The Adoption of Robotic Process Automation in a South African Bank

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Abstract. Increasingly, South African financial institutions are showing interest in adopting robotic process automation (RPA), to improve productivity, response time and competitiveness. Despite the efforts, some challenges derail the adoption of the RPA. This study examines the factors that influence the adoption of RPA, from both technical and non-technical perspectives. The case study approach was followed, based on which one of the largest banks in South Africa was used as a case in the study. From the organization, qualitative data were gathered, at the point of saturation. The technology acceptance model (TAM) is employed as a lens to guide the analysis of the data. From both technical and non-technical standpoints, five factors, assessing readiness; modern IT solutions; systems integration; implementation and use; and business requirements and RPA functions were found to influence the adoption of RPA. The study reveals that the manifestation of the factors makes RPA adoption prohibitive. There are hesitations in the adoption of RPA in some South African banks because the influencing factors are not fully understood. The study presents empirical evidence, which can assist in addressing the challenges that affect the adoption of RPA in South African institutions and could be expanded to other countries.

Keywords: robotic process automation, technology adoption, technology acceptance model.

1. Introduction

The concept of Robotic process automation (RPA) provides computer-generated employees, referred to as robots, to automate repetitive rule-based tasks that do not necessarily require human intelligence. RPA focuses on automating processing, to enhance productivity and efficiency from both business and technology perspectives (Madakam et al., 2019). Thus, RPA is often viewed as a holistic end-to-end solution, for automation of processes towards effortlessness (Rizk et al., 2020). In a simplistic description of RPA: the robot is a routine that is programmed in machine language; the process is the transformation of input to output; and the automation is the practice of executing (Syed et al., 2020; Madakam et al., 2019).

Based on its focus, there is increasing interest in the adoption RPA, from many sectors including education (Lakay & Iyamu), healthcare (Pramod, 2021), retail and finance (Kumar & Balaramachandran, 2018). Some of the benefits of RPA are processing of high volume, performing repetition, the accuracy of tasks, and cost-effectiveness (Mehrotra, 2019; Romao et al., 2019; Gao et al., 2019). Thus, like other sectors, financial institutions across the world including South Africa are increasingly adopting the technology (Kumar et al., 2018). In South Africa, the challenges seem different primarily from the country's unique socio-political landscape (Mamela et al., 2020). According to Iyamu and Mlambo (2022), the challenges get worse because of limited or no reference cases from financial institutions' perspectives.

On one hand, some adopters of the RPA find it beneficiary in that automation has drastically changed their back offices and lowered costs expenditure while improving service quality, expanding compliance, and decreasing delivery time (Lacity & Willcocks, 2017). On another hand, many organizations have not fully experienced the benefits RPA brings to their business (Willcocks et al., 2015). Many employees of South African financial institutions are sceptical of the adoption of RPA because they think it might make them redundant. This fear is exaggerated by studies such as Madakam et al. (2019), which state that Deloitte company reports that the adoption of RPA in a bank, results in about two hundred employees losing their jobs. Hunter and Willcoks (2017) state that a case study was conducted using an insurance company, which reveals that a process that usually takes two working days by humans was completed within half an hour using RPA.

The problem is that South African banks do not know how and when to use or apply RPA. As a result, many banking institutions in the country continue to lose out from the benefits that RPA presents, such as increased production, response time, and less processing time, which affect competitiveness and growth. The challenges trigger the question of this study, which is what are the factors that influence the adoption of RPA in a South African bank? The question transforms to the objective, to determine the factors that influence the adoption of RPA in South African Bank. The factors were determined by empirical evidence, which can be used as a solution to guide the adoption of RPA in financial institutions in South Africa.

2. Literature Review

2.1. Robotic Process Automation in financial institutions

The adoption of RPA has both technical and non-technical (human and process) implications. From a non-technical perspective, Montero et al. (2019) viewed its ability to imitate human tasks while interacting with the user interface. Schmitz et al. (2019) refer to RPA technology as 'smart automation' that engineer automation in a faster and more accurate manner. One of the strengths of the technology is that it mimics human actions through interactions with computer systems (Shehu & Abba, 2019). Despite the advances that it brings to the workplace, it has challenges. The challenges seem more of humans than technology (Roy & Viswanathan, 2018). Primarily, the challenges exist because of fear of job security (Romao et al., 2019). In South African banking institutions, this fear is increasing among employees to the point where many of them are no longer comfortable (Mamela et al., 2020).

The rapidly growing interest in RPA by the financial sector is informed by competitiveness (Mlambo & Iyamu, 2021). Some of the benefits are the high volume of processes, cost reduction, accuracy, and connectedness of user interfaces (Mlambo & Iyamu, 2021). Although many benefits of RPA to financial institutions have been widely experienced and reported (Crosman, 2018; Mahashree, 2020), the challenges persist (Willcocks et al., 2017). Also, the challenges that the adoption of RPA poses to job security are not only in the South African environment (Pramod, 2021). According to Iyamu and Mlambo (2022), the adoption of RPA and its purposes are not properly understood by some banking institutions in the country. This could be associated with the uniqueness of South Africa and its financial institutions' environments (Chigbu & Nekhwevha, 2020; Ndoro et al., 2020).

The adoption of RPA continues to create divisiveness in many environments (Mehrotra, 2019). Zhang and Liu (2019) argue that RPA in banks has matured, replacing humans to a point where most bank branches are being considered for shutdown. There is a contradiction, and confusion in that RPA requires human input, to perform tasks (Chalmers, 2018). Phillips and Collins (2019) argue that RPA as a technology, can either create panic or celebration mode and this is a decision that everyone must make, depending on how they view the technology and understand its capabilities.

From a positive angle, Bedekar and Satpathy (2019) state that employees concentrate on how to contribute to the adoption of RPA rather than worrying. According to Romao et al. (2019), employees should instead focus on serious processes that require critical thinking and cannot be mimicked by a robot. Thus, employees should adopt RPA and employ it to advance their tasks (Phillips & Collins, 2019). RPA releases employees from repetitive processes and improves swiftness and adds more value (Romao et al., 2019). Even though these challenges exist, empirically, the influencing factors are not known in the South African environment (Mlambo & Iyamu, 2021). Thus, some of the employees' scepticism is based on perceptions. This is one of the reasons why the technology acceptance model (TAM) is selected, to gain deeper insights into the factors that influence the adoption of RPA in financial institutions in South Africa.

2.2. Technology Acceptance Model

Technology Acceptance Model (TAM) focuses on perception and usefulness (Lai, 2017). Through its four main components, the TAM focuses on the motivation of users in the acceptance and use of technology in an environment. The components are (1) Perceived Usefulness, (2) Perceived ease of use, (3) attitude towards using, and (4) actual system use (Davis, 1995). How the user accepts the technology is discovered through different variables as follows:

Perceived Usefulness - Perceived usefulness can be defined as a shift in attitude depending on the advantage technology has in assisting with job performance (Davis, 1995). Taherdoost (2018) defines perceived usefulness as the user's inspiration towards using technology. Lai (2017) states that perceived usefulness is the potential probability of a user's utilization of a technology which is a core driver to determine any system use. Perceived usefulness is how much an individual accepts that using a specific technology is of assistance in adding value to their job and performance (Chuttur, 2009). This study examines the participants' perceived usefulness of RPA for their daily operations and how RPA enhances their performance.

Perceived ease of use - Perceived ease of use is defined as how the user finds comfort in using technology (Davis, 1995). Every individual is interested in using a technology that is user-friendly and not complicated (Taherdoost, 2018). Ease of use is how much the potential system's user anticipates that the objective technology should be easy (Lai, 2017). To understand the use of RPA, this research examines the users' experience and how users feel about using RPA to enhance daily operations.

Attitude towards use - Attitude towards using is defined as how an individual views using technology (Davis, 1995). Attitude towards a technology plays an enormous role in a user's acknowledgement of a technology (Taherdoost, 2018). The attitude of an individual towards a technology might be impacted by different elements, such as feelings and approach towards something

new (Lai, 2017). To examine the attitude towards using RPA, this research examines the users' way of thinking about using RPA.

Actual system use - Actual system use is defined by the user's attitude, comfort, and usefulness of a technology. If a user finds the technology easy to use, makes work better, and increases performance, then that user is more likely to adopt that technology (Davis, 1995). A user can either approve or disapprove of a technology and that decision is based on the attitude towards using that specific technology (Taherdoost, 2018). The actual system use component is to understand how users feel about the technology and if users do intend to use it.

Many researchers have used TAM to examine the worth of technology, its security, and customers' confidence in using the technology (Balaaooriya et al., 2017). TAM considers different variables to assess how users adopt and use a particular technology (Davis, 1995). The factors that influence the acceptance of technology are clearly defined in TAM to cover all variables when conducting the assessment. TAM is the most applied model when analyzing an adoption or acceptance of a technology and was established to recognize all the factors that influence a user's adoption of a particular technology (Sathitwiriyawong & Phuttaraksa, 2018).

3. Research Methodology

The qualitative method was employed because it allows subjectivism (Mitchell, 2018). The study entails gaining an understanding of the factors that influence the adoption of RPA in an organization, which is best achievable through participants' subjective views and experiences. A case study research design was selected to primarily focus on one financial institution in South Africa as a case. The case study approach enables a thorough and deep investigation of a phenomenon (Yin, 2017). A single case study was adopted that focuses on one financial institution (case). For ethical reasons, the selected financial institution is assigned a pseudo name, Misuzulu Bank. The criteria used in selecting the case are (1) access to the institution; and (2) currently, the institution adopts RPA. Semi-structured were used to conduct interviews because the technique is conversational in nature, which allows probing, clarification, and deeper understanding. The objective of the research was to understand the factors that influence the adoption of RPA in the context of financial institutions in South Africa.

Data was collected using the semi-structured interviews technique. This is because the technique allows conversation between the interviewer and interviewees, which helps to get clarification and gather rich data. Participants were selected from both the IT and business units involved with the RPA solution in the organization. The criteria used in the selection of the participants are, (1) experience, the participant would have spent at least one and a half years in the organization, to ensure that he/she knows enough about the environment; and (2) knowledge, participants must be familiar with RPA for at least one and a half years, considered long enough to have a good understanding of the technology. A total of twelve employees participated in the study. Six people each from the IT and business units, respectively. The participants reached the point of saturation when no new information was forthcoming. As shown in Table 1, the demographics of the participant are in three categories: senior managers, RPA software developers, and users.

Table 1: Demographics of participants

Position	Unit	Years of service
Senior manager	IT/Business	Min. of 1-5 years
RPA Developer	IT	Min. of 1-5 years
Users	IT/Business	Min. of 1-5 years

The data was coded, to avoid disclosure of participants' identities. This means that each interview

transcript was assigned a pseudo name. In addition, the transcripts were page and line numbered, to ease referencing. The thematic analysis technic was employed in the analysis of the data. TAM is used as a lens to guide the analysis of the data (Iyamu, 2021). The theory is discussed in the literature review section. Table 2 shows the format of how TAM is employed to guide the analysis, as presented in the findings and discussion section below.

Table 2: TAM components

TAM components	Definition
Perceived usefulness	The degree to which the employees perceive RPA to be useful in enhancing productivity and process efficiency.
Perceived ease of use	The degree to which the employees rate RPA as easy to use and free from effort.
Attitude towards using the technology	The feeling or impression employees have towards using RPA.
Actual system use	The use of RPA in the organization.

4. Findings and Discussions

From the analysis presented in the section below, five factors were found to influence the deployment and use of RPA in the financial institution used as a case in this study. The factors are as follows; (1) Assessing readiness; (2) Modern IT solution; (3) Systems integration; (4) Implementation and use; and (5) Business requirements and RPA functions. Also revealed from the analysis is the fundamental relationship between the factors, indicating that the factors do not operate in a vacuum or in isolation in influencing the deployment and use of RPA in the organization. The factors are connected and depend on each other.

4.1. Assessing readiness

Assessing the readiness of the environment helps to continually examine the state of preparedness for change (Webster & Gardner, 2019). As revealed from the analysis, Misuzulu Bank did not assess its environment, to understand whether the employees were ready to adopt and use RPA. Many of the employees have limited knowledge of RPA and some were not aware of the technology. According to Zhang et al. (2020), every organisation should have a unit in the IT department that focuses on transferring technology awareness and readiness. The lack of awareness and communication heightened job insecurity among employees in deploying RPA in the organisation.

A lack of readiness has an impact on the adoption of innovative technology in Misuzulu Bank. Also, a lack of readiness influences requirements from both business and IT perspectives. Therefore, it is important to assess the readiness of an environment in conjunction with requirements gathering. It is essential to employ technology readiness levels tools to evaluate the readiness of an environment before adopting and using new technology (Pramod, 2021).

4.2. Modern IT solution

RPA brings about modern IT solutions as opposed to legacy systems. IT solutions with longevity are usually described as legacy systems (Bakar, Razali & Jambari, 2019). Before the introduction of RPA, Misuzulu Bank relied on legacy systems, which often have little or no flexibility change to its operations. Also, modern IT solutions such as RPA have their strength in enabling and supporting business logic

and objectives in a newer and more dynamic platform. However, Misuzulu Bank struggled in adopting modernized innovative technologies and integrating the new technologies with the existing systems.

The main concern in the pursuit of modern IT solutions was data security. According to Al-Ali et al. (2019), the security of data is not a parameter for deciding on a modern IT solution. However, the fear delayed the deployment and use of RPA in the organisation. Thus, adopting RPA, a more dynamic modern IT solution, proved difficult in the organisation. Desai (2020) suggests that many organizations are uncertain of RPA.

4.3. Systems Integration

Systems integration is a challenge in many environments (Money, 2020) including Misuzulu Bank. This can be attributed to its importance in an environment. As revealed in the analysis, systems integration has an impact on the adoption of RPA. RPA operates in the user interface via the backend and through an application programming interface (Stolpe et al., 2017). Integrating current systems with RPA means that RPA can simultaneously capture and process different processes using different applications (software). Vijai, Suriyalakshmi and Elayaraja (2020) state that RPA is so powerful that it can communicate with different applications to integrate and process repetitive tasks.

Systems integration is crucial in many organizations, due to the complexities of their environments. Egiyi and Chukwuani (2021) suggest that RPA can be used as an integrator of systems. In Misuzulu Bank, RPA is used as a bridge between systems, in sharing data for processing. This means that RPA addresses systems integration challenges (Schmitz, Stummer & Gerke, 2019). Consequently, RPA is assisting Misuzulu Bank to enable its departments and employees, to share data and systems.

4.4. Implementation and use

Despite the challenges from both IT and business units, the implementation and use of RPA in Misuzulu Bank are gaining momentum towards success. Thus, the implementation and use require criteria, for assessing the benefits of achieving its objectives, from both technical and non-technical perspectives (Egiyi & Chukwuani, 2021). The Misuzulu Bank implements and uses RPA for automating mundane, repetitive tasks. Also, both internal and external factors should be included in assessing the benefits. As revealed from the analysis, the Misuzulu Bank has not prioritized RPA as every department's key performance indicator (KPI), and this was alluded to by most employees who participated in the study.

Thus, RPA needs to be customized to improve effective and efficient use in enhancing the objectives of the organisation. This helps to transform processes and business operations to a more advantaged point. Also, the effect of implementation and use of the technology can improve compatibility, flexibility, and compliance of processes and activities. Willcocks et al. (2017) argued that transforming processes using automation enhances business operations. In Misuzulu Bank, the business operations and processes are mandate-critical tasks.

4.5. Business requirements and RPA functions

The analysis revealed that business requirements and RPA functions require alignment, toward a successful implementation of the technology in Misuzulu Bank. This is attributed to the conflict that is perceived to arise from different understandings between the business and RPA units within the organization. Also, the various understandings are factors that potentially influence the implementation and use of RPA in Misuzulu Bank. Some of the understandings result in a lack of knowledge and manifest into fear that the implementation of RPA can cause the loss of jobs. This is despite Siderska (2020) revealing that there is no need for employees to fear RPA; instead, humans should try to understand their role during the planning and implementation of automated processes.

The business and RPA units of Misuzulu Bank strive not to operate separately in silos, to avoid conflict and confusion among the employees. The alignment bridges awareness and communication gap that may exist during the implementation and use of RPA in the organization. Anagnoste (2018) suggests that alignment can be derived from knowledge sharing and internal demonstrations of how

technologies such as RPA could assist in enhancing business processes and operations. Therefore, the inclusiveness of employees is essential in the implementation and use of RPA in Misuzulu Bank.

5. Analysis of the Data

TAM consists of four main dominant variables: (1) Perceived usefulness (PU); (2) Perceived ease of use (PEOU); (3) Attitude toward using (ATU); and 4) Actual system use (ASU). TAM considers the perception of the people and how people perceive a technology to be easy or useful. Pseudo names were assigned to avoid the disclosure of the identities of the organization and those that participated in the study. For ease of reference to the data gathered from participants, the pseudo names were used to create code names: MZP01 – MZP12; each document (interviews transcribed) was formatted by giving page and line numbers ease of reading and referencing. For example, MZP01, 23:20 means an extract from participant number 1, page 23, and line number 20 of the transcript from the participant.

5.1. Perceived Usefulness

Perceived usefulness is the thought that a particular technology is significant and can help conduct certain tasks in an environment (Lai, 2017). It is based on this perception that Misuzulu Bank deployed the RPA technology. Although the technology is deployed in the organization, the perception is not holistic, meaning, not all employees from both information technology (IT) and business share the same view and opinion.

From the IT perspective, different specialists participated in deploying and using the RPA in Misuzulu Bank. Some of the specialists are data analysts, software developers and IT managers. From the business perspective, different business units participated in the study, ranging from internal audit, risk management, and business operations to corporate and investment banking, retail banking, and day-to-day banking operations. The perceptions of these specialists on whether the technology is or can be useful in the activities and processes of the organization were critical in the consideration for deployment. According to one of the IT specialist participants:

> "I think there is just a lot of manual tasks that are repetitive that they have to perform, especially when it comes to the customer for example, ... the process of applying for car finance its repetition of the same thing…" (MZP03,1:37-41).

The perceptions of IT specialists about the deployment of RPA were considered significant in that the IT unit is responsible for the evaluation, implementation, support, and management of the technology within the organization. The consequences are that the technology must be appropriately implemented and the entire organization must rely on technology support to purposefully make use of the technology. In addition, management helps to avoid the derailment of the technology.

The questions were, what informed and influenced the perceptions of the IT specialists? Many of the IT specialists in the organization relied on second-hand information, i.e., information from colleagues and the public. Some IT specialists embarked on a preliminary investigation to understand the purpose of RPA and how it works. These are perceptions because their understanding is not based on reality or practice. Thus, it was not based on users' experiences and responses to the use of the technology.

However, not all specialists in the IT unit perceived RPA to be useful to the organization. This is since many of the business systems that the bank is using for its operations, often referred to as legacy systems, are old. The over-reliance on legacy systems impacted the rate at which Misuzulu Bank adopts new or emerging technology, which is evident in the adoption of RPA. Consequently, this influences the perception of some IT specialists in adopting, deploying, and using RPA in the organization. One of the participants alluded as follows:

> "Even though we (organization) are on a journey to transform, which includes deploying newer and emerging technologies, we still rely on legacy systems" (MZP03,1:32-35).

A perception from some quarters of the IT unit suggested that RPA can easily integrate with legacy systems. This perception was due to a lack of readiness assessment. As a result, there was slowness in the operationalization of the RPA, leading to the duplication of processes. For RPA to work efficiently, and accurately, and reap the benefits of the technology, stable application systems and environments are required. This requires readiness assessment to ensure RPA operates and fulfils the purposes of its deployment.

The business users in Misuzulu Bank perceived RPA differently from how many of the IT specialists did. The perceptions of many of these users were based on the possibility of having a stable platform and smooth operations. This perception was primarily based on their concentration and experiences with the current systems, which were sometimes challenging to use. Thus, many participants perceive RPA as useful, and others differ due to the unstable environment and lack of readiness of most application systems to integrate with the technology.

The perception of businesspeople about the deployment of RPA was important to understand how RPA has affected or impacted their day-to-day business operations. This includes the perception of how RPA can assist or derail their work activities. Rather than readiness assessment, this individual evaluation was based on 'hearsay' on how RPA influences the processes and activities in some areas. One of the participants with the business unit stated as follows:

> "It's exciting that technologies such as RPA exist, speaking of where I am in my career, I have a lot of tedious tasks that take a lot of time, and RPA can be used to automate those tedious tasks" (MZP04, 1:20-22).

Many employees in the business unit believe that RPA can assist in processing mundane tasks and processes that do not require human creativity. Thus, many of the employees are sceptical of RPA's usefulness for those that perform mundane tasks repetitively. The fears are understood because RPA can replicate tasks end-to-end. By implication, there is no need for humans to perform those processes anymore. Another fearful aspect is its ability to easily replicate rule-based tasks, which leaves some of the employees idle and threatens their job security. This is not completely the case if employees understand the function of RPA because the technology does not execute itself. It needs humans to integrate the current process with RPA. This integration requires a specific type of skill capacity. At the time of this study, such capacity for change was limited. The change assisted in the process of transformation from legacy systems to a more dynamic environment that flexibly accommodates newer technologies such as RPA.

5.2. Perceived Ease of Use

The perceived ease of use is based on users' perception that technology is user-friendly and easy to use (Taherdoost, 2018). Based on ease of use, the study seeks to understand how employees at Misuzulu Bank perceive RPA to be easy to use or not. The perception that RPA is easy to use can be associated with three fundamentals: (1) there are no factors to determine whether RPA is easy to use or not; and (2) ease of use is influenced by individual or group understanding, and (3) RPA's ease of use means different things to IT and business employees in the organization.

RPA is deployed in Misuzulu Bank, and there is a unit within the IT department of the organization that focuses on the deployment, management, and use of the solution. RPA was adopted within the bank for mundane tasks and customer data that require swift and accurate processing. However, there are no factors within the bank that can determine whether RPA is easy to use or not. This is because there is no clear mandate and structure from management on how the RPA unit works with business units to create RPA processes. The business units and the RPA unit operate in silos, and there are no uniform factors that can be used to determine whether the use of RPA is easy or not.

Different views exist about the deployment and use of RPA in the organization. The most prevalent views are categorised into two groups, namely IT and business. The IT specialists find using RPA easy primarily because less coding is required in the use of the solution to automate processes. The use of

RPA in the IT department was influenced by the bank's adoption of emerging technologies to enhance the processing speed and accuracy of processes. This led to the bank adopting RPA and upskilling and hiring employees to join the RPA unit. However, the narrative is different from the business side, as no formal introduction and assessment were made on RPA, and, therefore, the business units' understanding of RPA was based on individual research or influence from other colleagues who know RPA.

Some IT specialists were familiar with RPA before and during its implementation in the organization. Their familiarity with the technology made some of them perceive it to be easy to use, which was not necessarily the case. This is because familiarity and applicability with technology have proven to be different in nature and practice. According to Azma et al. (2016), the ease of use and application of technology varies according to the old and new generations. Also, the ease of use of RPA to an IT specialist is not necessarily the same view or perception of the business counterpart. The perception of IT and business people about the use of RPA was crucial in understanding the influence and the value that RPA has on banking activities and processes. One of the IT specialists stated that:

> "If you have a background in IT, then using RPA and understanding the RPA logic would be easy. However, if one does not have a background in IT, then it becomes difficult to use and understand" (MZP09,1:31).

The perception of IT specialists was significant in understanding how RPA is perceived by people who are first in line to be introduced to new technologies in the organization. The IT people are the first to upskill on new technology for ease of understanding and use when transferring the knowledge to other business units. When IT people perceive the use of RPA negatively, it impacts the use of the technology within the organization. However, if the IT people perceive the use of RPA positively and is easy to use, then transferring the knowledge to other business units will be swift. One of the IT specialists alluded that:

> "The way that the RPA tool is structured the user interface is very user-friendly; you don't need to know everything about it, you just need to know enough to go around and play with it" (MZP05,2:73 – 75).

The perception of ease of use is not uniform amongst IT people. This is attributed to the fact that some IT specialists feel that for RPA to be easy to use, the users must have a solid coding (programming) background. This view is based on the argument that understanding the logic and flow of an RPA process makes the technology easy to use. An IT specialist explained briefly as follows:

> "I cannot say it is easy to use RPA in the organization. Frankly speaking, from my experience, the technology is challenging to use for our operations (MZP08,2:78).

Some IT specialists are concerned about individuals who do not have a coding background. For ease of use, some IT specialists suggested third-party RPA tools that do not require much coding skills but allow for drag-and-drop activities, such as UiPath and Blue Prism. This enables ease of automation of processes by people (employees) who do not have coding backgrounds. As at the time of this study, the RPA department in Misuzulu Bank does not allow using third-party tools because they were considered expensive. One of the IT specialists stressed this:

> "The RPA third party solutions are expensive, they require licenses, and the organization is not prepared to invest in them" (MZP10,4:177 - 178).

The ease of use was expressed differently by all IT specialists, and their views were not in harmony with each other as their perspectives on the ease of using RPA differed. Therefore, the study then seeks to understand how business people feel about using RPA for their day-to-day activities and processes.

Automated solutions and processes are business processes that are conducted and primarily dependent on business departments as they design, implement, and monitor the business processes. However, some employees of business units were well knowledgeable about the organisation's businesses and processes. However, these employees required the knowledge of the RPA "robot" to enable application in the execution of tasks. The RPA developers need business people to understand

the requirements in the application of the technology. One of the challenges is that some of the employees in the business units are sceptical of the word "robots" because it is associated with job losses. This helps to understand how business people perceive the use of RPA to automate their activities and processes. This perspective came from one of the participants who stated that:

> "People are a bit scared. They do not know what they do not know, they fear robots because they think it is going to take over their jobs" (MZP06,1:33-35).

However, the perception that RPA can be easy to use did not remove many employees' scepticism that technology is a threat to their job security. Thus, there was a need to emphasize awareness about RPA and its roles in the organization. This includes the complementarity of humans' functions and RPA's role in conducting the organisation's processes and events for improved efficiency and effectiveness. Consequently, understanding and awareness are expected to help detect the gaps towards increasing capacity and capability in using RPA and human efforts in the organization. Also, this can address the perception that some employees' lack of awareness in the organization or simply do not want to learn about the new (RPA) technologies that will disrupt their roles and comfort in executing their current responsibilities, activities, and processes in the bank. Here is what one of the participants said about this:

> "I am not sure what the bank is doing or where they are with RPA initiatives. They are not getting the information to us (business people) and not transparent enough with the RPA journey thus far" (MZP12,2:60-61).

Based on their perceptions, many employees, particularly those in the business units, had mixed feelings and emotions about the implementation and use of RPA in the organization. Thus, some business people might not find RPA easy to use due to reluctance in understanding RPA capabilities and not being well informed about RPA functions and roles in the automation of business processes.

5.3. Attitude Toward Use

Attitude is a settled or subtle way of thinking or behaviour towards a subject or object. Thus, attitude or thoughtfulness, including feelings and emotions, influence the use of new technology (Lai, 2017). Based on these perceptions, this study seeks to understand employees in Misuzulu Bank's standpoint towards the use of RPA for organisational purposes. The attitude towards the use of RPA is expressed by mixed emotions based on the advantages and disadvantages that are perceived about RPA by individuals and groups. The different views were obtained from both IT and business as both have a role in the implementation and use of RPA.

In the IT department, the attitude towards using RPA was positive, as employees in the IT field were always upskilling and learning about new technologies. However, some employees in the IT department were not impressed with the organisation's approach and awareness of RPA. From the business perspective, the attitude of some employees toward using RPA was concerning. This was due to fear and panic brought about by the new technology (RPA) within the organization. As a result, this made most employees feel less motivated to learn more and understand the technology. The perception of how IT and business people felt towards the use of RPA was crucial in the study to understand the different viewpoints and feelings of employees. One of the IT specialists expressed their feelings as follows:

> "RPA should be easy for anyone to understand, as long as they are part of the planning and solution of processes being automated like the developers so that they can have an overview and see that RPA can assist in mundane tasks" (MZP03,5:219-221).

The attitude of IT specialists towards using RPA was crucial to understanding how they perceive and feel about the adoption of RPA within the bank. The IT department is where the organization can gauge how most IT specialists feel and react to adopting any technologies being introduced in the bank. Most IT specialists are required to upskill other employees in the organization on the adoption of new technology. Therefore, their attitude expressed either by fear, perceptions, or emotions has a big impact on how other employees feel about adopting that technology. However, learning and upskilling is not a

challenge to most IT specialists. This was expressed by one of the IT specialists who stated:

> "For us who are part of the RPA unit, we are happy because we got an opportunity to gain experience in new technology and upskill. In IT, you must be creative and think of something that will make work easier, and RPA has been helpful" (MZP09,3:104-106).

The viewpoints on the use of RPA were not mutual amongst IT specialists as some of the IT specialists feel that RPA is a technology that requires fast networks, laptops, and operating systems to operate at full potential. This viewpoint was because the banking infrastructure was not stable enough. As a result, there was reluctance to change over to new and improved infrastructure due to security and productivity concerns such as downtime of processes which could result in risk events.

The business people were responsible for monitoring automated processes and ensuring that whenever a system or application was upgraded, the RPA developers were made aware so that they could make the necessary changes to the RPA process flow and logic. The attitude towards using RPA for business people was expressed differently because the use of RPA was not a priority. They were of the attitude that their processes worked regardless of the use of RPA or not. Monitoring all deployed robots or automated processes was not considered a priority for business people because not everyone wants the technology to succeed, based on their fear that RPA can easily replace humans by performing tasks or processes that they do daily. This was expressed by one of the business people who stated that:

> "People don't consider the advantages of RPA in their work environments but are rather focused on their fear that RPA could take their jobs away" (MZP11,3:127-128).

The negative attitude that many employees in the business units had toward the deployment and use of RPA did not mean that the solution was not useful to the business, but disruptive of their day-to-day roles in the organization. This required manageability, which was farfetched, as many of the employees distanced themselves from such responsibility. The manageability includes strategic dissemination of information, training, and addressing challenges. Therefore, it was normal to feel threatened when a disruptive technology, RPA, was introduced into the different business units, especially when there was not much information and training from the bank for the employees to understand their roles and responsibilities post-deployment of RPA. Instead of focusing on manageability, the bank outsourced services and skills. One of the participants briefly explains as follows:

> "We have the skills in the bank and the leadership to drive great initiatives such as RPA. However, the problem is that the bank hires external consultants to do work and not enable the internal employees to learn and drive RPA initiatives" (MZ06,2:67).

The lack of RPA knowledge has created an attitude in business people not to find RPA useful. Consequently, this created a negative attitude towards the employees' eagerness to upskill and be part of the RPA initiatives. The attitude of some employees in the business units was influenced by 'hearsay' about RPA and not what RPA is capable of. The lack of understanding and knowledge will amount to increased fear that the use of RPA will result in job losses. This was stressed by one of the business people who stated that:

> "RPA is not prioritized because it is a mindset thing, and people are resistant to change. The other thing is we so busy with business as usual (BAU) that we do not have time to apply our minds to using technologies such as RPA" (MZP04,2:87-89).

The attitude towards using RPA in Misuzulu Bank was based on various factors such as feelings, lack of knowledge, emotions, and lack of manageability. These factors manifested from different sources, including misinformation, misunderstanding, and 'hearsay' about the technology. This impacted the way many IT specialists and employees in some business units felt about the deployment and use of RPA in the organization.

5.4. Actual System Use
The actual system use component of TAM is defined as how users find using the technology easier and less complex to use when more users use the technology (Taherdoost, 2018). Based on this perspective,

this study seeks to understand the actual use of RPA in Misuzulu Bank. As of the time of this study, although RPA was deployed and used in the organization, there was no approach and strategy for the actual use of the RPA technology. This created many challenges, which were of technology and business-related nature, such as integration, coexistence with long-serving technologies (legacy systems) and lack of manageability.

From the IT department's perspective, the actual use of RPA lies in the visibility of the technology solution. This means that the solution was being used and was part of the operations and strategic approaches of the organization. To this extent, there is (at the time of this study) an RPA dedicated unit within the IT department of the organization. This was considered a good indicator that the use of RPA in Misuzulu Bank was there to stay for organizational purposes.

Despite these efforts, there was no clear direction of how the RPA unit was enforcing its mandate to demonstrate RPA capabilities and usefulness to the business units. This contributed to mixed emotions and reactions to the acceptance and use of RPA in the organization. These mixed emotions may arise from the point of no direction and clear mandate from the bank management on how RPA is being used and how the employees will be affected by the implementation of RPA. The perception of the actual use of RPA from both IT and business people was crucial to understanding and establishing how RPA is being used and implemented in the bank. One of the IT specialists stated that:

> "Employees in the bank know about RPA as the RPA unit works with lots of business units which enables awareness of RPA. People are overly excited" (MZP03,5:191-192)

The perception of the IT people was vital as they play a huge role in raising the awareness of RPA in the bank and the drive toward actual use of the solution. It is transparent from an IT perspective that the bank uses RPA and has trained some people in the IT department on how to deploy, enable, support, and use the technology. Thus, there were different roles concerning the RPA, ranging from RPA developer and data analyst to process engineers and project managers. As a result, Misuzulu Bank automated many processes by using RPA, to the extent, the bank developed an in-house RPA solution that is owned and monitored internally. One of the IT specialists stated that:

> "The bank already has more than 100 robots running, and all these robots are in the production environment, running on the RPA tool that was developed internally by the bank" (MZP03,1:17-18).

The bank has encountered many challenges in its RPA journey based on the decision to use its in-house developed tool. The challenges emerged when the bank decided to move from using a proprietary (third-party) tool to developing its own. This included challenges from developing, testing, and implementing the RPA tool. The change of the RPA tool also required new skillsets from the RPA unit employees, and this caused a delay in the automation of new processes in moving existing automated processes from the third-party tool to the in-house tool also required effort and time from the RPA team.

The business is the most affected unit as the actual use of RPA impacts their working environment either positively or negatively. The positive side would mean that RPA is considered helpful in business processes. However, the negative side is that most employees resist using RPA based on either fear or ignorance. This somehow contradicts the IT department's standpoint about the actual use of the technology solution in the organization. Even though the bank has deployed more than 100 RPA-related solutions, contradiction and instability exist. This contradiction exists because there were no agreed business and technology requirements that could be used to measure, assess, and evaluate the use of the solution. An employee in one of the business units stated:

> "We realize that the spaces that we audit have some robotics initiatives, at some point the audit unit attempted to automate some of the processes. However, none were implemented into the production environment" (MZP12,1:9-11).

There is no clear mandate on the actual use of RPA in business units, and therefore some business people do not use RPA to enhance productivity and efficiency for their processes. This can be attributed to governance or manageability that is specific to RPA operations. It could be that RPA was not formally introduced to business units and business people are not required to use it, or the use of RPA is introduced, and business people choose not to use it due to their fear that the technology could

potentially disrupt their processes. Most business people are of the assumption that adopting new technologies is costly and might not be worth it.

There seems to be a contradiction between IT specialists and business people on the actual use of RPA, which could result from no clear mandates and no harmony between the IT department and business units. There is an RPA unit within the IT department at Misuzulu Bank. However, not all business units are aware of that. Some business units use RPA independently without involving the RPA unit and encounter cost complications, whereas if they used the RPA unit, they would not have such challenges as there is an in-house RPA tool.

6. Conclusion

There is a gap of knowledge arising from the lack of in-depth research on RPA concerning how employees fear the technology and how organizations introduce and implement RPA. This has resulted in a contradiction of two realities due to the promotion of fear, based on lack of knowledge, that one will overwhelm the other. This gap makes the study significant from two main standpoints. First, the findings can be used by any banking institution in developing RPA adoption guidelines. Second, it reveals how critical the roles of humans are in the adoption and use of RPA, from both technical and non-technical perspectives.

The study contributes to a body of knowledge from both theory and practical perspectives. At the time of this study, there seemed to be no model to guide the adoption of RPA in South African financial institutions. The study is intended to benefit both IT and business personnel in financial institutions, primarily because it helps the stakeholders to gain a deeper and more useful understanding of the factors that influence RPA adoption in their environments. This includes how the solution can be adopted complementarily with the human workforce. The study empirically revealed the factors that influence the adoption of the RPA in financial institutions. These factors can be used as a guide and terms of reference by other developing countries.

Despite the significance and contributions of the study, there are limitations. This includes a decision support model and a measurement model, to ascertain the value and benefits of the technology in an environment. The limitations form a thread for future research.

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