

Artificial Intelligence and Its Impacts on Employability

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Abstract

The purpose of this qualitative study was to explore the amount of artificial intelligence that was used in seven selected businesses in Thailand and its impacts on employability. In-depth interviews were conducted with each participant that lasted between 30 to 45 minutes. The use of AI varied across the various businesses from as high as 40% to 0%. Thailand is slower than some other nations in switching to AI, but that will change in a few years' time as some business were reported to be in the process of AI development. A few other businesses were less enthusiastic in AI adoption because their businesses are still highly reliant on humans. The high costs of embracing AI and translating software programs into the Thai language made others reluctant to make the shift. Current job displacements have been low, but the numbers are expected to run to high levels in five to 10 years once AI is widely employed. The younger generation of employees were more accepting and less resistant to AI, while the opposite was true of the older generations. Many participants also mentioned the necessity of upskilling to survive and maintain future employability.

Keywords: *AI, Artificial Intelligence, employment, future employability, Thailand*

Introduction

The advancement and integration of artificial intelligence (AI) in cognitive areas has threatened human employment significantly (Thomas, 2018). Starting slow, AI had been advancing rapidly these past few years, overcoming many obstacles, and has proved to be more capable and more intelligent than humans in some areas (Bolton et al., 2018; Dickson, 2017; Noyes, 2016). Although organizations have reported higher efficiencies through AI (Crosman, 2017; Hawser, 2019), these AI disruptions come at a high cost, replacing humans (Tyagi, 2017). There is a predicted disappearance of up to five million human jobs by 2021 (Noyes, 2016). The algorithms used in AI have already invaded the skilled professional sector with software programs replacing "loan officers, attorneys, and sports and business journalists" (Brown, 2016). Currently labeled as the "industry 4.0" or the fourth industrial revolution, the impacts of AI, robotics, and big data (Garwood, 2018; Hawser, 2019; Morikawa, 2017) are definitely tremendous and unequal to prior revolutions, bringing along with it new changes in the future world of work (Garwood, 2018; Hawser, 2019). History shows that "many significant innovations in the past have been associated with a transition period of temporary job loss, followed by recovery, then business transformation and AI will likely follow this route" (Doupnik, 2018, p. 12). The purpose of this study was to explore the amount of AI usage in seven selected businesses in Thailand and the effect of AI changes on employability. The results of this study would be an excellent addition to the scant amount of literature available on the practice of AI in Thailand. This is especially so as Thailand is currently in its early stages of employing AI.

Literature Review

Artificial Intelligence (AI)

Artificial Intelligence (AI), also known as "machine intelligence," began around 2010 (Rotman, 2017), and is assuming a growing role (Lee, 2017) with companies expressing increasing needs for AI services (Bolton et al., 2018). Human and artificial intelligence, when combined together, complement each other (Dickson, 2017; Doupnik, 2018; Garwood, 2018), and improve organizational efficiency (Bolton et al., 2018). Aside from performing more than humans, AI is also capable of performing things humans are incapable of (Garwood, 2018). The tremendous investments in AI-related technologies are mind-boggling with more than \$1.5 billion already spent by financial firms and up to a predicted annual amount of \$2.8 billion being invested by 2021 (Crosman, 2017). With the vast usage of AI in

many areas, its impacts will no longer be contained within an organization, but humans will find AI as part of their daily lives (Herold, 2017; Thomas, 2018). It has been predicted that “artificial intelligence will do more good than harm” for not only individuals but also the economy and society (Lee, 2017; Lev-ram, 2017, p. 28) and its usage will double the annual economic growth in developed countries by 2035 (Ketter, 2017).

Russian President Vladimir Putin stated that “Whoever becomes the leader in this sphere (AI) will become the ruler of this world.” The competition amongst countries has begun with the United States, the United Kingdom, and Germany, while China, Japan, Singapore, South Korea, and Taiwan are funding AI research together in order to compete (Buaubol et al., 2018, p. 7). Singapore is the Asia Pacific leader in overall AI readiness as it is most progressive in its approaches to AI, followed by Hong Kong and India, while Thailand ranks first in consumer readiness. The adoption of AI varies across the region and governments are urged to drive AI readiness in their countries (“Singapore Ranks #1”, 2019). With this being the case, Thailand needs to undergo major transformations by reforming its educational system, providing a better social welfare system, preparing the government sector for the transformation and, most importantly, developing an improved development model (Buaubol et al., 2018).

In comparison with other countries, Thai companies are relatively late in their switch to AI and are expected to face challenging times ahead in meeting new customers’ lifestyle changes with the internet shopping explosion (Nguyen, 2018). Thailand’s Board of Investment has demonstrated its support for AI investments by offering more attractive and higher investment incentives to targeted industries to increase production efficiency with the hopes of gaining competitive advantage. This is a potential driver in future economic growth (PR Newswire, 2019). The Thai automotive sector has experienced an AI disruption in the form of autonomous vehicles, rendering previous manufacturing processes obsolete and auto companies might have to consolidate or face failure (Petcharit et al., 2020). There are significant AI opportunities in the Thai agricultural sector in the form of self-driving farm vehicles and in farming processes such as sorting and grading its products (PR Newswire, 2019). AI also plays an integral role in the social issue in Thailand as demonstrated by the “AI for Road Safety” project, a joint collaboration of PTT Global Chemical Public Company Limited (GC), Frontis, and Microsoft to reduce Thailand’s road accidents (Thongnab, 2018). Mass customization will dictate future production that requires Thai factories to be adaptable and driven by AI. Moreover, both AI and robotics technology would be essential for expansion purposes (PR Newswire, 2019). Thailand is still in its infancy stage in AI-based trading (Nguyen, 2019) and Siam Commercial Bank (SCB), the current leader in technology, is striving to compete successfully both domestically and regionally by developing and updating its technology infrastructure (Nguyen, 2018). It soon will be rolling out its robo-adviser service developed by its AI unit (Nguyen, 2018). In its attempts to lure new while retaining current customers, its subsidiary, SCB Assessment Management Co., will use AI to help customers identify investments (Nguyen, 2019).

The Usefulness of AI

Artificial Intelligence has been shown to be extremely useful and it has in some cases endowed humans with superpowers in getting tasks done faster (Boulton, 2018). Humans can refocus on things they are good at and are freed from tasks they might not enjoy or are not specialize in (Noyes, 2016). Moreover, cost savings gained from AI, due to the elimination of routine (repetitive) jobs, will be used to retrain staff in areas not covered by AI and in order to provide better customer service (Doupnik, 2018). Systems have been designed to provide improvement in the detection of fraudulent transactions and messages (Lee, 2017), while the finance sector has been experiencing huge gains in efficiency with AI’s abilities in handwriting and image recognition, as well as robotic process automation (Crosman, 2017). AI has been successful in removing bias in the recruiting process and is more precise in matching applicants with recruitment needs (“HR Meets AI,” 2017). It has eased the long-time problem experienced due to shortages of medical physicians and healthcare personnel by making healthcare more accessible to more people, particularly in developed countries. With AI

technology, more people can be trained to work alongside AI to provide the type of healthcare that is limited currently by the availability of highly trained physicians (Andra, 2017; Dickson, 2017; Hawser, 2019).

Employment. AI's ability to outperform and replace routine work done by humans (Jesuthasan, 2017; Lee, 2019) is causing a tremendous disruption in employment (Dickson, 2017; Thomas, 2018). This will result in the disruption of the livelihood of millions of people, and destroy jobs (Lee, 2017; Noyes, 2016; Rotman, 2017). This will cause large job displacements of both white and blue color workers in a decade's time (Hawser, 2019; Lee, 2019). The good news is that not all jobs will be threatened and replaced by AI (Lee, 2019). With AI taking over jobs gradually, and eventually becoming widespread, this becomes a societal problem that needs to be addressed (Crosman, 2017). It is predicted to further increase the existing income inequality (Rotman, 2017). While some jobs will decline in significance, others would disappear, some might grow in importance, others might change, while some will be created (Garwood, 2018; Hawser, 2019). In a study conducted in the United Kingdom back in 2016, up to 42% believed that their jobs would be replaced by robots by 2066. About 19% of the younger generation (18 to 24-year-old) are constantly worried about this take-over, while the rest (45 to 54-year-old) had no worries about it (Saran, 2017). Millennials find AI invasion a big threat to their careers, but they have been reported to be optimistic in their abilities to adapt (Canada Newswire, 2019). It is comforting to know that not all jobs will be completely automated, and most job losses are not the result of machines replacing humans, but of "humans using machines to replace other humans" (Andra, 2017, p. 40).

Many fear mass unemployment and the potential social disorder that accompanies the displacement of humans with AI (Crosman, 2017; Hawser, 2019). Those most disadvantaged by automation are the less educated employees but the advancement and AI invasion in the workplace will also displace highly educated professions (Atkinson, 2017; Rotman, 2017). The hardest hit will be the unskilled job category (Grose, 2017; Saran, 2017) and entry-level jobs in fast-food restaurants will be hit hard as robots take over jobs (e.g., CaliBurger Flippy; Crosman, 2017). Many highly-trained professional jobs such as in medicine, law, and IT, would be greatly affected by 2022 ("How AI Powered Robots," 2017). Some professions, such as CEOs and doctors, will find that the nature of their work will change as AI frees them to work on more important, productive, and interesting tasks, while AI could help them to fulfill more mundane tasks (Atkinson, 2017). The finance sector will be hit hard, Wall Street included, as expert systems gradually take over humans in performing error-free and more effective processing jobs, securities trading, sales, loans, insurance claims, and analytical jobs ("AI? It's Not Sci-Fi Anymore," 2017; Atkinson, 2017; Crosman, 2017). The banking industry has been greatly impacted, where massive transformations due to automation and AI have resulted in cutbacks and replacements in the back office (Hadley, 2017; Hawser, 2019). This has also been true in other industries, such as in recruitment (Hadley, 2017). As for the accounting field, entry-jobs are at risk, and the Big Four firms are looking with for employees who have analytical, computer programming, and coding skills (Zhang et al., 2018). The new innovation of driverless vehicles will be a big disruption that, in the future, would replace cab, bus, and truck drivers, and those in this business will find themselves without a job (Andra, 2017; Atkinson, 2017; Grose, 2017; Ketter, 2017; Noyes, 2016). Other high-skilled industries are not free from this disruption, such as law and healthcare as AI is capable of doing a better job in providing diagnostics in many instances (Hadley, 2017). As for those in the middle, such as paralegals, cashiers, and telemarketers, there is a possibility that their jobs may disappear along with pilots and lawyers (Grose, 2017).

Jobs that would be safe from AI include those demanding creativity, strong social interaction, novelty, complex and strategic jobs, compassion, and those involving fine and specific motor skills (Lee, 2019; White, 2016). Top, well-paid professions that are immune to the perils of AI take-over include "engineers, scientists, CEOs, creative types and people with the tech savvy to work with thinking machines" (Grose, 2017, p. 31). Other safer jobs include clergy, choreographers, kindergarten and elementary school teachers, and mental health care employees (White, 2016).

Although there are long-term benefits attached with AI innovations, the short-term downside effects are employee layoffs (Grose, 2017). This job take-over will not be limited to just developed economies (Hawser, 2019), but it will be a global phenomenon with many jobs losses due to the introduction of AI (Andra, 2017; Nott, 2018). According to the study by Gartner experts, 2.3 million jobs will be created by 2020, while 1.8 million will be wiped out as a result of AI (Doupnik, 2018). It had also been predicted that up to 230,000 people in the capital markets will be affected worldwide by AI technology by the year 2025 (Crosman, 2017).

New Job Creation

Past history clearly indicates that previous disruptions have resulted in the creation of new kinds of jobs and opportunities. Although AI will displace jobs, ultimately the fears associated with this take-over are unnecessary (“Robots Will Create More Jobs,” 2017), as there will be a creation of a new range of job opportunities (Daugherty & Wilson, 2018; Dickson, 2017; Doupnik, 2018; Hawser, 2019; Ketter, 2017; Rotman, 2017) that combine human creativity and innovation (Daugherty & Wilson, 2018), resulting in greater efficiency (Rotman, 2017). The number of new jobs created as a result of AI will be greater than the number of eradicated jobs. It has been predicted that more than two million jobs will be created by 2025 (Robots Will Create More Jobs,” 2017). Jobs will not be completely taken over by robots and there will be a greater demand for tech talent (Dickson, 2017). An entirely new job market will be created by smart machines (Brown, 2016) and new jobs and careers would be created to replace the ones that have evaporated (Grose, 2017). As AI eliminates jobs, AI-related jobs will surface in the areas of AI implementation and maintenance, such as AI supporting value-added resellers and consultants (Crosman, 2017). It had been reported that the number of new jobs created as a result of AI will be greater than the number of eradicated jobs (“Robots Will Create More Jobs,” 2017). However, there is very little optimism in the new jobs that will emerge (Andra, 2017). Others, such as Grose (2017), have predicted that the number of job creation would be less than the ones crushed in the next 10 years.

Objectives and Research Questions

Thailand is lagging behind other countries in the field of AI and the amount of literature available on this topic is minimal. With this in mind, the objective of this paper was to explore the current extent of AI usage in seven different Thai businesses and how that would change in years to come, with a focus on its impacts on employability. The results of the study would also be a contribution to the scant literature on AI in Thailand.

Four research questions guided this study:

1. How much is AI currently used and how much has it taken over jobs in the selected organizations?
2. Who has been affected by AI, and how do selected employees feel towards these changes?
3. What is the amount of resistance to the introduction of AI in the selected organizations?
4. What is the future of AI in the selected organizations, five to 10 years from now?

Methodology

The research methodology employed for this research study was a qualitative and exploratory one that relied on a convenience sampling method. As this study was relatively new and exploratory, the most appropriate methodology selected for the study was the narrative analysis employing in-depth interviews. Seven different businesses were involved in this study and a participant from each of these businesses engaged in a 30–45-minute interview at their offices or over a business meal. Each of these participants was in a management position in their respective organization. The interview protocol included four parts (total of 14 open-ended questions): Part 1: Demographics (4 questions); Part 2: AI Usage in the Organization and the Readiness for Change (5 questions); Part 3: The Feelings towards AI (3 questions); and Part 4: AI in Five to 10 Years (2 questions).

Results

Demographics

A total of seven persons participated in this qualitative study (Table 1) and they represented the top-tier in each of their respective businesses in Thailand: Airlines, Auditing & Consulting, Banking, Finance & Securities, Higher Education, Insurance, and Textbook Publishing,

Table 1. Demographics

No.	Industry	Number of Employees		Position	Gender	Age Range	Degree
		Local	Worldwide				
1	Airline	22,000	-	Captain	Male	51–55	Bachelor
2	Auditing & Consulting	2,000	276,005	Director	Female	36–40	Bachelor
3	Banking	20,000	-	AVP - Computer services	Male	41–45	Master
4	Finance	550	27,175	Chief Information Officer	Male	41–45	Master
5	Higher Education	12,000	-	Professor	Female	51–55	Doctorate
6	Insurance	350	40,000	Senior Executive VP	Male	56–60	Master
7	Textbook Publishing	12	5,000	Assistant Sales Manager	Female	41–45	Bachelor

Theme 1: Current AI Usage

The amount of AI usage varied across the various businesses. The participating textbook publishing business was an international organization that had reported the highest AI usage level in this study. With reference to her organization, the participant mentioned that AI was expected to have a larger impact on operations in other countries than in Thailand. AI had been used in developing products to meet the digital trend, such as the customer database system and the marketing platform that provided updated information to better facilitate productive work. The Banking participant reported an extremely low 10% AI usage, as it was still in the process of developing AI banking services for future launching. As for the Auditing and Consulting business, the participant said that:

We are still in the early stages of AI and there is still a lot of research that still needs to be done in the accounting field such as Accounting Standards. Complex problems, how they are analyzed and interpreted, and the principles used are also entered into the computer system. A lot of research, both external and internal are currently done to feed data into the computer. We currently have a search engine, but it would be much more developed in the future when AI completely kicks in and takes over.

The Airline business reported an AI usage of 30% in its flight operations and the marketing database. The insurance business that participated in the study reported no AI usage as people were still significant in the insurance business in driving sales. Only 20% was used in the participating Finance & Securities business. In fact, AI was hardly used internally as it had outsourced its tasks to vendors who specialize in AI cyber security monitoring. The Higher Education participant, who represented the public university, stated that there was no current AI usage as “the university is very traditional and although the amount of automation has increased, the amount of AI has not yet been employed. Moreover, AI is expensive, and the university does not have the funds to support that.”

Theme 2: The Victims of AI

Some departments in the Textbook Publishing business had been discontinued in some countries and the functions were centrally operated in a specific country in a region. Aside from that, the

number of persons needed to perform in a department had also been reduced, such as a reduction from 10 to four editors for the entire region. Other departments, such as the IT and inventory, had been outsourced to more efficient third parties. Everyone was affected, with some departments having been eliminated. The number of employees had been reduced due to restructuring. As for the Banking business, as of the interview date, the adoption of less than 1% of technology had caused a closure of approximately 8% of its total branches, with the shift to conducting online financial transactions. The main future victims of AI would be those working in stand-alone branches, as they will gradually close down and employees would be laid off. The ones with job security would be those employees working in shopping malls. Although AI has not had an impact on employment in Auditing and Consulting, it had been predicted that the headcount would reduce greatly, and new graduate hires would decrease by 66% in five to eight years from now. Many would be affected, particularly those who are engaged in routine work and paper-based jobs. Despite the 30% AI usage in Airlines, the participant said that "AI cannot take over humans as humans are the main component. AI is used in the management of the airline system as the data can be used in predictions to increase to its optimal performance, but AI cannot think." Non-skilled employees would be most affected as they would eventually lose their jobs to AI. AI had not taken over jobs in Finance and Securities and the participant stated that "AI and robots will not replace people." No parties have been affected yet as AI had not entered into the company. In the field of Higher Education, the participant said that AI had not taken over any jobs. In fact, it was suggested that there would be no terminations, as it was a public educational system that had a no termination policy. There would just be no more hiring as there had been a big decrease in student enrolment and a reduced government budget.

As AI gradually phases in, new graduates will have a more difficult time getting a job, particularly if they do not have unique or special skills. Many existing jobs will be affected and disappear altogether such as accounting, administrative staff, finance, front office jobs, unskilled jobs, and routine jobs. Employees will just have to try to adapt to technology all the time to maintain their employability. Those who do not embrace technology will have to leave, particularly the older ones.

Theme 3: Current Employees' Feelings towards AI

Many participants stated that the general employees' feelings to AI were dependent largely on the generation and past experiences with AI. The new generation was reported to have positive feelings towards AI, as they see them as tools that would be there to help them in getting their jobs done. Aside from that, the younger generation with the tendency to job hop, feel that their jobs are only temporary and do not mind the AI revolution. What they value is not the position or occupation as they have a more entrepreneurial spirit and could resort to selling things on the internet if things did not work out for them in the workplace. This coincides with the literature that states that despite the AI threat, Millennials were confident in their ability to adapt (Canada Newswire, 2019). Those who have the most to lose and have the greatest fears are the older generation, as they felt that "AI was bothersome" and had feelings of insecurity as the "tools and trends would take over their jobs." Those who are open to AI see it as a valuable tool to help them work better and those with positive experiences towards AI view it in a more positive manner, while those who have had bad prior AI experiences would be more likely to oppose its usage, become fearful, be closed to the AI idea, and resist by not adapting.

The fear in the Banking business was strong as they "were afraid of the future because AI was fast approaching and when it arrives, it would mean that staff would no longer be needed. Everyone is expecting to be laid off but with a good severance package." The unskilled and those who do not develop their skills to cope with new technology would be the ones who would be directly affected by AI. Although some employees had expressed their concerns about AI, Participant 6 (Insurance business) mentioned that it "would be necessary to communicate that AI is impacting the entire world and so, employees would also have to adapt and get along with it." Employees who had been impacted by automation have expressed their fears when it had been first introduced because they did not understand and felt threatened as AI had taken over some job. They were also said to be "still adjusting

to robotic process automation which as the pre-requisite to AI introduction in the future” (Participant 4, Finance and Securities business).

Theme 4: Readiness to Change and AI Preparedness

The readiness to change and AI preparedness were at different levels. Organizations that were expecting the changes that would come with AI had higher levels of readiness to change while others took it rather badly. The banking employees were expecting a big transformation to happen and so they were accepting of it and everyone was reported to be eagerly waiting for the big severance pay package. Airline employees had to adapt to AI as the airlines is part of the Star Alliance and adapting to AI usage was mandatory to remain competitive and aligned with other Star Alliance airlines. The younger generation had adapted well, while the older generations, who were not as tech savvy, had a more difficult time. Finance and Securities employees would be equipped with the necessary know-how to transition when AI invades the workplace in the future, as professionals and consultants would be engaged to conduct the necessary training sessions. They are currently gradually adapting to the robotic automation and the next step forward would be the introduction of AI. As it is the norm, employees who encounter difficulties of adapting would leave and this was true in the Textbook Publishing business. A small percentage (3%), who could not accept the change, left the firm even though the organization had prepared them for the change by creating the awareness for change, and made efforts directed at changing the employees’ mindset by providing training sessions during a very reasonable transition timeframe of three years. Moreover, incentives were also used to reward employee performance that aligned with organizational goals.

Theme 5: Resistance to Change

As Banking employees were extremely accepting of change because of the impending large severance package, there was basically no reported resistance to change. Participant 2 (Auditing and Consulting) stated that “as the firm is an international and global one, all its branches have to comply once the direction comes from the parent firm. There would be no resistance but only resignations.” The amount of resistance in Airlines was more evident with high resistance coming from two groups: Unskilled and older employees. The older employees would not adapt to new requirements and, as they normally held senior positions, and were said to be “powerful and nothing much could be done, and they couldn’t be terminated either.” When organizations handle change well, the amount of resistance will be low. The Textbook Publisher was headed in the right direction as:

The resistance was minimized by conducting training sessions and seminars to create awareness and change the mindset of its employees. Moreover, those sessions provided an opportunity for the management to listen to employees’ problems, and they tried to solve, answer, and clarify them. Those who could not accept the changes merely left the organization, while the silent resisters; usually the seniors, would just stick to their own ways of doing things (Participant 7).

Theme 6: AI in Five to Ten Years

The anticipated usage of AI in the next five to 10 years is detailed in Table 2 (please see following page). The table records the generalized reflections of the interviewees.

Discussion

Theme 1: Current AI Usage and Theme 6: AI in Five to Ten Years

The current AI usage in the seven participating businesses in Thailand was at relatively low levels. The textbook publishing business topped the list, while both the Banking and Auditing and Consulting businesses are currently developing AI for future usage. AI could be an outsourced service, as illustrated in the case of the Finance and Securities business, where external experts in the field were employed instead of developing AI from within the business. This was very different when compared to developed countries, where AI plays a tremendous part in the finance industry (Crosman, 2017).

However, that could be because AI is still in its early stages in the Finance and Securities business in Thailand, as stated by Participant 4 (Finance & Securities). A future shift is expected towards the consulting business with AI backing in years to come, which will then be aligned with the literature (“AI? It’s not Sci-Fi Anymore,” 2017; Atkinson, 2017; Crosman, 2017). The nature of businesses also had an impact on AI employment, as reflected in the Insurance and Higher Education businesses. Conducting insurance sales is not an AI specialty, while no funding and traditionalism in the public Higher Education organization would be hindrances to embracing AI.

Table 2. Prediction of AI Usage in the Next 10 Years

Business	AI in Five to 10 Years
1. Airlines	The increase in AI usage would result in a decreased demand for people but this increased collaboration of humans and technology will increase productivity.
2. Auditing and Consulting	The technical team will be replaced by AI, approximately 50% of the tax and legal advisory team will disappear, and 30% of the auditing jobs will disappear.
3. Banking	All stand-alone branches will be closed and only mall-branches will be open for loans and wealth-management departments. It is expected that 50% will lose their jobs (front office), while back-office staff will be able to retain their jobs.
4. Finance and Securities	There would be a move toward the consulting business with AI working behind the scenes, and humans on the front-line, consulting customers with AI- to support consultations.
5. Higher Education	AI will not completely take over jobs, as the public university system has a very conservative HR system that disallows AI from removing current jobs. Moreover, there may be laws to protect the organization from AI.
6. Insurance	The “push strategy” is used in this business and people are needed to create a need to purchase insurance through personal contacts, which AI cannot accomplish. AI can handle certain operations but that would be limited as many operations need to be handled by humans, such as handling insurance claims which requires intuition in decision making. AI software are usually in English. The programs would not only need to be translated into Thai, but other cultural factors would need to be factored in.
7. Textbook Publishing	Big downsizing in worldwide offices will occur with the elimination of offices in some countries, particularly those that use English. The surviving offices will be those that use their own native tongue in everyday business operations.

Things would be very different once AI is in place five to 10 years from now. Downsizing and restructuring would be evident (Lee, 2017), requiring revised business strategies needing continuous adjustments (“How AI Powered Robots,” 2017). Human and technology collaborations would increase, resulting in higher productivity at the expense of massive layoffs, lowered recruitment, and huge social problems in the next two to three decades (Brown, 2016). It was also clearly evident in the study that, although some jobs would disappear, new jobs would be created, and there would be shifts in businesses (Garwood, 2018; Hawser, 2019). Language is an important determinant of the future as countries using English will find themselves using more AI due to AI software availability in English. Non-English speaking countries will be a little slower in catching up. As stated by a participant, AI is costly, and therefore, not necessarily embraced by every single business.

Theme 2: The Victims of AI

The entry of AI in the Textbook business had caused a huge job displacement (Hawser, 2019; Lee, 2019) through a tremendous restructuring of the organization and it is ahead of other businesses in

this manner, with other businesses following suit once AI kicks into full utilization in the years to come. Many employees are currently still unaffected as AI had not invaded the workplace, but a few have found themselves laid off, thus creating a wave of what the others would potentially experience in the near future. Those holding jobs that can be automated or taken over by AI stand to lose the most, and this includes not only the unskilled but professionals as well, which aligns with the literature (Atkinson, 2017; Rotman, 2017). The massive potential layoff in the banking industry anticipated in Thailand is similar to the large layoffs in the banking industry experienced elsewhere (Hadley, 2017; Hawser, 2019). The potential banking victims of AI, who know that they would be laid off with a huge compensation package, are fully prepared and do not show resistance towards this impending change. Others were more optimistic, viewing the collaboration of humans and technology in achieving higher productivity levels that creates synergy (Andra, 2017). There is an assurance that terminations would never happen in some sectors, as in the case of the Higher Education business (public), since there are regulations against terminations and potential future laws issued to protect jobs. This ostensibly provides them with a safety net and is similarly to the literature on Japanese jobs, particularly semi-skilled or unskilled, that are relatively safe under Japan's protectionism policy that places an emphasis on full-employment. Its factories may be fully automated, but this has no toll on human employability, unlike the West, where humans are gradually replaced by AI (Simons, 2017). France also has taken the lead in protecting workers who have been laid off as a result of AI as it considers passing a legislation that would grant them consultant and compensation rights. To help slow down the pace of social disruption caused by AI, some have proposed that taxes be imposed on AI usage (Barrow & Olaye, 2017). The threat of AI in the Airlines business, however, is minimal as "AI cannot take over humans as humans are the main component" in the airline business (Participant 1). This is a good example of a service industry that is still highly reliant on humans to function, but this might not hold true in years to come if AI finds a way into the airline industry. Labor demand will decrease and the recruitment of new employees, particularly future university graduates would be at much lower levels once AI is in place (Participants 1 and 2). There will be winners, losers, and higher levels of job turbulence in the upcoming years (Grose, 2017).

Themes 3 to 5: Current Employees' Feelings towards AI; Readiness to Change and AI Preparedness; and Resistance to Change

One's generation, tech savviness, and experiences with AI were the main determinants of how an employee would feel towards AI. The younger generations, Gen Yers and Gen Zers, who are more technologically prone and are more exposed to AI, have a much more positive and enthusiastic perspective of AI as they see AI as a tool, rather than a threat. Gen Xers, on the other hand, depending on where they stand, will determine how they feel and view AI. Those who are open-minded, flexible, adaptive, and try to upgrade themselves and bear a positive attitude towards AI, will fare well. On the other hand, older generation, the Baby Boomers have the most difficult time as they may view AI as being "bothersome," with the fear that their jobs would be replaced by AI, and therefore, their feelings would be much more negative. This was in contrast with the literature that stated that the younger generation were more worried compared to the older generation (Saran, 2017).

The readiness and AI preparedness are very much aligned with the attitude of the employees as well as the organization's significant role in bringing about the transition and empowerment (Lee, 2017). One way to combat this AI takeover and keep their jobs is to embrace it by learning how to use it as a tool, and work alongside it to improve their performances to survive (AI? It's not Sci-Fi Anymore, 2017). Organizations that communicate well and provide training sessions contribute to increase the levels of employee readiness to change and prepared them better for working with AI. Employees need retraining and assistance to cope with drastic changes brought in by AI (Boulton, 2018; Ketter, 2017; Lee, 2017). Not everyone is accepting of AI, and these employees are the ones who would leave the organization.

Resistance to change is normal and at varies at different levels in any organization. Creating the awareness through education and effective communication are essential in reducing this resistance

(Palmer et al., 2017). A good example was the case of the banking business. The employees were aware of the upcoming change and they were accepting of it because the management had communicated effectively the change that was to come and informed them of the large severance package that they were to receive as a result of it. The result was no resistance but only waiting for that day to arrive. The textbook publisher also handled the change extremely well, and the result was either resignations or silent resisters who were usually the seniors. Other businesses would not be as fortunate as they may have to comply with whatever orders come from the headquarters that would apply to all its worldwide branches and it would be a matter of either comply or leave. As in the case of the airline business, that is locally owned, the resistance displayed by the unskilled would probably be ignored, but the resistance from the powerful senior management would come in the form of silent resisters who may get away without adhering to the new requirements. This is an indication that resistance to change is also affected by one's position and authority in an organization, as well as when one works for a branch office that does not have a say when the orders come from the headquarters.

Conclusions

It was interesting study that each business reported different angles and approaches to AI and the changes impacting employability, thus adding invaluable insights to this study. For instance, being locally owned or foreign owned had different percussions, and one that was operated under the government, and an organization that had powerful senior resisters at the hierarchy were indications that AI and its impacts would definitely not be linear. There were a few similarities, but also interesting differences that had been outlined in the results of the study. The results of the study align with the literature that stated that Thailand is much slower in switching to AI (Nguyen, 2018). Although the amount of AI usage was still minimal in the seven businesses in this study, this is bound to change in the future. AI is and will continue to bring about a tremendous revolution in the industry and business (Andra, 2017). As AI is not cheap and the documentation needs to be translated into the Thai language, which might not be economically beneficial, the amount of AI that will be employed in Thailand would vary across different types of businesses and display different timelines within the country. This means that the impact on unemployment would also be highly dependent on this. Organizations need to be proactive to support employees through the transition and to keep them to in pace with this new dynamic emergent revolution (Thomas, 2018).

The government and businesses need to work together in coming up with a contingency plan for future scenarios, both predictable and unpredictable (Hadley, 2017), as these AI-induced changes would have a tremendous impact on society (Brown, 2016). To maintain one's employability for the upcoming future, it is necessary to upskill in order to survive the transitory phase of the adoption of AI (Jahn, 2017, as cited in Nicholas & Sacco, 2018) and be able to cope with the disruptions that come with it (Grose, 2017). Although AI will affect some jobs, "they won't kill off businesses or industries" (Barrow & Olaye, 2017, p. 20). A 2017 survey reported that AI will take over jobs in the next five years in Asia-Pacific while 6.6 million employees will find their jobs redundant in the six largest ASEAN Countries of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, by the year 2028 as a result of robotic automation and AI adoption (Hawser, 2019). This increases the risk of further unemployment in these developing countries, while other arguments were for new technological product and service innovations that could lead to more employment (Tyagi, 2017).

Limitations and Recommendations for Further Study

The main limitation of this study was the inability to cover more businesses. Recommendations for further research would be to replicate this study in one specific industry involving more competitive businesses, and then replicating it again in about five years.

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