

The Influence of Robotic Process Automation (RPA) towards Employee Acceptance

Dahlia Fernandez, Aini Aman



Abstract: *There are various organizations that have automated the technology used in accounting and financial services to increase productivity and optimize operating costs. Among the automation technology transformations used in accounting and financial services is Robotic Process Automation (RPA). However, not all technological transformations are positive because they may cause fear among employees due to changes in the work process. Hence, the aim of this study is to understand the influence of RPA towards employee acceptance in the finance and accounting unit. This study uses an in-depth case study approach in one of the largest oil and gas company in the world. The result of the study showed that RPA technology has significant influences on employee acceptance. The results are discussed according to five elements which are threatening job opportunities, changes in the scope of work, adaptation to technology, career advancement, work-life balance, and job satisfaction. The results showed that employees must adapt with the changes due to the new technology implementation and embrace it positively because at the end of the day, new automation will always appear. Furthermore, the changes that take place must be openly accepted in order to maintain the reputation of their profession as well as the achievements of the organization.*

Keywords : *Robotic Process Automation, automation technology, finance, accounting, technophobe*

I. INTRODUCTION

Robotic Process Automation (RPA) is a computer software configuration that replaces humans in performing a task [1]. It is also defines as the use of technology that allows employees in a company to configure computer software or 'robots' to capture and interpret existing applications to process transactions, manipulate data, and communicate with other digital systems [2]. It is a set of automation software tools used by firms for repetitive processing and complex (low-end) tasks without any human involvement [3]. RPA is an easy-to-configure system where system users running business operations can perform it without the need for programming and users can be trained to independently automate processes in just a few weeks [4]. The tasks performed by the RPA are usually rule-based, structured, and repetitive. Examples of tasks performed by RPA include data transfer between applications through screen scraping, automated email query processing, and processing of various data from different sources [5].

Individuals who carry out accounting and financial tasks spend a lot of time on repetitive activities and trivial tasks [6]. Examples include entering data, checking bank currency rates on a daily basis, and sending email reminders of outstanding debt payments. In automation for repetitive tasks, these robots have been set up to make decisions based on a set of fixed rules or algorithms. Thus, RPA is one way to solve this problem by freeing human resources from repetitive and tedious tasks [7,8]. However, the implementation of new technologies is not necessarily an appropriate action. This is because investing in the technology may also lead to new problems and greater complexity in the work process. This is because the implementation of new technologies can have a negative impact on the organization due to positions and tasks that have been changed or eliminated [9,10,11]. Employees who have lost a particular position or task, and have been reassigned to another position or task, are more likely to be less productive, which in turn will have an impact on the organization [1]. Based on the above issues, the aim of this paper is to understand the impact of RPA towards the employee acceptance in finance and accounting unit. The remainder of the paper is structured as follows. The next section which is literature review gives the overview of the past literatures on employee acceptance issues of RPA. The research methodology section is then presented, followed by the results section. The final section provides the conclusion and implications of the study.

II. LITERATURE REVIEW

The implementation RPA causes job changes and tasks to be restructure in the organization. Changes in the work process are common and must be faced by all organizations to remain competitive in the market. However, it creates fear among employees [12]. Employees feel scare and find it difficult to learn the use of new technologies. There are employees who are already comfortable with their job position and refuse to make changes to work processes. In addition, there is a possibility of fear of job security when employees feel the possibility of their job being taken over by a robot, which can lead to technological acceptance problems [9]. This causes the problem of acceptance for the newly introduced technology and it should be well resolved by the organization. This is an issue that should be emphasized because it can jeopardize their job opportunities [13]. It should also be acknowledged that there are workers who are technophobes, where they are afraid of the introduction of new technologies in their work environment [14].

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Part of this technological concern is driven by fears of job loss. This should not be ignored as it can be directly linked to employee health [15]. However, technological acceptance and fear of job change can be seen to vary between different countries [16]. To increase acceptance of the APR, effective change management and communication strategies are needed. Many studies underline the importance of not neglecting human resources once robots have been implemented [17,9,10,11]. These studies also emphasize the importance of employee involvement at the beginning of the design and implementation phase to reduce opposition to RPA and the need to apply new knowledge to employees to facilitate coordination of tasks with robots to occur more effectively [4,8,17].

In a case study conducted by Willcocks, Lacity and Craig [1], the organization took an open approach in the RPA-related communication process by creating a newsletter and providing information to employees. They disclosed to their employees what the RPA needs and what are the implementation of the RPA means to them and the organization. As a result, there is a decrease in the resistance rate from what was initially expected. In addition, the robot was also given a name and was accepted as a part of the team members. In conclusion, concerns and objections need to be addressed from the start through transparent communication [18]. Employees now have more value-added services, such as engaging with customer by providing a higher quality of interaction or solutions and also a better decision-making [12,19]. Employees also need to manage unique and more challenging activities as they cannot be processed by RPA [1]. Therefore, this provides an opportunity for employees to get higher ranks and positions in an organization more quickly because they are now involved in the tasks that requires critical skills due removal or reduction of the simple and repetitive tasks [20]. Besides that, studies conducted by Lacity & Willcocks [9] showed that employees feel happier because tedious tasks are now being handled by robots, thus allowing them to focus on tasks that require judgment, empathy, and social interaction. Thus, the use of RPA can have a positive effect on employee satisfaction [19,20]. As a result, this can reduce the turnover rate of employees because employees are not caught doing trivial and tedious tasks [21].

III. METHODOLOGY

Company Slexa (the name has been changed for confidential purpose) is one of the biggest oil and gas companies in the world, was selected as a case study for this research. The study has selected Company Slexa based on purposive sampling which is often used in qualitative research to identify and select the information-rich cases. This involves identification and selection of individuals or organization that are proficient and well-informed with implementation of RPA. Qualitative data is gathered through semi-structured interviews with various respondents that are using the RPA system in the finance and accounting unit. In total, 25 hours of interviews were undertaken with 14 respondents. This is shown in Table 1. Each interview has been recorded and copied verbatim and is recorded according to the category as in the framework as a guide to analysis on the influence of

RPA [22]. After the transcription process is completed, researchers identified the issues, translations and identified themes continuously by repeatedly reading the transcripts. The names of the respondents have been changed for the purpose of confidentiality.

Table- I: List of Respondents

Name	Interview Sessions	
	Frequency	Duration (Hour)
Respondent 1	1	1
Respondent 2	2	3
Respondent 3	1	2
Respondent 4	2	4
Respondent 5	1	2
Respondent 6	1	2
Respondent 7	1	1
Respondent 8	1	2
Respondent 9	1	1.5
Respondent 10	1	1
Respondent 11	1	1
Respondent 12	1	1.5
Respondent 13	1	1.5
Respondent 14	1	1.5
Total		25 Hours

Source: Author

IV. RESULTS

The RPA implementation creates fear in individuals within the finance and accounting profession because they fear that their work will be taken over by robots which will make them potentially lose their jobs. In fact, they will feel no longer needed by the organization because they think that their services are no longer important. This was acknowledged by Respondent 2 himself, saying that when robots take over human tasks, then those tasks will be redundant, and eliminated.

“There are activities that will be taken from us and will be replaced with the robots. So many works will be no longer needed, and it will be redundant and eliminated”

(Respondent 2)

However, the elimination of such tasks is important to happen, because it is the main reason why Company Slexa choose to implement the RPA system in its organization, with the aim of automating and taking over some tasks that robots can perform in order to replace human resources. This leaves the organization with no choice but to eliminate the task. Therefore, employees should embrace the change and to look at the more positive side. According to Respondent 9,

“In the past, I was worried when employees would be worried about the fact that their jobs were at risk, and so on. But in fact, I think they are embracing the change because it means their work is more value added and more fun”

(Respondent 9)

Furthermore, there is a negative acceptance among individuals in this profession because they find it difficult to learn on how to use new technologies. Changes in the work process are common and must be faced by all organizations to remain competitive in the market. However, it creates fear in individuals due to changes in the work process that will be faced.



According to Respondent 10,

"... At first the employees have a fear because they are afraid of losing their job. They are also worried because it involves changes in their work process, where they have to learn something new..."

(Respondent 10)

In addition, there are individuals who are already comfortable with their job position and refuse to make changes to the work process. There are also individuals who are nervous and find it difficult to learn using new technology. This is also acknowledged by Respondent 12 that when there is a new technological change, he must learn new skills and knowledge even after struggling to master the skills required for the previous technology and scope of work. This was explained by Respondent 12,

"... I did not like it when it was first introduced. Imagine a graduate who has just graduated and is still new, and when you start working you have to learn new software and then you are sure you have successfully learned it. However, a week later they said "Oh, we have a change". I have wasted a lot of time adjusting and now there is more change? It is very annoying..."

(Respondent 12)

In addition, among the reactions shown by individuals in the accounting and financial units at Company Slexa is that there are individuals who feel anxious when it is announced that there will be a new robotic system to be implemented in this company. This is because they think there will be robots that move and walk with them in this office. This was stated by Respondent 9,

"When we first said that we would have robots here, there was anxiety among the staff because they thought "Oh my God, we will have robots hovering in the office!" and it is not at all. We will put them in the control room, which basically when you go to the control room, you can see the mouse moving as a sign that the robot is working"

(Respondent 9)

However, Respondent 12 admitted that when time passed, he began to adapt to the implementation of the technology because he had no choice but to accept it.

"At first, I did not like it, but I had to get used to it. Yes, I have no other choice"

(Respondent 12)

All of these issues cause the problem of acceptance of new technology in the organization and it should be addressed effectively, so as not to affect the quality of service of this profession. According to Respondent 4, they have no choice but to accept the new automation technology and learn to adapt to the new norms.

"... Of course, there will be fear. Not a big fear, but there will be fear. It will probably change my job. If you are still looking at your career at Shell, we have a lot of progress to improve your skills. But it is up to you to take a chance or not. Because if you continue with what you do and are happy with the transaction work, we should help you a little. Because these robots will take your job..."

(Respondent 4)

An effective and a clear communication process with employees can help them to accept RPA more positively [23]. This was acknowledged by Respondent 9,

"... Actually we have to be there to guide them. And inform them, share more views. Otherwise, they will only think on one side, right? So, we have to bring them back. I think the leaders at this company have done well..."

(Respondent 9)

In addition, RPA can also have an impact on career advancement in the finance and accounting profession. The importance of career advancement is that it can motivate and retain employees. This study found that employees now have more opportunities for promotion because RPA has taken over simple tasks and their new tasks have been replaced with more challenging tasks. This was stated by Respondent 8,

"... but what I see is job promotion, because they have done all the usual activities, and are involved in all sorts of early stage activities, and now they are doing more challenging tasks. It justifies that they are eligible for promotion..."

(Respondent 8)

Furthermore, as a result of the decrease in the number of accountants after the implementation of the RPA, it allows companies to offer higher salaries to existing employees.

"... Say for example now I have 93 employees, but if robotics is implemented, now my employees will be 90 people. Maybe I can offer a higher grade of work. For example, high-paying workers, with a decrease in the number of such workers..."

(Respondent 4)

Although it is a new technology, RPA is able to solve business problems and facilitate business operations within the finance and accounting profession. This allows accountants not to perform complicated, repetitive and time-consuming tasks. According to Respondent 9,

"... I feel that we have succeeded in improving the work-life balance for our employees."

(Respondent 9)

This was also acknowledged by Respondent 5 who said that they no longer need to work overtime as usual and especially during account closure and report generation because this task has been taken over by RPA.

"... I feel relieved because usually we have to be in the office until late at night to close the account. Especially if there is a human error and we must find out where the error is. But this robot helps save time and even if there is a mistake, it is easy to check because everything is automated and there are tracks that can be followed..."

(Respondent 5)

The time savings gained through robotic implementation allow employees to have more time for themselves and they can perform activities that can release stress. During the researcher's visit to the Company Slexa, the researcher was taken to see all the facilities in the company such as gym and rest area, and it can be seen that there are some of the workers who are there during working hours. Researchers understand that in the finance and accounting unit at Company Slexa, this culture is allowed provided all tasks can be completed on time. This is because the management wants to prevent employees from feeling too stressed.

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They also believe in the importance of work-life balance to improve the mental and physical health of employees, and indirectly improve the quality of work.

"...actually, now there are fewer tasks for them. They have time to go and play darts upstairs in our very beautiful gym..."

(Respondent 6)

According to ACCA research entitled "Next Generation" (2018), the younger the employee, the more likely they are to dislike manual or routine work. This ACCA report has revealed that diverse and changing work experience is very important for younger workers. Failure to do so will result in these people going in search of better job satisfaction in a new place. Thus, it is important for business executives to understand that different approaches are needed to attract, preserve and retain the next generation of financial leaders by providing them with more job satisfaction. According to Respondent 4,

"... it takes over transactional tasks. No one starts a career aspiring to be the best data entry clerk. Nobody. So, we remove the data entry element from transactional things, and it provides them with a more job satisfaction. In other words, they can do tasks that broaden their horizons, add value, engage in decision-making, etc. ... "

(Respondent 4)

The influence of RPA implementation is not only to reduce costs, but it is also to free individuals from repetitive tasks. This will improve the nature of the task, which in turn will encourage employees to be more motivated in their job. As described by Respondent 12,

"... We have handed over all the boring tasks to the robots. So, now I no longer have to do the task that all this time lowered my enthusiasm to come to work when thinking that all day I just need to enter the data into the system and make a boring calculation..."

(Respondent 12)

Table 2 summarize the results found in this study.

Table- II: Summary of Employee Acceptance

Influence of RPA towards Employee Acceptance	Explanation
Threatening job opportunities	instills fear in employees for fear of jobs being taken over by robots.
Changes in the scope of work	employees must learn new knowledge due to changes in the scope of work when tasks are taken over by robots.
Adaption to technology	employees must adapt to the new technology and embrace the changes.
Career advancement	employees have more opportunities for promotion and are offered with more attractive salaries.
Work-life balance	employees no longer need to work overtime, and they have more time for themselves.
Job satisfaction	eliminating repetitive and tedious tasks which increase employee morale and motivation.

Source: Author

V. CONCLUSIONS AND IMPLICATIONS

Among the influences of RPA is that it threatens job opportunities by eliminating tasks and causing changes in the

scope of work. This study found that if RPAs take over the duties of accountants and cause their duties to be excessive, then some of the tasks will be eliminated. Existing employees will be transferred to new jobs and require them to do more complex and value-added work. The employee should respond with discretion in a professional manner in accepting the changes that occur. This finding is supported by [24] who state that the use of RPA will lead to changes in employee skills and profiles that will lead to a new and more complex tasks. Some firms will also act to lay off employees when the task has been taken over by robots which will lead to job competition between robots and humans. This will give impact and change of assignments to the professions involved [20]. However, according to respondents at Company Slexa, human resources cannot be completely replaced, especially at a higher level. No matter how advanced the systems and technologies are, they will not be able to replace the role of the accounting profession in strategizing, making judgments, and working with stakeholders and customers to improve accounting and financial performance as well as business as a whole. Furthermore, this study found that RPA has an influence in employee acceptance. Respondents in this company provided feedback that they initially felt less motivated during the introduction of this robotic system as they faced difficulties with internal organizational changes. The results of this study are different from the study conducted by Lacity and Willcocks [9] who stated that employees are happy with the introduction of robots because they see it as an opportunity to get new challenges and more responsibilities. However, the employees in this finance and accounting unit initially felt anxious and less motivated when the robot was first introduced. They have no choice but to accept the robot and learn to adapt to new technologies. Thus, it shows that individuals in the accounting profession should always be prepared and flexible especially in the era of digital technology and automation where technological change is happening rapidly. They should accept changes openly because at the end of the day, new automation will always appear. The changes that take place must be openly accepted in order to maintain the reputation of their profession as well as the achievements of the organization. This study also found that in order to remain relevant in the accounting profession, they must constantly increase their knowledge of new business models, and constantly adapt to technology. The acquisition of this new knowledge is in line with changing job patterns and new demands within the accounting profession.

In addition, this study also found that RPA can enhance career advancement which is in line with [20]. Employees now have more promotion opportunities than before RPA was implemented. This is because RPA has taken over jobs at the lower level and caused the workload of employees to now shift to a higher level. The implementation of RPA in this company also leads to a reduction in workload and can save employee time. This results in employees not having to spend a lot of time in the office doing trivial and repetitive tasks such as preparing reports and closing accounts.



This consequently has caused the employees to have more time for health activities during office hours and they no longer need to work overtime compared with the situation before the implementation of the RPA. It makes the accounting profession at Company Slexa no longer seen as boring and tiring, but it does provide a work-life balance for the profession. As a result, the employee will be more satisfied and happier to work in the organization [19,20].

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REFERENCES

1. L P Willcocks, M Lacity and A Craig. The IT function and robotic process automation. *The Outsourcing Unit Working Research Paper Series*. 2015; 1–38.
2. IRPA Institute for Robotic Process Automation 2014. Introduction To Robotic Process Automation. Available at: <http://irpaai.com/what-is-robotic-process-automation/>
3. The Financial Express. 2016. Available at: <http://www.financialexpress.com/opinion/robotic-process-automation-the-next-big-disruption/344032/>
4. M C Lacity and L P Willcocks. Robotic Process Automation: The Next Transformation Lever for Shared Services. *London School of Economics Outsourcing Unit Working Papers*. 2015; 7.
5. R Syed, S Suriadi, M Adams, W Bandara, S J Leemans, C Ouyang, AH ter Hofstede, I van de Weerd, MT Wynn, H A Reijers. Robotic Process Automation: Contemporary themes and challenges. *Comput Ind*. 2020; 115.
6. S Seasongood. Not just for the Assembly Line: A Case for Robotics in Accounting and Finance. *Financ Executive*. 2016; 31-39.
7. A Burgess. Associated technologies. In: *The Executive Guide to Artificial Intelligence*. Palgrave Macmillan. 2018.
8. M C Lacity and L P Willcocks. Innovating in Service: The Role and Management of Automation. *Dynamic Innovation in Outsourcing*. 2018; 269-325.
9. M C Lacity, M. C. and L P Willcocks 2016. A new approach to automating services. *MIT Sloan Manage Rev*. 2016; 58, 41-49.
10. M C Lacity and L P Willcocks. What knowledge workers stand to gain from automation. *Harvard Bus Rev*. 2015; 19.
11. M C Lacity and L P Willcocks. Robotic Process Automation: Mature Capabilities in the Energy Sector. *The Outsourcing Unit Research Paper Series Paper*. 2015; 15
12. L P Willcocks, M C Lacity and A Craig 2017. Robotic process automation: strategic transformation lever for global business services?. *J Inform Technol Teaching Cases*. 2017; 7, 17-28.
13. Dobson. Robots vs Humans: collaboration or competition?, News & insights, Voice of the Workforce, AI & Robotics, Technology. Available at https://www.networkerstechnology.com/VoW_RPA. 2017.
14. P K McClure 2018. “You’re fired,” says the robot: The rise of automation in the workplace, technophobes, and fears of unemployment. *Soc Sci Comput Rev*. 2018; 36, 139-156.
15. S A Burgard, J E Brand and J S House. Perceived job insecurity and worker health in the United States. *Soc Sci Med*. 2009. 69, 777-785.
16. M Erlinghagen. Self-perceived job insecurity and social context: A multi-level analysis of 17 European countries. *Eur Sociol Rev*. 2008; 24, 183-197.
17. C Boulton. What is RPA? A revolution in business process automation. *Computer World Hong Kong*. 2017.
18. M Schmitz, C Dietze and C Czarnecki. Enabling digital transformation through robotic process automation at Deutsche Telekom. *Digitalization Cases*. 2019; 15-33.
19. K N Kumar and P R Balaramachandran. Robotic Process Automation-A Study of The Impact on Customer Experience In Retail Banking Industry. *Journal of Internet Banking and Commerce*. 2018; 23, 1-27.
20. L A Cooper, D K Holderness, T L Sorensen and D A Wood. Robotic Process Automation in Public Accounting. *Account Horiz*. 2019; 33, 15-35.

21. H P Fung. Criteria, use cases and effects of information technology process automation (ITPA). *Adv in Robotics & Automation*. 2014; 3, 1-11
22. G Walsham. Doing interpretive research. *Eur J Inform Syst*. 2006; 15, 320-330.
23. P Hallikainen, R Bekkhus and S L Pan. How OpusCapita Used Internal RPA Capabilities to Offer Services to Clients. *MIS Quarterly Exec*. 2018; 17.
24. C Perez & F Martin. Digitalisation and Artificial Intelligence: The New Face of the Retail Banking Sector - Evidence from France and Spain. Working papers. 2018.
25. M C Lacity, L P Willcocks and A Craig. Service automation: cognitive virtual agents at SEB Bank. *The Outsourcing Unit Working Research Paper Series*. 2017.
26. M C Lacity and L P Willcocks. Rethinking legal services in the face of globalization and technology innovation: the case of radiant law. *J Inf Tech*. 2016; 6, 15-22.

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