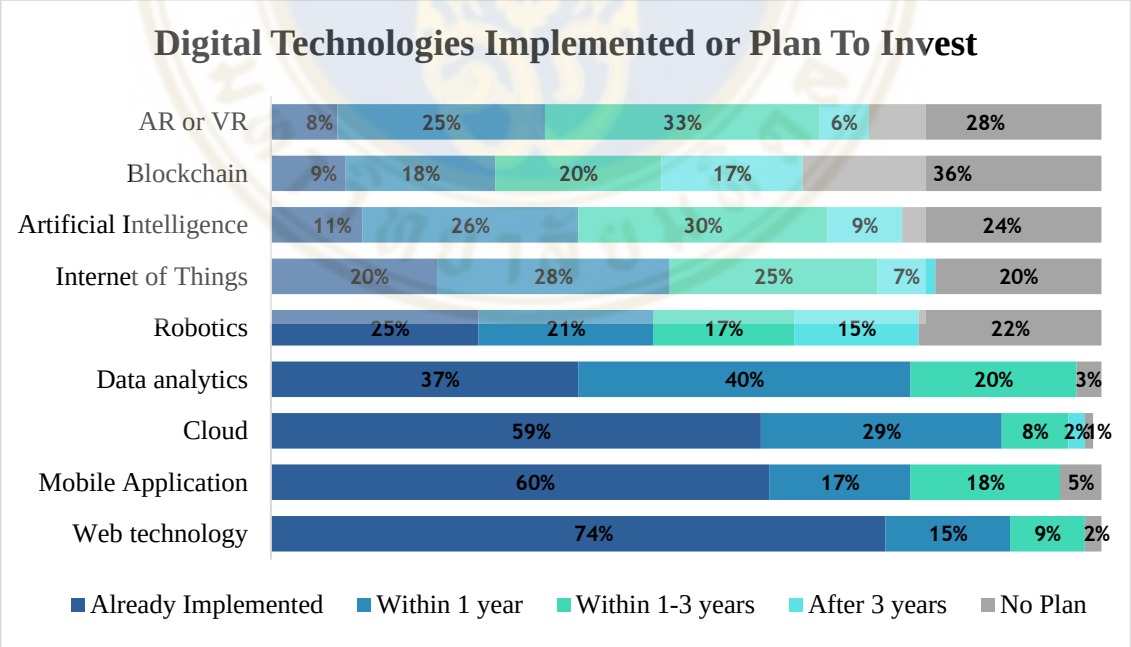

Figure 2.1 Digital technologies implemented or planned to invest (Chutijirawong et al., 2020)

The top adopters in implementing AI technology are the financial services, technology, media, and telecommunications industries (Figure 2.2). They contribute to 70% of total implementation in Thai organizations in 2020 (Chutijirawong et al., 2020).

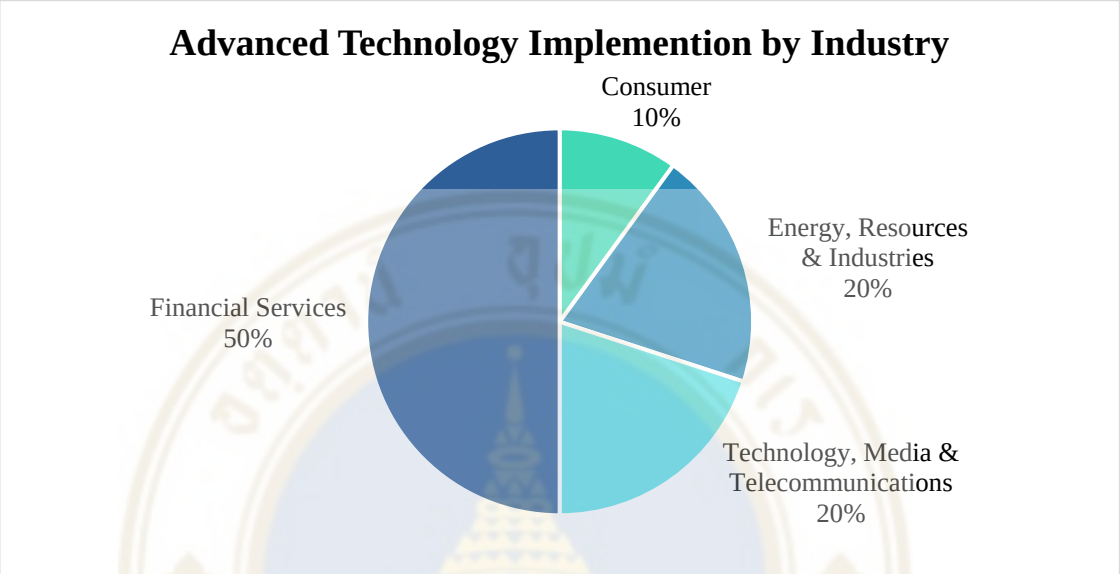

Figure 2.2 Advanced technology implementation by industry (Chutijirawong et al., 2020)

Ngotngamwong (2020) provided an example of Siam Commercial Bank (SCB), one of the leading banks in Thailand, which aims to develop and upgrade its technology and infrastructure to gain a competitive advantage in both domestic and regional markets. The findings suggest that SCB has established its own AI unit and plans to roll out the robo-adviser service. In addition, SCB Assessment Management Co., a subsidiary of SCB, will also use AI to help identify the investment for customers.

Since adopting AI technology is essential to the economy's future growth, Thailand's Board of Investment offers attractive packages for companies in the targeted industries such as the automation sector to encourage investment in AI. Those who include AI and robotics in their investment project will be exempted from corporate income tax for up to 13 years (Ngotngamwong, 2020).

2.2 Research Methodology for Adoption of Artificial Intelligence Technology Studies

Quantitative studies were conducted for the adoption of Information Technology and Information System (IT/IS) research by distributing online or paper questionnaires to respondents (Kettunen et al., 2018). Alsheiabni et al. (2019) examined the factors that inhibited the adoption of AI at the organization level in Australia and distributed the online survey via the LinkedIn network to potential respondents in 950 organizations domestically. Current research shows an increasing number of qualitative studies since they can be conducted more in-depth than quantitative experiments. Qualitative research can lead to a better understanding of acceptance and use of technology (Kettunen et al., 2018). For instance, a study by Kettunen et al. (2018) collected the data through individual interviews, group discussions, and written personal reflections to analyze the consumer's online shopping behavior, focusing on acceptance and use of technology.

There has been a growing number of qualitative studies as well in Thailand: three out of four research related to AI practice in Thailand in 2020 have been completed using the qualitative method. Firstly, Tangjai (2020) completed his thesis by arranging in-depth interviews with 15 participants to analyze the factors that affect the barrier to entry of AI technology in the medical sector. Secondly, Akarataweewattanathorn (2020) studied the feasibility and impact of implementing AI technology for recruitment functions by conducting qualitative research with in-depth interviews with 22 employees in the HR field with non-probability sampling. Lastly, Ngotngamwong (2020) performed her qualitative study with a convenience sampling method by interviewing 7 participants to examine how AI impacts the employees working in Thai businesses. As for quantitative research about AI practice in Thailand, a study by Chutijirawong et al. (2020) to explore the digital transformation effect in Thai organizations is the only one identified to be carried out in a quantitative method. The paper indicates that the data is collected by distributing an online survey to 91 executives in Thailand.

2.3 Findings of Adoption of Artificial Intelligence Technology Studies

The literature review for this paper will primarily focus on the findings of the factors that inhibit the adoption of AI technology from studies conducted overseas and in Thailand. For results from overseas, Alsheiabni et al. (2019) revealed that the most common barrier for Australian organizations to adopt AI technology is the inadequate skills to create and deploy AI technology (33.8%), followed by the unclear business case (16.9%) and the lack of support from the upper management (14.4%). In addition, Radhakrishnan and Chattopadhyay (2020) observed that at the organization level, the organizational strategy and roadmap for implementing AI, top management support, and existing infrastructure are among the key determinants that could encourage and inhibit AI adoption. At the individual level, they discovered that trust, cost, and social influence are among the key determinants that could promote and inhibit AI adoption.

Findings for Thailand are also similar to those published overseas. A study by Chutijirawong et al. (2020) found that the barriers and challenges of AI adoption are as follows: infrastructure upgrade is too costly, the skills of the employees in the organization are inadequate to support the implementation of AI technology, and the data collected in the organization is incomplete. Tangjai (2020) learned that the cost of implementing AI technology and the conservative way of management of the upper management are the main barriers to implementing AI technology in the radiology unit in Thai medical institutes. In addition, the general public in Thailand was reluctant to accept the results produced by AI and question the reliability of the AI technology. Lastly, Akarataweewattanathorn (2020) also realized that Human Resources executives in Thailand were reluctant to implement AI technology due to the high implementation cost even though they thought it is beneficial for automating administrative HR tasks.

Therefore, it can be concluded that the main factors which inhibit AI technology adoption are: the high cost of implementation (purchase AI technology, upgrade existing infrastructure), lack of employee's knowledge and skill, and lack of support from upper management.

2.4 Theoretical Framework

In this research, the Unified Model Theory of Individual Technology Acceptance (UTAUT) will be utilized to explore the factors that affect the barriers to the adoption of Artificial Intelligence technology in Thai organizations. The UTAUT model is one of the leading models used to analyze technology adoption, use, and acceptance. It is the most recent and combines other previously established frameworks into one model (Chatti & Hadoussa, 2021). In addition, it is commonly used to examine technology adoption in large organizations (Marchewka & Kostiwa, 2007).

Chatti and Hadoussa (2021) stated that in the UTAUT model, the use of technology means that a person has an intention to use it, and it is influenced by four main determinants: expected performance, expected effort, social influence, and facilitation conditions. In addition, there are moderating variables that vary the effect of the four primary determinants: gender, age, experience of use, and voluntariness of use. For example, the younger employees would have a stronger willingness to adopt new technologies than older ones (Marchewka & Kostiwa, 2007).

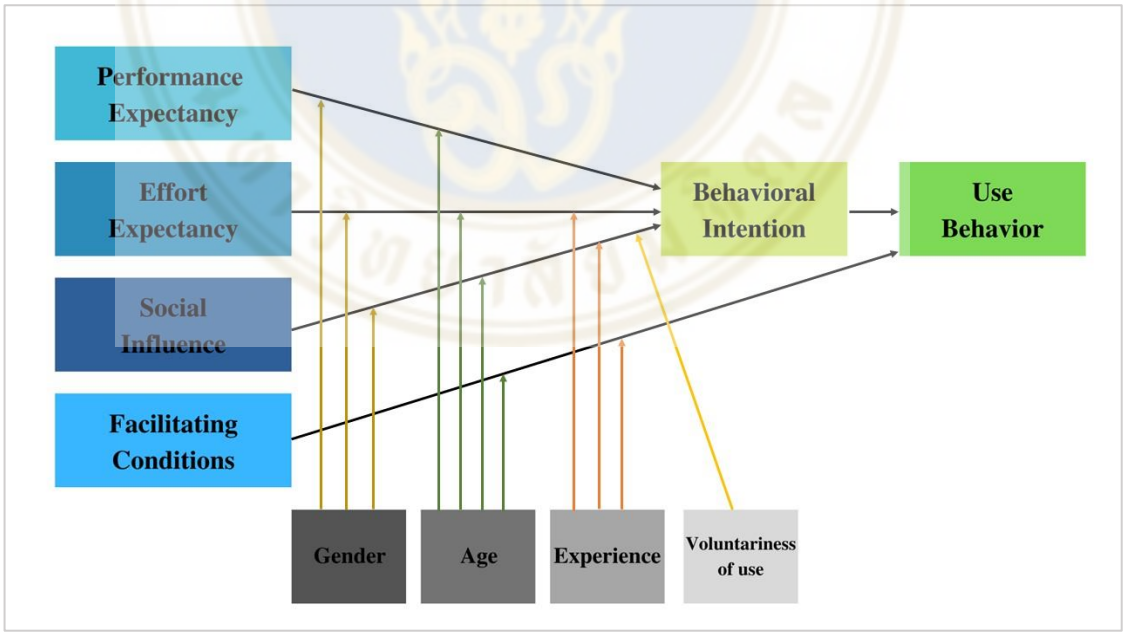

Figure 2.3 UTAUT Model (Marchewka & Kostiwa, 2007)

This paper will focus on the four main determinants of technology adoptions: performance expectancy, effort expectancy, social influence, and facilitating conditions. Chatti and Hadoussa (2021) defined the four primary determinants as follows:

1. Performance expectancy: how much an individual believes that using a system will help them increase the level of job performance, as in how much an individual views the system as useful in their job.
2. Effort expectancy: how much an individual believes that the technology is easy to understand and use
3. Social influence: how most people who are influential to them view the use of technology. In other words, it is how they think whether or not this individual should be using the technology in question.
4. Facilitation conditions: refers to how much an individual believes that the existing organization and technical infrastructure are adequate to support the use of the system. Generally, this is assessed by the level of upper management involvement and the level of technical assistance.

CHAPTER III
RESEARCH METHODOLOGY

A semi-structured interview method is selected as the data collection approach because the primary purpose of this paper is to explore "why" there are barriers to adopting AI technology in large organizations. Due to the casual setting and engaging follow-up interview questions, Adams (2015) discovered that an interviewer could ask open-ended questions during a semi-structured interview and obtain more in-depth explanations from participants than in quantitative research. The findings show that the semi-structured interview setting is less formal than other approaches because it is conducted with small groups of people. During a session, there will also be follow-up questions about "why" and "how" to further engage the conversation between participants and the interviewer. As a result, this interview methodology is best suited for this study to investigate each person's thinking and perspective because an individual's reasons for adopting or not adopting AI might be complex and varied.

Due to time constraints, a type of non-probability sampling known as convenience sampling is applied for this research. A total of ten participants are selected for a semi-structured interview, with two working in mid-management positions and eight in operations positions. Employees in mid-management are picked for this interview because they must advise and help upper management on the organization's direction. As a result, they have a more profound knowledge of the reasoning behind executive decisions and may offer insights on how AI technology might support or impede the organization's vision or strategy.

Employees at the operations level are recruited for this research because they must use various tools in their everyday functions to meet the business or organization's objectives. Consequently, they can provide insight into the advantages and disadvantages of implementing AI technology. Additionally, they can evaluate the level of impact AI technology has on their jobs from the end user's standpoint.

Another dimension of the participants' group can be investigated: the private and public sectors. Three of the study's participants work in Thailand's public sector, while the other seven work in the private sector for multinational and Thai firms. Individuals working in both industries are being recruited to provide insights into how the public and private sectors adapt to emerging or new technologies such as AI, as they have different approaches to managing their enterprises. According to Pongsiri's (2003) research, the private sector features are cost-conscious and efficient, motivated by monetary profit. On the other hand, the public sector might be more hierarchical, complex, and cost-conscious than private businesses. Note that state-owned firms are considered part of the public sector for this study. Furthermore, because these participants operate in various business industries, they may provide valuable insight into the extent to which each industry utilizes AI technology for this study. The details of interview participants are shown in Table 3.1.

Table 3.1 Details of interview participants

No.	Job Title	Department	Level	Industry	Sector
1	Engineer	Business Development Division	Operation	Energy	Public
2	Administrative Officer	Human Resources Development	Operation	Energy	Public
3	Management Support	Risk Management	Operation	Financial Services	Private Multinational
4	Learning and Development Technology Section Head	Human Resources Development	Management	Energy	Public
5	Designer	Store Development and Design	Operation	Consumer	Private Thai
6	Completion Engineer	Drilling and Completions	Operation	Energy	Private Multinational
7	Key Account Executive	Rapid Diagnostic Department	Operation	Healthcare	Private Multinational

Table 3.1 Details of interview participants (cont.)

No.	Job Title	Department	Level	Industry	Sector
8	Loyalty Operations Analyst	Loyalty Operations	Operation	Energy	Private Multina-tional
9	Project Manager	Products Department	Management	Financial Services	Private Multina-tional
10	Data Analyst	Digital Solutions Team	Operation	Energy	Private Thai

Regarding the semi-structured interview questions, there are two question parts which consist of 15 questions in total: the demographic survey of participants and the assessment of the participants' perspective towards the use of AI technology. The first part is the demographic survey of participants, which has five questions altogether. The second part is the assessment of the participants' perspective towards the use of AI technology, consisting of ten questions. These questions are based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model by Venkatesh et al. (2003), which assesses the four main factors that affect the adoption of AI technology: facilitating conditions, performance expectancy, effort expectancy, and social influence. In addition, the participant's intention to use the AI technology will also be assessed (Table 3.2). Each interview is scheduled to last approximately 25-35 minutes and will be conducted anonymously. The following is a list of interview questions.

Part 1: Demographic survey of participants

1. What is your workplace, department, and job title?
2. How long have you been working in your current position?
3. What is your age range?
4. What is your gender?
5. What is your highest degree of education?

Part 2: The assessment of the participants' perspective towards the use of AI technology

Table 3.2 Interview questions with the area of assessment

Area of assessment	Interview Question
Facilitating Conditions	1. How much do you know about AI technology? Please describe what AI is in your opinion with an example.
	2. Do you think you have the necessary knowledge to use AI technology in your work?
	3. Does your organization have the resources necessary to use or implement AI technology?
Performance Expectancy	4. Do you find AI technology useful in your work or your organization? Why or why not?
	5. To what extent are you willing to let AI technology assist or replace your work?
Effort Expectancy	6. Do you find AI technology easy to learn and use? Why or why not?
Social Influence	7. What do your colleague, boss, and CEO say about implementing AI technology in your work or organization?
Intention to adopt	8. Do you plan to use AI technology in your work in the future? If so, when?
	9. Do you think AI technology is worth more than the cost? Why or why not?
	10. If you were the CEO of your organization, would you invest in AI technology? Why or why not?

Following the session's conclusion, the data will be analyzed using the thematic analysis methodology by Kettunen et al. (2018). This method is most commonly implemented in qualitative research since it can be customized to meet the data collection and the experiment's goals. The following is how the theme analysis method will be used in this study. First, the material is transcribed and organized into a table. The table will then be examined for repeating responses and themes. Finally, a detailed analysis of the data will be reported in the findings section.

CHAPTER IV
FINDINGS

Following the collection of interview responses, the data is summarized to investigate the factors that influence barriers to AI adoption in large organizations. Then, it is divided into five main themes of technology perception using the UTAUT model: Facilitating Conditions, Performance Expectancy, Effort Expectancy, Social Influence, and Intention to Adopt AI technology. Subsequently, the information is further analyzed in the other two dimensions by business sectors and industries to see how the enterprises respond to emerging or new technology such as AI. The results and analysis are as follows.

4.1 Facilitation Conditions Barriers

The participants are assessed on how much they believe the existing organization and technical infrastructure are adequate to support the use of the system. When inquired about how much they know about AI, 90% of interviewees answered that they have some knowledge about it, and 10% responded they know about this technology in great detail (Table 4.1).

Table 4.1 Participants' level of AI technology knowledge (n=10)

Question	Responses	Response Frequency	(%)
How much do you know about AI technology?	I have some knowledge about AI technology.	9	90.0
	I know about AI technology in great detail.	1	10.0

When prompted interviewees to describe AI technology, the study found that most think about AI as a program to process data and assist humans in decision-

making. AI technology is also defined as a robot that acts like humans and a program that can process things automatically (Table 4.2). The result demonstrates that employees working in Thai organizations view AI as a technology with a mind of its own that can assist humans in decision-making and automatic task processes. In addition, the participants provided robotics, machine learning, and product suggestion as an example of AI.

Table 4.2 Participants' description of AI (n=10)

Question	Responses	Response Frequency	(%)
Please describe what AI is in your opinion.	AI is a program to process data and assist humans in decision-making, such as machine learning and product suggestion.	6	60.0
	AI is a robot that acts and thinks like humans.	2	20.0
	AI is a program that can process things automatically, such as robotic process automation.	2	20.0

Regarding the interviewees' opinions regarding the resources necessary to use or implement AI technology in the organization, only two participants responded they think their companies have all the resources required to implement AI. Six out of ten respondents replied their enterprises have partial resources, and another two do not believe that their organization has any assets to put AI into practice (Table 4.3). Further analyzing the findings shows four recurring items discussed during the conversation: human capital and know-how, finance, technical infrastructure, and the support of upper management and employees.

Table 4.3 Participants' perception of the availability of resources to implement AI (n=10)

Participant No.	Human Capital	Finance	Technical Infrastructure	Support from Upper management	Overall Availability of resources
1.	No	Yes	Yes	No	Partial
2.	No	No	No	No	None
3.	Yes	No	Yes	No	Partial
4.	Yes	Yes	Yes	No	Partial
5.	No	No	No	No	None
6.	Yes	Yes	Yes	Yes	Full
7.	Yes	Yes	Yes	No	Partial
8.	Yes	No	Yes	Yes	Partial
9.	No	Yes	Yes	Yes	Partial
10.	Yes	Yes	Yes	Yes	Full
Total Number of Availability (%)	6 (60%)	6 (60%)	8 (80%)	4 (40%)	Full - 2 (20.0%) Partial - 6 (60.0%) None - 2 (20.0%)

The asset that participants viewed as most readily available for AI implementation is the technical infrastructure. Eight out of ten interviewees reported that their companies have state-of-art technology with enough data to deploy AI. Participant 1 (Engineer) stated, "The core business units in my organization already have extensive databases which are sufficient for AI technology, particularly for Machine Learning, as they have been collecting the data for a long time."

Tied for the second place for the assets viewed as immediately accessible are human capital and finance. The majority of participants (60%) responded that their organizations are financially ready for AI implementation as they have a dedicated budget for IT applications. However, many interviewees mentioned that the executives are not keen on implementing new technologies due to the recent economic slowdown. Participant 5 (Designer) responded, "AI is not the top priority to invest at the moment from the management's perspective. They are doing everything possible to save money

for the corporation and consider new technologies such as AI to be incredibly expensive to invest in."

In terms of human capital, 60% of participants stated that they have a dedicated IT team in the organization. Participant 10 (Data Analyst) noted that the organization has a digital solutions team to assist with the digital transformation mission and a digital academy to develop human capital and knowledge of AI technology. Nevertheless, some interviewees are concerned about the staffing because it takes many people to implement the technology. Participant 9 (Project Manager) replied, "We have experienced computer engineers with updated knowledge, but we are short of people right now. It takes many human resources and time to learn new technologies such as AI and execute the project."

The resource that participants perceive as lacking the most is upper management support, as only 40% reported that their executives encourage the implementation of AI technology. The majority of interviewees said their directors do not see the significance of AI technology as Participant 1 (Engineer) replied, "All the resources are available for us to use. What is lacking is the support of the top management. They do not see why the organization should implement AI."

When questioned about whether or not they have the necessary knowledge to use AI in their work, all participants (100%) replied that they have some expertise to use AI technology. However, more additional training on how to use this particular tool is needed. Participant 5 (Designer) revealed, "I think my knowledge is at a medium level because I have not studied extensively about it. However, if the system is not too hard to use for end-users, and it comes with training and user manual, then I would not have any problem using it."

From the result discussed previously, it can be concluded that one of the barriers to adopting AI technology in Thai organizations is the lack of resources to implement AI. The biggest issue is the lack of support from upper management, followed by the shortage of human capital and budget dedicated to implementing new technologies.

4.2 Performance Expectancy Barriers

The participants are inquired on how much they believe that using AI will help them improve their job performance or the perceived usefulness of the technology. Regarding whether or not the interviewees find AI technology helpful in their work or organization, participants predominantly reported that they find AI valuable for their work and organization (Table 4.4). Interestingly, two out of ten interviewees found AI useful for their organizations but not for their jobs.

Table 4.4 Participants' perception of the usefulness of AI technology (n=10)

Question	Responses	Response Frequency	(%)
Do you find AI technology useful in your work or your organization? Why or why not?	I find it useful in my work and my organization because it's helpful in cognitive insight, robotics and cognitive automation, and cognitive engagement tasks.	8	80.0
	I find it useful for my organization but not in my work because it requires human interactions.	2	20.0

As for why the respondents think AI is beneficial, the answers can be divided into three major categories, according to the findings from Davenport and Ronanki (2018): cognitive insight, robotics and cognitive automation, and cognitive engagement. In terms of cognitive insight, multiple participants stated that AI helps assist people with decision-making and recognize patterns and flaws in data sets because it is bias-free. As for robotics and cognitive automation, the respondents find AI beneficial in automatically processing manual administrative tasks such as filling in the forms or retrieving data from multiple databases. Lastly, for cognitive engagement, many participants mentioned AI is valuable for suggesting products on e-commerce websites and automatically provide information to customers after the inquiry.

The interviewees who answered they find AI beneficial for their organizations but not in their work stated their jobs require human interaction as the cause. One of the respondents who gave this answer works as a Key Account Executive, while the other works as a Loyalty Operations Analyst. Both of their jobs require them to interact

primarily with customers and vendors. Participant 7 (Key Account Executive) stated, "AI is not suitable for my work and team because I am a salesperson. One of my job requirements is building a relationship with customers who have different characters and needs. While AI can analyze the user behaviors to a certain extent, I think it still lacks the "human touch," and I do not think it can perform as well as humans."

When asked to what extent they are willing to let AI technology assist or replace their work, all respondents (100%) said they are ready to let AI partially replace their tasks. The majority of the interviewees would like AI technology to assist with repetitive administrative tasks that takes a lot of time. The rest of the respondents answered that AI could support them with decision-making and fixing software bugs, respectively (Table 4.5).

Table 4.5 Participants' level of extent in allowing AI technology to assist with their work (n=10)

Question	Responses	Response Frequency	(%)
To what extent are you willing to let AI technology assist or replace your work?	I am willing to let AI replace my work partially for repetitive administrative tasks.	5	50.0
	I am willing to let AI replace my work partially to assist with decision-making tasks.	3	30.0
	I am willing to let AI replace my work partially to fix software bugs.	2	20.0

As for the reasoning for allowing AI technology to replace their work partially, 40% of the participants replied that they believe that some tasks still require a human touch. While another 40% stated that they do not trust the results provided by AI technology because the algorithm behind AI can be complex and challenging to understand. Finally, 20% of the interviewees agreed that humans must ultimately control AI technology for fine-tuning and optimization because the environment is constantly changing (Table 4.6).

Table 4.6 Participants' reasoning for allowing AI technology to partially replace their tasks (n=10)

Question	Responses	Response Frequency	(%)
Why do you let AI technology partially replace your task?	I believe some tasks still require a human touch.	4	40.0
	I do not trust the results provided by AI technology.	4	40.0
	I believe humans still have to control AI technology for optimization.	2	20.0

Participant 4 (Learning and Development Section Head) believes that some tasks still require a human touch stated, "There are sensitive topics that require a human touch such as salary increase or bonus. Unfortunately, hard work alone does not necessarily mean you will automatically get a bonus." As for Participant 8 (Loyalty Operations Analyst), who is skeptical about the AI's outcomes answered, "I want AI to help me analyze the situation, but it should only show the recommendation for me to decide. The reason is that I worry about the result from AI because I am not sure how it calculates the result. In the end, we work with humans, so I think that a human should be judging and making the ultimate decision." In addition, Participant 1 (Engineer), who thinks humans must still control AI responded, "At the end, humans still have to control and optimize AI according to the current situation. You cannot let it run completely on its own."

Most participants find AI technology valuable for their job and their organizations to a certain extent. The results show the respondents are willing to partially allow AI to assist and partially replace their work, particularly for repetitive administrative tasks. The participants highlighted the absence of human touch and lack of trust in AI technology as the key reasons for not enabling AI to entirely replace their work, which might be regarded as barriers to AI adoption in Thai organizations.

4.3 Effort Expectancy Barriers

The participants are questioned about how much they believe AI technology is easy to learn and use. In this study, 90% of respondents reported they find AI neither easy nor difficult to use overall. Only one participant stated AI technology easy to learn and use (Table 4.7).

Table 4.7 Participants' responses to the ease of use for AI technology (n=10)

Question	Responses	Response Frequency	(%)
Do you find AI technology easy to learn and use? Why or why not?	I find AI technology neither easy nor difficult to learn and use because I will do everything I can to learn how to use it if AI is necessary for me to complete my tasks.	5	50.0
	I find AI technology neither easy nor difficult to learn and use because I have an open mindset around new technology.	4	40.0
	I find AI technology easy to learn and use because of my computer engineering and data sciences background.	1	10.0

When exploring why AI is neither easy nor difficult, 50% of the interviewees replied that it's necessary to use AI to complete their tasks. If the job requires AI, then they have to learn its functions no matter what. Participant 6 (Completion Engineer) stated, "For me, AI is not too difficult to learn because I think it depends on the necessity of the technology. If it is necessary to use for work, then I will do whatever it takes to learn how to use it." Other 40% of respondents replied that they have an open mindset around new technology. Therefore, AI will not be hard for them to learn and use. Participant 7 (Key Account Executive) answered, "I think I might struggle a bit in learning how to use AI. At the same time, I think it will be advantageous. That is why I am willing to learn about it." On the other hand, Participant 10 (Data Analyst) believes AI to be relatively simple to master because of their educational background in computer engineering and data sciences.

According to the results, the participants rate AI technology as easy to medium in terms of user-friendliness. The respondents are eager to learn and apply it because AI is viewed as essential for their jobs, and they also have an open mind about new technologies. Therefore, Effort Expectancy did not appear to be a substantial barrier to AI technology adoption in Thai organizations in this study.

4.4 Social Influence Barriers

The respondents are inquired about how their coworkers, supervisors, and CEOs feel about the usage of AI technology. In other words, it is how people around the interviewees think about whether or not they should use the technology in question. The interviewees' responses are assessed in two areas for Social Influence: coworkers' opinion and senior management's opinion.

According to the data, 40% of respondents believe their colleagues favor deploying AI technology in their company, while 30% think they're against it. Finally, the remaining participants responded that their coworkers are unconcerned about AI implementation. (Table 4.8).

Table 4.8 Participants' responses to how their colleagues view AI technology (n=10)

Question	Responses		Response Frequency	(%)
What do your colleagues say about implementing AI technology in your organization?	**For AI Technology**	My company has a digital transformation agenda, so everyone welcomes AI.	2	20.0
		My colleagues view AI as a valuable tool to assist them in their jobs.	2	20.0
		Total	**4**	**40.0**
	Against AI Technology	My colleagues think no technology can replace humans.	2	20.0
		My colleagues fear that AI will replace current employees.	1	10.0
		Total	**3**	**30.0**

Table 4.8 Participants' responses to how their colleagues view AI technology (n=10) (cont.)

Question	Responses		Response Frequency	(%)
What do your colleagues say about implementing AI technology in your organization?	**Indifferent towards AI Technology**	My colleagues are too busy with work to care about AI.	2	20.0
		My colleagues are not actively looking to deploy AI, but they are ready for it.	1	10.0
		Total	**3**	**30.0**

When questioned why their coworkers favor AI implementation responded positively, the participants said their firms have been driving the digital transformation agenda for at least two years, with established teams to enable everyone to be digitally literate. Consequently, everyone has an open mindset around new and emerging technology. Another participant answered that AI is a very beneficial tool for assisting with the task. Everyone in the firm would welcome its deployment, as seen by their considerable research into the technology and the effort to introduce it to the team.

On the contrary, the associates who oppose AI deployment have claimed that no technology can ever fully replace humans because it lacks the human touch. Participant 7 (Key Account Executive) reported, "In my team, there is a mindset that no technology to replace humans because our job responsibility is to sell medicine. We humans have to build a relationship with other humans which AI cannot replace." Some also fear that their jobs will be taken away and replaced by AI since it can do a much better and faster job than humans in some tasks.

The explanation for the apathetic colleagues toward AI adoption is that they are too preoccupied with their existing tasks to be concerned about emerging and new technologies. Participant 1 (Engineer) stated, "I think there are many talented people that work in my division, but at the same time, they are already too busy with other tasks that do not require AI technology." Additionally, the coworkers that have neutral feelings are the passive users who are not actively looking to deploy AI in their tasks. Though they are ready to adjust should their organization introduce AI to them.

When questioned about their upper management's views on AI implementation, 50% of participants said their superiors are neutral, 40% stated their bosses are supportive, and only 10% said their bosses are against it. (Table 4.9).

Table 4.9 Participants' responses to how the upper management view AI technology (n=10)

Question	Responses		Response Frequency	(%)
What do your bosses and CEOs say about implementing AI technology in your organization?	**For AI Technology**	My executives are supportive of bringing in AI technology to increase efficiency and save costs in the organization.	4	40.0
	Against AI Technology	My executives think AI technology is too expensive to implement and do not trust it.	1	10.0
	Indifferent towards AI Technology	My executives see the benefit of AI technology but are concerned about the return on investment (ROI).	5	50.0

Participants who claimed that their leaders are neutral on AI technology stated that this is because they recognize the benefits of AI technology. Still, it is somewhat expensive to deploy in the organization currently. Thus, they are concerned about the return on investment. Participant 5 (Designer) reported, "My CEO and boss are profit-oriented. Thus, they try to save as much cost as they can. There isn't enough budget for AI implementation in other units because it is very costly to implement." Participant 2 (Administrative Officer) also mentioned a similar answer to Participant 5, "Some upper management only allows AI to be implemented in a small scale for core business units, which is to predict the electricity demand. However, it has not yet been applied in the non-core business unit since the return on investment, or the time it takes for an investment to pay for itself, is not as obvious as it is in the core business unit. Therefore, operational level employees have to initiate the proposal and convince the executives very hard that the AI project is worth the investment."

Executives in favor of adopting AI technology into their company believe it would help employees work more efficiently, the participants reported. In fact, their organizations have already begun to adopt AI and other IT systems in various areas across the board. In addition, their companies have a dedicated budget for IT technology implementation. Participant 10 (Data Analyst) stated, "My CEO established a digital transformation team two years ago to help with his digital transformation agenda. He is also quite open-minded about AI technology. If we can convince CEO that the project is worth the investment, he will put money in it right away."

Lastly, the findings show that some executives are against implementing AI technology because the cost is too high. Participant 3 (Assistant Management) explained, "The CEO never mentioned anything about AI. He is currently working very hard to cut costs because we lost profits during the COVID-19 situation. Furthermore, the CEO considers technology an unnecessary investment, believing that anyone can do the job as effectively as computers. So, except for a few important IT programs, we are doing everything manually in our everyday tasks."

According to the findings, the participants' significant individuals, such as coworkers, managers, and CEOs, mostly have a neutral to unfavorable perspective about using AI technology in their workplace. The workers are not actively seeking to implement AI technology since they are preoccupied with other work activities. In addition, some employees are opposed to AI because they do not trust it and are afraid of losing their employment if it is implemented. Furthermore, the executives are worried about the return on investment of the AI programs—if the deployment fails, they will lose money due to the substantial implementation costs. Therefore, it can be inferred that coworkers' and upper management's lack of trust in AI, fear of losing jobs, and concern about the expense of implementing AI all contribute to the barrier to AI technology adoption in Thai organizations.

4.5 Intention to Adopt Barriers

The respondents' intent to adopt AI technology in their business and their perceptions of the cost of AI technology are assessed. First, they were questioned about their plans to incorporate AI in their work. The results show that only 40% of participants reported that they already use AI technology or plan to use it in their work. The majority of respondents (60%) replied that they do not intend to use AI in the future (Table 4.10).

Table 4.10 Participants' responses about when they plan to use AI technology (n=10)

Question	Responses		Response Frequency	(%)
Do you have a plan to use AI technology in your work? If yes, when? If no, why?	**Yes**	I am already using AI technology in my work.	1	10.0
		I plan to use AI technology in my work this year.	1	10.0
		I plan to use AI technology in my work within 3 - 4 years.	2	20.0
		Total	**4**	**40.0**
	No	My executives don't have a plan to implement AI technology in my business function.	5	50.0
		I prefer to interact with humans and not robots.	1	10.0
		Total	**6**	**60.0**

For the participants who responded they plan to use AI technology in their work, 10% stated they are already using it at work, and another 10% replied that there is a plan to deploy AI within this year. When explored further, the findings show that their organizations have been pushing the digital transformation for a couple of years now, and AI is one of the plans to digitize their workplace. Participant 10 explained, "I believe that my team will implement this AI technology of cloud-based, automated analytic platform in three months because it has been on the roadmap since last year. The digital academy team has been sending employees to learn and obtain certificates in

cloud-based AI technologies outside of my organization to prepare for the rollout." Those who responded that they plan to deploy AI over the next three to four years do so primarily because their companies are now short on labor and budget due to the economic downturn. Participant 9 (Project Manager) stated, "In the future, we may be able to use AI technology in some scenarios in my team, possibly in three to four years. But it is difficult to predict when exactly because my team is understaffed currently and it difficult to hire new people due to bad economy."

On the other hand, 50% of the respondents do not plan to apply AI technology according to the upper management's policy. The finding shows that six out of ten participants work in supporting business units such as Human Resources Development and Loyalty Operations. Every respondent who answered no to this question stated that it's hard to measure the exact number for ROI because their units do not have a mission to generate income. Participant 4 (Learning and Development Technology Section Head) reported, "AI technology might not be the top priority for top management to consider for our HR function. It is harder to implement in the non-core business units, but I predict that the upper management will push the AI technology to core businesses because it is easier to see the ROI. The first step for our unit is to deploy other technology that's less costly and easier to implement." Furthermore, 10% of participants stated that AI would not be utilized even if the organization plans to deploy AI technology since they prefer to connect with humans over AI robots.

When the participants are inquired if they think AI technology worth more than the cost, most participants (90%) said "Definitely Yes," while 10% answered no.

Table 4.11 Participants' responses about the value of AI technology (n=10)

Question	Responses		Response Frequency	(%)
Do you think AI technology worth more than the cost? Why or why not?	**Yes**	AI technology helps save costs for the organization in the long run.	5	50.0
		AI helps increase work efficiency and reduce the work process.	2	20.0
		Everyone in the organization will benefit from AI technology.	2	20.0
	Total		**9**	**90.0**
	No	AI technology is too costly to implement, and it can be deployed in a limited number of job functions.	1	10.0
	Total		**1**	**10.0**

The results find five out of ten participants believe that AI technology can save the cost for the organization in the long run. However, they all admit that it can be expensive at first. Participant 8 (Loyalty Operations Analyst) explained, "AI will help the company save a lot of money. You make a one-time investment, and it will replace humans in routine tasks. Also, I believe it is worthwhile in terms of business image because any organization that uses AI technology will be perceived as open-minded and technologically savvy."

Two out of ten interviewees also view AI as beneficial in increasing work efficiency and reducing the work process to have time to do something more productive in their jobs. Participant 5 (Designer) stated, "I would pay for AI technology because once it is implemented in our units, we will have time to do other tasks since AI is already taking care of it. Humans should focus on creative tasks rather than routine ones." Another two of the participants mentioned that they believe everyone will benefit from the technology directly and indirectly. Participant 6 (Completion Engineer) stated, "AI positively impacts everyone in the organization. I've seen several benefits from AI adoption, such as cost savings and increased productivity, and I'm optimistic about it. I believe everyone shares the same opinion as I."

Finally, the argument stated by the respondent who said AI is not worth more than the cost was that the expense of AI implementation is too high. It can only

be used in the backend processes due to the nature of the firm, as the main operation is customer service. Participant 3 (Management Support) replied, "I do not think AI is good enough for customer engagement function yet. Customers generally would like to speak with a person and not robots."

In the last question to assess the respondents' intention to adopt AI technology, they were asked whether they would invest in AI technology if they were the company's CEO. Similar to the previous question, most participants (90%) said they would invest in AI technology if they were CEO. Only 10% of those polled said no to this question (Table 4.12).

Table 4.12 Participants' responses about whether they would invest in AI technology (n=10)

Question	Responses		Response Frequency	(%)
If you were the CEO of your organization, would you invest in AI technology? Why or why not?	**Yes**	AI technology helps us save costs, increase work efficiency, and reduce the work process in my organization.	7	70.0
		AI technology can create a competitive advantage for my organization	2	20.0
		Total	**9**	**90.0**
	No	AI technology is applicable only in a limited number of job functions in my organization.	1	10.0
		Total	**1**	**10.0**

In the case of participants who answered yes to this question, seven respondents stated that it is because they see the benefits of AI, such as saving costs and increasing work productivity. Thus, they would implement this technology right away. In addition, two interviewees believe AI technology will give a competitive advantage over other businesses. Participant 9 (Project Manager) replied, "As a fintech firm, AI would provide us a competitive advantage over our rivals. I believe that this technology will enable us to give better products and services to our customers." The participants who said they would not invest in AI if they were CEOs explained that this is due to business

nature, which needs human interactions. As a result, AI technology can only be used partially in their business, and they believe it is not worth the cost.

Based on the findings, the participants view AI technology as beneficial and worth the cost of implementation for their organizations in general. Should they become CEOs, they will invest in this technology right away. The respondents explained that AI helps save cost, increase work efficiency, reduce work processes, and gain a competitive advantage. However, most interviewees do not plan to use AI because their executives do not intend to implement it in their work functions. Therefore, it can be concluded that one of the barriers to AI technology adoption in Thai organizations is the lack of support from upper management.

CHAPTER V
CONCLUSIONS

This chapter will discuss the key factors that affect barriers to adopting Artificial Intelligence technology in large organizations from a mid-management and operational level perspective. In addition, the insights and recommendations for upper management on how to adequately prepare their organization to be ready for AI technology and survive in the digital era will be provided.

5.1 Summary of the Findings

The findings of critical factors that affect barriers to the deployment of AI technology in large enterprises can be summarized based on the UTAUT model in Table 15 below.

Table 5.1 Summary of factors influencing the adoption of AI technology in large organizations

Area of Assessment	Factors affecting barriers to adoption of AI Technology
Facilitating Conditions	Lack of support from upper management, shortage of human capital and finance dedicated to implementing new technologies
Performance Expectancy	Absence of human touch and lack of trust in AI technology
Effort Expectancy	None
Social Influence	Coworker's and upper management's lack of trust in AI, fear of losing jobs, and concern about the expense of implementing AI
Intention to Adopt	Lack of support from upper management

In this research, the four most common themes discussed are lack of support from upper management, lack of trust in AI, lack of resources (human capital and finance) dedicated to implementing new technologies, and concern about the expense for implementing AI from the executives. It is also worth noting that the topic of senior management comes up frequently during the discussion. Therefore, it can be concluded the executives play a significant role in influencing the decision to adopt AI in the organization from the mid-management and operational level employees' perspective.

5.2 Comparison of the Results to the Literature Review Findings

When the answers are compared to the literature review findings, it is clear that they are similar to Tangjai's (2020) and Akarataweewattanathorn's (2020) investigations. Both authors mentioned the high cost of implementation, conservative management, and lack of trust in AI technology as the main barriers to implementing AI technology. A study by Chutijirawong et al. (2020) also concluded that costly infrastructure upgrades, lack of knowledge, and incomplete data are the top challenges in adopting AI technology.

Further examination reveals that three of the four most commonly addressed topics—lack of upper-management support, lack of trust in AI, and concern about the cost of applying AI—are all people-related. The results also align with Chutijirawong et al. (2020), who noticed that the top challenge for digital transformation deployment in Thailand is not about the technical issues but the people issues: lack of expertise, immature digital culture, and organizational silos. A study of Australian enterprises found a similar result, with respondents citing a lack of leadership support as one of the most significant barriers to AI adoption (Alsheiabni et al., 2019).

5.3 Comparison of the Findings Between Public and Private Organizations

When comparing participants who work for public and private organizations, the study finds that their responses are very similar. Nine out of ten interviewees

reported that their organizations had deployed AI to some extent. Regarding how private enterprises adopt AI technology, two participants stated their organizations have successfully deployed AI across all the core business functions and are planning to expand to supporting business functions in the future. Both interviewees indicated that their organizations are prepared for human capital, financing, technical infrastructure, and supportive higher management. They went on to discuss how their enterprises successfully turned into digital organizations by doing the following.

Firstly, their CEOs have a clear vision and strategy for digitally transitioning their businesses. With the top-down approach, they instill the digital culture in every employee and steadily gear their companies towards digital transformation through change management strategy. Most importantly, they have full support from upper management with a dedicated budget and team to deploy AI and other emerging digital technology.

The other four participants working for private firms also confirmed that their workplace had implemented AI technology in a limited scope for core business units, especially marketing. The team primarily utilize AI for digital marketing and sales forecast. Only one participant reported that the company does not deploy AI, and everyone is conducting the tasks by hand, save for a few essential systems in the company.

Similarly, all three public-sector participants stated that their businesses had implemented AI technology, but only to a limited extent for core business divisions because the ROI is easiest to evaluate here. There are three areas that respondents in the public sector provided identical answers when assessing the AI technology adoption: the support from upper management, the executives' opinion towards AI implementation, and the intention to use AI in their work.

For the support from upper management, three participants working in public enterprises reported that they do not receive proper support from upper management to deploy AI technology. In terms of the upper managements' opinion towards AI implementation, all three interviewees answered that their supervisors are indifferent towards the deployment of AI because they are concerned about the ROI. Public organizations do not plan to use AI in every business function because the directors view AI

as costly and risky to execute. Thus, employees in the public sector will not plan to use AI in their jobs due to top management policy.

When examining the result, it is discovered that there is a concern about wasting taxpayer money on expensive projects since it is a public organization. Therefore, the management team must be extremely cautious about how they spend the money, and they must ensure that the initiative will benefit them. Furthermore, public enterprises are subject to more legal restrictions and are prohibited from doing various things compared to private institutions.

5.4 Comparison of the Findings Among the Energy, Financial Services, Consumer, and Healthcare Industry

In this study, six participants are working in the Energy industry, two working in the Financial Services industry, one employed in the Consumer industry, and another working in the Healthcare industry. The results show that only the energy industry has successfully implemented AI technology throughout the organization. The respondents in the Energy industry reported that their organizations have already been implementing AI technology in the core business functions. When examining the extent of the utilization, two out of six interviewees in the Energy industry reported that their organization has successfully deployed AI across the organizations. The other four participants claimed that AI was only used in a limited capacity at their organizations for key business operations such as anticipating fuel or energy demand.

Regarding the Financial Services industry, one respondent stated that AI was only brought to the core business unit for limited application in sales and marketing. Another employee, on the other hand, claimed that the organization does not use AI because of a lack of funds and apprehension about new technologies. As for the Consumer industry, one participant reported that the AI robot is utilized in a hypermarket to engage with customers for marketing and public relations purposes. Unfortunately, due to a lack of funding and support from higher management, it is still limited to main core businesses. Finally, an interviewee in the healthcare industry explained that AI technology is utilized for the marketing team to analyze consumer behavior and forecast sales.

Still, it is not deployed in the team due to its business nature, which requires human interactions.

5.5 Possible Causes of AI Technology Adoption Barriers

The four AI technology adoption barriers discussed in this paper are lack of support from upper management, lack of trust in AI, lack of resources (human capital and finance) dedicated to implementing new technologies, and concern about the expense for implementing AI from the executives. These issues emerge as a result of upper management's lack of a defined digital vision.

If CEOs do not have a clear vision of digital transformation and implementation, businesses will fail to enter the digital era. It's difficult for upper management to fully support the digital transition when the company's goal is unclear. Furthermore, evaluating how the new technology will benefit the company is difficult because no one knows exactly where or how it should be implemented. Since the executives do not know precisely about the cost and benefit of AI technology, they would naturally be hesitant to implement AI in the organization. Thus, there will not be adequate resources dedicated to AI implementation due to the concern about the expense for deployment. Finally, employees' lack of confidence in AI technology may be due to an immature digital culture, which arises from an unclear digital strategy. Staff may not be informed by their CEOs on what artificial intelligence is and how it will affect their work routine. As a result of their lack of digital literacy and fear of change, they are apprehensive about what will happen to their jobs after the deployment and see AI as a threat.

5.6 Recommendation to Overcome Barriers to AI adoption in Large Organizations

For Thai organizations to adequately prepare their organization to be ready for AI technology and survive in the digital era, it needs a solid digital culture, resources readily available for digital transformation and implementation, and digital savvy em-

ployees. First and foremost, the executives must instill the digital culture among themselves. Upper management must be open-minded and realize that digital technology can both help and hinder their enterprises. Then, through training sessions and workshops, the executives must learn about new and emerging technologies such as AI and learn about the costs and benefits. Once they have learned about the latest technology, they can decide and agree on the organization's direction for the digital transformation.

Upper management can foster a digital culture throughout the organization if they have understood new and emerging technology and are committed to providing full support for digital transformation. Therefore, the executives are recommended to establish a team with a budget dedicated to the digital transformation mission. It should consist of multi-disciplinary teams: Human Resources, Finance, IT, and Legal and Compliance.

The Human Resources team would be in charge of training and educating employees about AI and other technologies to develop the organization's human capital to be more digitally savvy. They must also reskill individuals affected by the AI implementation and ensure that as few employees will be laid off as possible. As for the Finance team, they are in charge of ensuring that every project is worth the investment by calculating the ROI and payback period. The IT team will be providing technical advice and support for the employees regarding the usage of AI technology. Lastly, the Legal and Compliance team would ensure that the new technology implemented will be aligned with the company's policy and regulation. Organizations in the public sector would also have to ensure that the new processes adhere to government laws and regulations. This digital transformation team should also have a team sponsor—senior management who regularly communicates with the team and the directors to update and report on the mission's progress.

Noted that there might be employees resistant to changes, thus it is necessary to introduce digital transformation gradually. In the beginning, employees who have been trained in AI technology are required to return to their unit and promote the digital culture and understanding throughout the team by sharing knowledge and providing technical help. They are also encouraged to suggest and construct an AI project to help the unit work more efficiently. Once the digital transformation team receives the project proposal, they can determine the cost and benefit and select the most appropriate

project to apply AI. For the project selection, it should have a high chance of success and impact the organization. In addition, the team must not overlook the needs of the supporting unit—while their ROI might not be obvious, it is also worth considering how much time and people it would save should the project is deployed.

As the project progresses, more employees will recognize the value of AI and begin to view it favorably. Workers' visions will progressively align with upper management's, enhancing the organization's digital culture. The essential trait for the directors is the growth mindset. They must realize that not every initiative will succeed, but the risk has already been carefully weighed. If the project fails, the team should investigate and keep a detailed record of what went wrong so that the same error is not made again.

5.7 Limitations and Suggestions for Future Research

The participant base should be expanded to verify the findings to reflect the general population's opinion for future research. The research area can potentially be expanded to include additional countries and updated in the post-pandemic world to investigate the extent to which Artificial Intelligence technology is used in each region during and after the COVID-19 pandemic. Furthermore, while this study focused solely on large organizations, a more in-depth examination of small and medium-sized enterprises (SMEs) and start-up businesses can be conducted to discover if they face the same problems as large corporations. As for the business industries, only the Energy, Financial Services, Consumer, and Healthcare sectors were addressed. Other areas such as IT and telecommunications should be investigated further since Chutijirawong et al. (2020) recognized them as having a greater rate of AI technology adoption. In addition, industries such as Agriculture and Manufacturing should be examined since they were not covered in this study.

REFERENCES

Adams, W. C. (2015). Conducting Semi-Structured Interviews. Handbook of Practical Program Evaluation, 492–505. https://doi.org/10.1002/9781119171386.ch19

Akarataweewattanathorn, S. (2020). Artificial Intelligence Innovation with Recruitment. CMMU Digital Archive. https://archive.cm.mahidol.ac.th/handle/123456789/3777.

Alsheiabni, S., Cheung, Y., & Messom, C. (2019). Factors inhibiting the adoption of artificial intelligence at organizational-level: a preliminary investigation. In M. Santana, & R. Montealegre (Eds.), AMCIS 2019 Proceedings [2] Association for Information Systems. https://aisel.aisnet.org/amcis2019/adoption_diffusion_IT/adoption_diffusion_IT/2/

Chatti, H., & Hadoussa, S. (2021). Factors Affecting the Adoption of E-Learning Technology by Students during the COVID-19 Quarantine Period: The Application of the UTAUT Model. Engineering, Technology & Applied Science Research, 11(2). https://doi.org/10.48084/etasr.3985

Chutijirawong, N., Hora, V., Bunsupaporn, K., Bunyalug, C., & Satityathiwat, S. (2020). The Thailand Digital Transformation Survey Report 2020: Deloitte Thailand: Perspective. Deloitte Thailand. https://www2.deloitte.com/th/en/pages/technology/articles/the-thailand-digital-transformation-survey-report-2020.html.

Davenport, T. H., & Ronanki, R. (2019). 3 Things AI Can Already Do for Your Company. Harvard Business Review. https://hbr.org/2018/01/artificial-intelligence-for-the-real-world.

REFERENCES (cont.)

Kettunen, E., Kemppainen, T., Lievonen, M., Makkonen, M., Frank, L., & Kari, T. (2020). Identifying the Ideal Types of Online Shoppers. International Journal of E-Services and Mobile Applications, 12(2), 59–78. https://doi.org/10.4018/ijesma.2020040104

Marchewka, J. T., & Kostiwa, K. (2007). An Application of the UTAUT Model for Understanding Student Perceptions Using Course Management Software. Communications of the IIMA, 7(2). https://scholarworks.lib.csusb.edu/ciima/vol7/iss2/10

Ngotngamwong, R. (2020). Artificial Intelligence and Its Impacts on Employability. Human Behavior, Development and Society, 22(2). https://so01.tci-thaijo.org/index.php/hbds/article/view/230753.

Pongsiri, N. (2003). Public-Private Partnerships in Thailand: A Case Study of the Electric Utility Industry. Public Policy and Administration, 18(3), 69–90. https://doi.org/10.1177/095207670301800306

Radhakrishnan, J., & Chattopadhyay, M. (2020). Determinants and Barriers of Artificial Intelligence Adoption – A Literature Review. Re-Imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation, 89–99. https://doi.org/10.1007/978-3-030-64849-7_9

Tangjai, C. (2020). Factors that Affect the Barrier to Entry of Radiology AI in Thai Medical Services Institutes. CMMU Digital Archive. https://archive.cm.mahidol.ac.th/handle/123456789/3691.

van Duin, S., & Bakhshi, N. (2020). Part 1: Artificial Intelligence Defined. Deloitte Sweden. https://www2.deloitte.com/se/sv/pages/technology/articles/part1-artificial-intelligence-defined.html