# The Impact of Robotic Process Automation (RPA) on Employee Commitment

**Nguyen Ngoc Linh[1], Pham Thi Thuy Tien[2], Pham Thi Ngoc Phuong[3], Nguyen Minh Ngoc[4], Le Trang Nhung[5], Tran Manh Linh[6]**

[1,2,3,4,5,6]*National Economics University*

**Abstract:** *The presence of new technology, RPA (Robotic Process Automation), is believed to be a valuable assistant for businesses in general and individuals working for any specific organisations. Businesses might benefit from this technology, however, employees in certain departments might feel threatened about this technological substitution, which might result in personal deduction. This study aims to discover employees' behavioural intentions and perspectives on the application of RPA in their work. Specifically, the research will focus mainly on ease of use and the efficiency of RPA. Therefore, the level of commitment to the enterprises from their workforce can be concluded through mediating factors such as employee's satisfaction about the participation of RPA. Through the convenient sampling method with a sample of 229 observations, 18 questions were sent to businesses currently operating in various industries, which has shown that the relationship we studied demonstrates a positive direction. It can be seen that RPA is a new technology, and both the intention to use and ease of use have a significant impact on employees' intention to use, thereby increasing their satisfaction and commitment to the company when working. The results of this study support the viewpoints and findings of previous studies, alongside the discovery of new factors, namely, when employees have the intention to use RPA technology, their commitment to the enterprise will be immediately implemented.*

## I. INTRODUCTION

According to the global digitalization trend, Robotic Process Automation (RPA) is becoming popular as one of the least invasive, easiest, and the most efficient method of automation. Automation is pervasive, raising concerns that 'robots' are taking over more jobs from humans, especially in industries like healthcare, financial services, manufacturing, retail, as well as many other industries are leaning towards automation. People's concern about their jobs is understandable.

Simultaneously, organisations are embracing the RPA trend to cut costs while aiming to improve the efficiency and quality of their processes (Cewe, Koch, & Mertens, 2018; Hofmann, Samp, & Urbach, 2020). In 2019, 49% of large companies worldwide invested in the RPA, with 24% implemented RPA in their workflows. Small and medium-sized companies also showed increasing interest, with 14% investing and 17% applying RPA, according to Statista (2020). The RPA market has grown exponentially and is expected to reach $11 billion by 2027 (AIMultiple, 2024).

Amidst the bright outlook for the RPA, one motivation for its deployment is the ability to reduce mundane and repetitive tasks, enabling employees to focus on more value-added tasks that require social skills, problem-solving abilities, and decision-making (Institute for Robotic Process Automation, 2015; Penttinen, Kasslin, & Asatiani, 2018; Santos et al., 2019). However, it's common for some employees to feel apprehensive and concerned about automation and its impacts on their jobs and employment (Fernandez & Aman, 2018; Hallikainen, Bekkhus, & Pan, 2018; Lacity & Willcocks, 2017).

## II. LITERATURE REVIEW

*The Impact of Robotic Process Automation (RPA) on Employee Commitment*

## 1. About RPA (Robotic Process Automation)

Robotic Process Automation (RPA) is an emerging technology that relies on virtual robots to mimic human interactions across various systems (Zhang, Liu 2019; Lacity, Willcocks 2016). RPA stands out as one of the most advanced technologies in computer science, electronics, telecommunications, mechanics, and information technology. It involves a combination of hardware, software, networking, and automation to execute tasks effortlessly. The term "Robotic Process Automation" encompasses a broader vision beyond physical robots wandering around offices; it truly means automating service tasks previously carried out by humans. Robotic automation is the application of specific technology and methods using computers or "virtual robots" instead of humans operating existing application software, planning enterprise resources, application demands, databases, learning management systems similar to how humans process a transaction or complete a process (Sutherland, 2013). According to the research by K.V.N. Rajesh et al. (2018), the researchers delved deeper into the functionality of RPA, which is simulating user actions on computers to accomplish various business processes. For instance, automating repetitive rule-based tasks using non-intrusive software called BOTs.

## 2. Adoption in new technology

During the adoption of new technology, employees tend to assess and compare the advantages and disadvantages of the new technology based on their prior knowledge (Kyratsis et al., 2012). Specifically, according to Bossink (2018), the adoption of new technology is associated with the flow of knowledge. Therefore, when a business intends to implement new technology, it requires users' understanding of this technology before making a decision to apply it. According to the Theory of Planned Behaviour, Ajzen (1991) pointed out that perceived behavioural control is a determinant factor influencing human behaviour. Perceptions of usefulness and perceptions of ease of use are the crucial factors impacting the decision to adopt big data tools in an airline in Turkey (Okcu et al., 2019). Additionally, within the framework of TAM by Venkatesh and David (2000), factors related to perceptions of usefulness and perceptions of ease of use explained the decision to adopt technology.

### 2.1. Perceived Usefulness

When making decisions about whether to use a new application or technology, individuals often make decisions based on their confidence about the effectiveness of the technology in helping them complete tasks. This is referred to as perceived usefulness (Davis, F.D., 1989). Specifically, usefulness is defined as "the degree to which a person believes that using a specific system would enhance their job performance." Confidence in the existence of a positive relationship between job performance and usage will be perceived as a technology with high usefulness (Davis, F.D., 1989).

### 2.2. Perceived Ease of Use

In addition to users perceiving the usefulness of new technology, they may also be aware of whether using that technology is difficult and if its performance can outmatch their efforts. This is referred to as perceived ease of use (Davis, F.D., 1989). According to Radner and Rothschild (1975), effort is considered a limited resource for human activities and tasks. Therefore, when a technology is perceived as easier to use compared to other technologies, it becomes more readily accepted by users (Davis, F.D., 1989).

### 2.3. The relationship between Perceived Usefulness, Perceived Ease of Use, Behaviour Intention and Job Satisfaction

According to Choi and Ji (2015), they concluded that perceptions of usefulness and ease of use are critical factors influencing the decision on the intention to adopt and use self-driving vehicles. Particularly, their study indicated that trust is one of the factors impacting user perceptions. However, in Choi and Ji's (2015) study, the importance of trust in user acceptance when adopting new technology was explained through risk perception, usefulness, and ease of use perceptions. This highlights the difference between their study and ours, with a specific focus on the role of trust in shaping user perceptions. Therefore, it is the distinguishing point from our study because perception factors in this study are placed at a higher level, being the main independent variables. Consequently, our study will directly explore employees' perceptions, examining and evaluating their awareness when their enterprise or company intends to adopt new technology to obtain a detailed and convincing insight into employees' perceptions of new technology in the Industry 4.0 era.

Moreover, Okcu et al. (2019) also indicated that perceptions of usefulness and ease of use influence the decision to use big data tools in an airline company in Turkey. Furthermore, Yadegari De Kordi et al. (2019) found that these two factors influence the intention to adopt new technology. Both studies aimed to explore and evaluate the intention to adopt new technology through user perceptions. Consequently, they also identified factors influencing user perceptions before the intention to use behaviour. However, the purpose of this study is to explore employees' perceptions and evaluations of

satisfaction and commitment when they are aware of new technology and their enterprise or company intends to adopt it. Therefore, this study will not focus deeply on researching perceptions and intentions to use but rather on employees' satisfaction and commitment to their organization and job when the enterprise intends to adopt new technology based on their perceptions.

H1: Perceived Usefulness has positive impact on Behaviour Intention

H2: Perceived Ease of Use has positive impact on Behaviour Intention

## 2.4. Behaviour Intention

Behavioural intention is a greater predictor of conduct in correlational tests than other cognitions, including explicit and implicit attitudes, norms, self-efficacy, perceptions of danger and severity, and personality factors (Chiaburu et al-2011). Conversely, plans are only carried out around half the time (Sheeran and Webb, 2016).

The extent to which an individual believes that using a specific system will enhance their job performance (Davis, 1989), and the degree to which an individual believes that using technology can improve their work performance (Thompson et al., 1991) contribute significantly to the intention to use RPA bots in the workplace. Furthermore, the perception that users will want to perform an activity "because it is perceived as a tool to achieve valuable outcomes different from the activity itself, such as improving performance, increasing salary, or getting a job promotion" (Davis et al., 1992). Other factors of workplace behaviour, such as job engagement, commitment to the organisation, and intention to quit, have been demonstrated to impact job satisfaction (Duc Truong, 2022).

Positive or negative emotions of an individual (evaluative influences) is about performing a target behaviour (Fishbein & Ajzen, 1975). Therefore, the perception of ease of use - that is, whether using the system is easy or difficult - is an initial obstacle for individuals when using the system (Venkatesh, 2000). Ajzen (1991) also stated that the ease or difficulty in performing behaviour can significantly affect the intention to use RPA bots in the workplace. However, once individuals are familiar with the system and gain practical experience with it, the impact of the sense of ease on the intention to use the system will gradually decrease, as individuals now have more procedural knowledge about how to use the system. Therefore, while forming the intention to use the system, individuals will gradually feel relieved, specifically the perceived ease of use, as the result of frequent interaction with the system. Special attention is needed for user-friendly design, including communication between RPA bots and users. Furthermore, RPA bots can use optical character recognition instead of rigid selectors to retrieve information on flexible platforms like websites (Wewerka, 2022).

H3: Behaviour Intention influences Job Satisfaction

## III.     JOB SATISFACTION AND EMPLOYEE COMMITMENT

### 3.1 Job Satisfaction

Job satisfaction is a composite of cognitive and affective responses to the job situation (Reeshad S. D., 2012). Specifically, job satisfaction refers to positive emotions resulting from the evaluation of one's job and professional experiences (Permana et al., 2021). According to Karatepe (2013), a company's success is influenced by various factors, with one of the most crucial being human resources. Therefore, job satisfaction is vital for businesses as higher job satisfaction within a firm positively correlates with its performance (Ostroff, 1992).

As per Evans et al. (1993), the level of job satisfaction is also linked to the quality of life and work-related stress. J. Smids et al. (2019) highlighted opportunities in the context of robotic automation, emphasising that it often demands higher skills and professional development, consequently boosting workers' self-esteem and recognition. Applying BOTs in accounting work, for example, can enable employees to transition to more value-added activities (Lauren A. C. et al., 2022). This aligns with Kaliski's (2007) assertion that job satisfaction implies doing a job well and being recognized for efforts, encompassing happiness, income, career advancement, and achieving other goals leading to contentment.

However, Tim Hinks (2021) concluded that workers particularly fear robots completely replacing them or taking over aspects of their work. When their responsibilities change and job security is at risk, employees start questioning their worth and value (Reinardy, 2012), negatively impacting their job satisfaction (Sverke et al., 2002).

### 3.2 Employee Commitment

According to Porter et al. (1976), commitment to an organisation reflects the nature and quality of the bond between individuals and the organisation. In this context, an individual's commitment to an organisation is established through specific goals and the interconnection of members to achieve those objectives. The commitment model has evolved into three components: affective commitment (emotional attachment of an individual to their organisation), continuance commitment (awareness of the costs associated with leaving one's organisation), and normative commitment (feeling morally obligated to stay with the organisation) (Meyer and Allen, 1991).

It is argued that affective commitment is considered the intention to stay of an employee and is influenced by various factors such as culture, work environment, and coworker relationships (Meyer and Allen, 1997). Additionally, new technologies and other company changes may impact an employee's desire to continue working at a firm. Employee willingness to work in an organisation is often established by exchanging benefits from the organisation (Buchanan, 1974). However, individuals joining an organisation need to meet requirements related to needs, qualifications, skills, and adaptability. When these factors align, the employee's commitment is likely to be stronger. As a result, commitment is determined by a range of organisational and individual factors such as personal characteristics, role-related characteristics, work experience, and relevant role-related attributes.

### 3.3 The relationship between job satisfaction and employee commitment

Most studies consider job satisfaction as an independent variable and organisational commitment as a dependent variable (Gaertner, 1999). As suggested by Mowday et al. (1982), commitment and job satisfaction can be perceived in various ways. Job satisfaction is a reaction to a specific job or job-related issues, while commitment is a more global response to an organisation. Therefore, commitment should be more consistent over time and takes longer to develop after an individual is satisfied with their job.

Feinstein and Vondrasek (2001) analysed the impact of job satisfaction on employees' commitment to the restaurant organisation, and the results demonstrated that the level of satisfaction predicts their commitment to the organisation. Gaertner (1999) also examined determining factors (workload, salary, fairness in distribution, promotion opportunities, supervisor support, etc.) for job satisfaction and commitment to the organisation.

H4: Job satisfaction has positive impact on employee commitment

H (1,3,4): PU affects EC likely to be mediated by both BI and JS

H (2,3,4): PEoU affects EC likely to be mediated by both BI and JS

To summarise the hypotheses based on existing literature and illustrate the relationships among variables, a concept framework is presented in Figure 1.
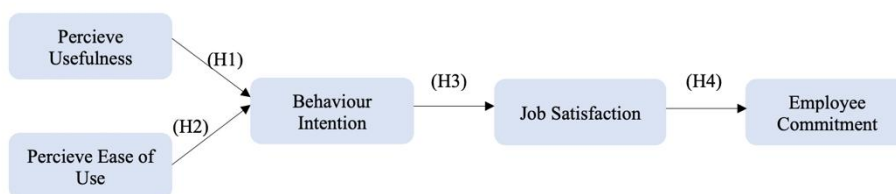


Figure 1: Conceptual Framework

### 4. Research Gap

The first paragraph under each heading or subheading should be flush left, and subsequent paragraphs should have a five-space indentation. A colon is inserted before an equation is presented, but there is no punctuation following the equation. All equations are numbered and referred to in the text solely by a number enclosed in a round bracket (i.e., (3) reads as "equation 3"). Ensure that any miscellaneous numbering system you use in your paper cannot be confused with a reference [4] or an equation (3) designation.

## IV.    METHODOLOGY

### 1. Research design

This study employs a quantitative research design to quantify employee satisfaction and commitment by applying Robotic Process Automation (RPA) in organisations. Christensen (1985) asserts that to determine the strength of the relationship between two variables, a quantitative research design is an appropriate approach. A quantitative study, which is both structured and statistical, provides researchers with the ability to draw conclusions and make informed decisions about an action process. To collect quantitative data, a questionnaire on various factors is utilised to quickly approach survey subjects with flexibility in terms of location and completion time.

### 2. Measurement

The research subjects are employees working in businesses implementing RPA in Hanoi. Therefore, the questionnaire will be accurately translated from English to Vietnamese to best suit the characteristics of this field, aiming for language standardisation. The questionnaire includes measures to assess the impacts of RPA on employee commitment within organisations. These measures are used for the five factors targeted by the study and are developed based on definitions of RPA, its effectiveness on employee workflow, behavioural intentions in applying RPA, and employee satisfaction while working with RPA.

The Perceived Usefulness and Perceived Ease of Use scales are used to measure the effectiveness and ease of application in using RPA, with each scale consisting of 3 questions revolving around the effectiveness and ease of use of RPA by employees in the organisation. These scales are referenced from the work of Wewerka, Dax, and Reichert in the paper "A user acceptance model for Robotic Process Automation".

As for the Behavior Intention scale, it is used to measure employees' intentions to use RPA in their work processes to ensure optimal performance. Employees' behavioural intentions in applying RPA can impact job satisfaction (Cooper et al., 2019) as well as the rate of employee commitment to the organisation (Irefin and Mechanic, 2014).

Through the use of these scales, organisations can mitigate risks in the operational process when implementing RPA.

The measures of Perceived Usefulness, Perceived Ease of Use, Behavior Intention, Job Satisfaction, and Employee Commitment use a 5-point Likert scale. The Likert scale will be implemented sequentially, starting from "1-Strongly Disagree" and continuing to "2-Disagree," "3-Neutral," "4-Agree," and "5-Strongly Agree." The Likert scale is employed to assess the opinions, actions, and understanding of a specific group of individuals regarding prominent concerns. Therefore, the data obtained by the researcher will be in numerical form, simplifying the analysis process.

### 3. Sample and Sampling Method

The research model includes five variables: Perceived Usefulness, Perceived Ease of Use, Behavior Intention, Job Satisfaction, and Employee Commitment. For each variable, a minimum of 40 observations is needed to serve the study data. Hence, this research will have a sample size of 2 observations. Additionally, the study uses a non-probability sampling method, a strategy in which the selection of units from the general population for the study sample may not be equal (Elkatawneh, 2016). The convenient sampling method within non-probability sampling will be employed, where the selection of participants is based on criteria such as their willingness or readiness to participate.

### 4. Data Collection

The convenient sampling method is based on ease of contact and convenience, so Google Forms is used as the platform to create the questionnaire. The survey questionnaire includes three sections: an introduction, questions, and gratitude. The introduction section contains the research group's name, the working unit, the researchers' qualifications, and the research purpose. The question section is presented in the form of closed questions, with multiple-choice answers that participants must respond to. In the question section, which covers five variables, each variable is subdivided into smaller measures. The gratitude section is placed at the end after the questions. The purpose of this section is to express the research group's appreciation and respect to survey participants. The survey is shared through social media platforms such as Facebook, Zalo, Gmail, etc., to reach the surveyed subjects. By targeting this specific group, we can closely monitor the progress of feedback and ensure its high quality.

### 5. Data Analysis

After collecting sufficient data for analysis, the research team filters and removes any missing data to ensure the objectivity of the data. The "outlier labelling rule" approach is used for this purpose. According to Hoaglin and Iglewicz

in 1987, any data outside the predicted range is considered an outlier. The data is then analysed using SPSS, a statistical software application. We use SPSS software in the study to determine the frequencies of control variables, including gender, age, experience, and workplace. Besides, we utilise this software to analyse the model through indices such as Cronbach's Alpha, Exploratory Factor Analysis (EFA). Pearson Correlation. Regression, and Macro Process. These indices help us find the best-fitted models for drawing conclusions and insights about the hypotheses. This study also relies on quantitative methods primarily based on quantitative data and statistical analysis to guide the decision-making process.

**a.        Exploratory Factor Analysis (EFA)**

### Table 1: KMO and Bartlett's Test

| | | | |
|---|---|---|---|
| Independent Variable | Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .772 |
| | Bartlett's Test of Sphericity | Approx. Chi-Square | 378.732 |
| | | df | 15 |
| | | Sig. | <.001 |
| Mediator Variable | Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .780 |
| | Bartlett's Test of Sphericity | Approx. Chi-Square | 546.844 |
| | | df | 15 |
| | | Sig. | <.001 |
| Dependent Variable | Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .828 |
| | Bartlett's Test of Sphericity | Approx. Chi-Square | 421.851 |
| | | df | 15 |
| | | Sig. | <.001 |

**Independent variable**

Both the KMO and Bartlett tests were conducted to evaluate all available data. If the KMO value is above 0.5 and less than 1, it is considered suitable for factor analysis. According to Thao et al. (2022), a significance level for the Bartlett test below 0.05 indicates that the observed variables in the target variable are correlated with each other. Looking at the table data, we can see that the KMO coefficient is 0.772 and has a significance value less than 0.001. Before conducting Exploratory Factor Analysis (EFA) for the independent variables, it is important to check the appropriateness of the independent variables: PU and PEoU.

**Mediator variable**

The KMO coefficient of the two intermediary variables is 0.780, which is higher than 0.5. Additionally, its significance level is less than 0.001. Therefore, when conducting the mediation test: Behaviour Intention and Job Satisfaction, it's important to consider the Factor Loading coefficient of the variables to ensure accurate results.

**Dependent variable**

Similar to the two variables above, it can be seen that the KMO coefficient for the dependent variable is 0.828 and its significance level is less than 0.001. Therefore, it is important to consider the Factor Loading coefficient of this variable to ensure accurate results.

b.      **Cronbach's alpha**

**Table 2: Descriptive statistics and factor loadings for scale items (n = 229)**

| Constructs and the scale items | Mean | S.D. | Factor loadings |
|---|---|---|---|
| *PU (alpha = .692 )* | | | |
| PU1 | 4.052 | 0.9398 | .807 |
| PU2 | 3.476 | .8612 | .705 |
| PU3 | 4.092 | .9530 | .791 |
| *PEoU (alpha = .804 )* | | | |
| PeoU1 | 3.904 | .9954 | .828 |
| PeoU2 | 3.808 | .9402 | .834 |
| PeoU3 | 3.707 | 1.0031 | .824 |
| *BI (alpha = .781 )* | | | |
| BI1 | 3.594 | 1.2341 | .843 |
| BI2 | 3.253 | 1.0499 | .792 |
| BI3 | 2.900 | 1.1369 | .843 |
| *JS (alpha = .856)* | | | |
| JS1 | 3.489 | 1.0704 | .871 |
| JS2 | 3.511 | 1.0371 | .883 |
| JS3 | 3.629 | .9306 | .836 |
| *EC (alpha = .816 )* | | | |
| EC1 | 3.201 | .9795 | .632 |
| EC2 | 3.140 | 1.0751 | ..815 |
| EC3 | 3.275 | 1.0037 | .794 |
| EC4 | 3.498 | .9761 | .743 |
| EC5 | 3.262 | .8119 | .687 |
| EC6 | 3.410 | .9018 | .650 |

The Cronbach's alpha coefficient is used to assess the reliability of each component in the scale. According to Hair et al. (1998), data can be considered reliable if the Cronbach's alpha coefficient falls within the range of 0.65 to 0.75. Furthermore, the relationship between factors and observed variables is demonstrated through the factor loading coefficient. According to Hair et al. (2010), observed variables exhibit strong statistical significance at 0.7 and excellent quality at 0.5, indicating that the minimum factor loading coefficient should be 0.3.

Based on the results of this study, it can be observed that the independent variables (PU and PEoU), the mediator variables (BI, JS), and the dependent variable (EC) all have Cronbach's alpha values ranging from 0.65 and above, which is an acceptable threshold. The values are 0.692, 0.804, 0.781, 0.856, and 0.816 respectively.

**Pearson Correlation**

|  | ECTB | JSTB | BITB | PEoUTB | PUTB |
|---|---|---|---|---|---|
| ECTB | 1 |  |  |  |  |
| JSTB | .585** | 1 |  |  |  |
| BITB | .478** | .386** | 1 |  |  |
| PEoUTB | .113 | .054 | .380** | 1 |  |
| PUTB | .094 | .040 | .455** | .406** | 1 |

** Correlation is significant at the 0.01 level (2-tailed).

EC.  : Employee Commitment

JS   : Job satisfaction

BI : Behaviour Intention

PEoU   : Perceived Ease of Usefulness

PU  : Perceived Usefulness

Based on the information provided, it is evident that the relationships between the factors in the study all have coefficients below 0.05. This indicates that the relationships between these variables are generally significant. Additionally, according to the data table, the relationship between the mediator variable "job satisfaction" and the dependent variable "employee commitment" shows a strong correlation with a coefficient of r = 0.585. However, there are still several relationships between the variables with coefficients below 0.3, indicating that the correlations between them are not strong.

**Table 8: Summary the results of hypothesis testing**

| H1: Perceived Usefulness has positive impact on Behaviour Intention | Supported |
|---|---|
| H2: Perceived Ease of Use has positive impact on Behaviour Intention | Supported |
| H3: Behaviour Intention influences Job Satisfaction | Supported |
| H4: Job satisfaction has positive impact on employee commitment | Supported |
| H (1,3,4): PU affects EC likely to be mediated by both BI and JS | Supported (Full mediation) |
| H (2,3,4): PEoU affects EC likely to be mediated by both BI and JS | Supported (full mediation) |

## V. CONCLUSION

A recent study by Kaspersky on the consequences of automation and increased robot usage has revealed that the level of robotization is becoming more prevalent in companies. A notable finding in the study is that the majority of respondents believe that robots can help industries increase economic benefits and protect humans from hazardous tasks. This viewpoint is shared by over half of the surveyed employees, with 52% believing that robot usage can accelerate and improve production processes while reducing costs, and 60% believing that robotization can free humans from strenuous or dangerous tasks, thus reducing risks related to life and health in the future. This could help employees avoid mundane tasks, retain more interesting job positions, and earn higher salaries (36%). According to recent information from Viettel Post - a leading logistics company in Vietnam that has implemented AGV robot technology, the deployment of 200 robots in goods sorting operations has reduced the error rate to nearly zero, shortened the delivery time from 8-10 hours to 3.5 times the productivity. However, this has led to a 60% reduction in the workforce.

The main objective of this study is to investigate the impact of Robotic Process Automation (RPA) on employee commitment in several prominent industry sectors. The analysis results show a positive correlation between the factors studied. It can be observed that RPA, being a new technology, significantly impacts employees' intention to use and their perception of ease of use, thereby increasing satisfaction and commitment to the company. The Logistics & Transportation and Manufacturing industries show normal job satisfaction when intending to adopt RPA. On the other hand, other sectors also express satisfaction with their work when intending to adopt RPA. Regarding work commitment, the Logistics & Transportation and Manufacturing industries rate as normal when intending to adopt RPA, while other sectors all agree to commit when intending to adopt RPA. Findings indicate that "human interaction" and "soft skills" remain irreplaceable and cannot be replicated by RPA; employees should view RPA as an opportunity rather than a threat, as they may find satisfaction in tackling challenging issues at work, and organisations must prepare well before and after changes in the post-industrial era (Amisha Bhargava et al., 2020). While concerns about job displacement are valid, the future of work is marked not only by replacing humans with robots but also by their coexistence (Lee Kasowaki et al., 2023).

Finally, in the process of collecting and analysing data from 229 observations, we found that "intention to use" directly impacts "employee commitment" without the need for intermediary variables. This study focuses on Vietnam in general and some prominent industry sectors, so future researchers may continue to study the impact of Robotic Process Automation on employee commitment in different regions and industries.

## References

[1]  Cooper, Lauren, et al. "Perceptions of Robotic Process Automation in Public Accounting." SSRN Electronic Journal, 2019, https://doi.org/10.2139/ssrn.3445005.

[2]  Cewe, Christoph, et al. "Minimal Effort Requirements Engineering for Robotic Process Automation with Test Driven Development and Screen Recording." Semantic Scholar, 2017, www.semanticscholar.org/paper/Minimal-Effort-Requirements-Engineering-for-Robot ic-Cewe-Koch/8090313a8c97cdac80cd008f713d0906c4de37bd.

[3]  Evans, B.K. and Fischer, D.G. (1993) The Nature of Burnout: A Study of the Three-Factor Model of Burnout in Human Service and Non-Human Service Samples. Journal of Occupational and Organizational Psychology, 66, 29-38. https://doi.org/10.1111/j.2044-8325.1993.tb00514.x

[4]  Smids, J., Nyholm, S. & Berkers, H. Robots in the Workplace: a Threat to—or Opportunity for—Meaningful Work?. Philos. Technol. 33, 503–522 (2020). https://doi.org/10.1007/s13347-019-00377-4

[5]  Lauren A. Cooper, D. Kip Holderness, Trevor L. Sorensen, David A. Wood; Perceptions of Robotic Process Automation in Big 4 Public Accounting Firms: Do Firm Leaders and Lower-Level Employees Agree?. Journal of Emerging Technologies in Accounting 1 March 2022; 19 (1): 33–51. https://doi.org/10.2308/JETA-2020-085

[6]  Reinardy, S. (2012). Job Security, Satisfaction Influence Work Commitment. Newspaper Research Journal, 33(1), 54-70. https://doi.org/10.1177/073953291203300105

[7]  Kaliski, B.S. (2007). Encyclopedia of Business and Finance, Second edition, Thompson Gale, Detroit, p. 446

[8]  Hinks, T. Fear of Robots and Life Satisfaction. Int J of Soc Robotics 13, 327–340 (2021). https://doi.org/10.1007/s12369-020-00640-1

[9]  Teniente, Ernest, et al. Business Process Management Workshops : BPM 2017 International Workshops, Barcelona, Spain, September 10-11, 2017, Revised Papers. Cham, Springer International Publishing, 2018.

[10] Statista Research Department. (2020) "RPA Adoption and Investment Rates by Organization Size Worldwide 2019." www.statista.com/statistics/1017027/worldwide-robotic-process-automation-adoption-investment-rates-organization-size/. Accessed 16 Jan. 2024.

[11] Dalal, R. S. (2012). Job attitudes: Cognition and affect. In N. W. Schmitt, S. Highhouse, & I. B. Weiner (Eds.), Handbook of psychology: Industrial and organizational psychology (pp. 341–366). John Wiley & Sons, Inc..

[12] Permana, A., Aima, M. H., Ariyanto, E., Nurmahdi, A., Sutawidjaya, A. H., & Endri, E. (2021). The effect of compensation and career development on lecturer job satisfaction. Accounting, 7(6), 1287–1292. https://doi.org/10.5267/j.ac.2021.4.011

[13] Karatepe, O. M. (2013). High-performance work practices and hotel employee performance: The mediation of work engagement. International Journal of Hospitality Management, 32(1), 132–140. https://doi.org/10.1016/j.ijhm.2012.05.003

[14] Ostroff, C. (1992). The relationship between satisfaction, attitudes, and performance: An organizational level analysis. Journal of Applied Psychology, 77(6), 963–974. https://doi.org/10.1037/0021-9010.77.6.963

[15] Manodip Ray Chaudhuri, and Partha Naskar. "Job Satisfaction: The Eventual Smidgeon for Occupational Consummation and Contentment in Profession." Dlsu Business & Economics Review, vol. 24, no. 1, 1 Jan. 2014, pp. 1–1.

[16] Yeves, Jesus, et al. "Age and Perceived Employability as Moderators of Job Insecurity and Job Satisfaction: A Moderated Moderation Model." Frontiers in Psychology, vol. 10, 12 Apr. 2019, https://doi.org/10.3389/fpsyg.2019.00799.

[17] Sverke, M., Hellgren, J. and Näswall, K. (2002), "No security: a meta-analysis and review of job insecurity and its consequences", Journal of Occupational Health Psychology, Vol. 7 No. 3, pp. 242-264.

[18] Eslami, J. and Gharakhani, D. (2012) Organizational Commitment and Job Satisfaction. ARPN Journal of Science and Technology, 2, 85-91.

[19]  Meyer, J. P., & Allen, N. J. 1991. A three-component conceptualization of organizational commitment. HumanResource Management Review,1: 61-89

[20]  Porter, L., Crampon, W. and Smith, F. (1976), "Organizational commitment and managerial turnover: a longitudinal study", Organizational Behaviour and Human Performance, Vol. 15 No. 1, pp. 87-98.

[21]  Meyer, J. P., & Allen, N. J. 1997. Commitment in the workplace: Theory, research, and application. Thousand Oaks,CA: Sage.

[22]  Cem Dilmegani. "44 RPA Statistics from Surveys/ Studies: Market Size, Adoption." Research.aimultiple.com, 5 Sept. 2020, research.aimultiple.com/rpa-stats/.

[23]  Duc Truong, et al. Robotic Process Automation and Its Effect on Employees' Attitude and Behaviour. Dec. 2022, https://doi.org/10.13140/RG.2.2.13856.25600.

[24]  Venkatesh, Viswanath, and Hillol Bala. "Technology Acceptance Model 3 and a Research Agenda on Interventions." Decision Sciences, vol. 39, no. 2, May 2008, pp. 273–315, core.ac.uk/download/pdf/144826641.pdf, https://doi.org/10.1111/j.1540-5915.2008.00192.x.

[25]  Venkatesh, Viswanath, and Fred D. Davis. "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies." Management Science, vol. 46, no. 2, Feb. 2020, pp. 186–204.

[26]  Langmann, Christian, and Daniel Turi. Robotic Process Automation (RPA) - Digitization and Automation of Processes. Springer EBooks, 1 Jan. 2022. Accessed 16 Jan. 2024.

[27]  Axmann, Bernhard, and Harmoko Harmoko. "Process & Software Selection for Robotic Process Automation (RPA)." Tehnički Glasnik, vol. 16, no. 3, 23 June 2022, pp. 412–419, https://doi.org/10.31803/tg-20220417182552.

[28]  Eulerich, Marc, et al. "A Framework for Using Robotic Process Automation for Audit Tasks†." Contemporary Accounting Research, 14 Aug. 2021, https://doi.org/10.1111/1911-3846.12723.

[29]  Uklańska, Anna. "Robotic Process Automation (RPA) – Bibliometric Analysis and Literature Review." Foundations of Management, vol. 15, no. 1, 1 Jan. 2023, pp. 129–140, https://doi.org/10.2478/fman-2023-0010.

[30]  Fred D. Davis. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." ResearchGate, 1989, http://dx.doi.org/10.2307/249008.

[31]  Wewerka, Judith, et al. "A User Acceptance Model for Robotic Process Automation." 2020 IEEE 24th International Enterprise Distributed Object Computing Conference (EDOC), Oct. 2020, https://doi.org/10.1109/edoc49727.2020.00021.

[32]  Irefin, P. and Mechanic, M.A., 2014. Effect of employee commitment on organizational performance in Coca Cola Nigeria Limited Maiduguri, Borno state. Journal of Humanities and Social Science, 19(3), pp.33-41

[33]  Elkatawneh, D.H., 2016. Comparing qualitative and quantitative approaches (pp. 1-5). SSRN.

[34]  Christensen, G.D., Simpson, W.A., Younger, J.J., Baddour, L.M., Barrett, F.F., Melton, D.M. and Beachey, E.H., 1985. Adherence of coagulase-negative staphylococci to plastic tissue culture plates: a quantitative model for the adherence of staphylococci to medical devices. Journal of clinical microbiology, 22(6), pp.996-1006.

[35]  Hoaglin, D.C. and Iglewicz, B., 1987. Fine-tuning some resistant rules for outlier labeling. Journal of the American Statistical Association, 82(400), pp.1147-1149.

[36]  Okcu, S., Koksalmis, G. H., Basak, E., and Calisir, F. (2019). Factors Affecting Intention to Use Big Data Tools: An Extended Technology Acceptance Model. In Industrial Engineering in the Big Data Era (401-416). Springer, Cham.

[37]  Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. Information Systems Research, 11, 342-365.

[38]  Kyratsis Y, Ahmad R, Holmes A. (2012). Technology adoption and implementation in organizations: comparative case studies of 12 English NHS Trusts. BMJ Open, 2, 1-9.

[39] Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.

[40] Bossink, B. (2018). The influence of knowledge flow on sustainable innovation in a project-based industry: From demonstration to limited adoption of eco-innovations. Journal of cleaner production, 193, 249-262.

[41] Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). SEM: An introduction. Multivariate data analysis: A global perspective, 629-686.

[42] Choi, J. K., and Ji, Y. G. (2015). Investigating the importance of trust on adopting an autonomous vehicle. International Journal of Human-Computer Interaction, 31(10), 692-702.

[43] YadegariDe Kordi, E., Shuib, L., Nilashi, M., and Asadi, S. (2019). Decision to adopt online collaborative learning tools in higher education: A case of top Malaysian universities. Education and Information Technologies, 24(1), 79-102

[44] Radner, R., and M. Rothschild. 1975. " On the Allocation of Effort." Journal of Economic Theory 10 (3): 358 – 376. doi: 10.1016/0022-0531(75)90006-X.

[45] Hofmann, P., Samp, C. and Urbach, N. (2019). Robotic process automation. Electronic Markets, [online] 30(1). doi:https://doi.org/10.1007/s12525-019-00365-8.

[46] Institute for Robotic Process Automation. (2015). Introduction to robotic process automation: a Primer. 1-34. Retrieved from https://www.businesssystemsuk.co.uk/uploads/attachments/Papers/Robotic-Process-Automation-June2015.pdf

[47] Penttinen, E., Kasslin, H., & Asatiani, A. (2018). How to choose between robotic process automation and back-end system automation? In the Proceedings of European Conference on Information Systems, Portsmouth, UK. https://aisel.aisnet.org/ecis2018_rp/66

[48] Santos, F., Pereira, R., & Vasconcelos, J. B. (2019). Toward robotic process automation implementation: An end-to-end perspective. Business Process Management Journal, 26(2), 405-420. doi:doi:10.1108/bpmj-12-2018-0380

[49] Fernandez, D., & Aman, A. (2018). Impacts of robotic process automation on global accounting services. Asian Journal of Accounting and Governance, 9, 123-132. doi:10.17576/ajag-2018-09-11

[50] Hallikainen, P., Bekkhus, R., & Pan, S. L. (2018). How OpusCapita used internal RPA capabilities to offer services to clients. MIS Quarterly Executive, 17(1), 41-52.

[51] Lacity, M., & Willcocks, L. P. (2017). A new approach to automating services. MIT Sloan Management Review, 58(1), 1-16.

[52] Zhang N., Liu B., 2019. Alignment of business in robotic process automation. International Journal of Crowd Science.http://doi.org/10.1108/IJCS-09-2018-001.

[53] Lacity M.C., Willcocks L.P., 2016. A new approach to automating services. MIT Sloan Management Review, Fall. ISSN 1532-9194.

[54] Sutherland, C. (2013). Framing a Constitution for Robotistan: Racing with the Machine of Robotic Automation : Hfs Research.

[55] Rajesh, K.V.N., Ramesh, K.V.N. and Rao, H., 2018. Robotic Process Automation: A Death knell to dead-end jobs. CSI Communications-Knowledge Digest for IT Community, Volume, 42, pp.10-14.

[56] Sheeran, P., Webb, T.L., 2016. The intention–behavior gap. Soc. Personal. Psychol. Com-pass 10 (9), 503–518.

[57] Sheeran, P., Harris, P.R., Epton, T., 2014. Does heightening risk appraisals change people's intentions and behavior? A meta-analysis of experimental studies. Psychol. Bull. 140 (2), 511–543.

[58] Chiaburu, D.S., Oh, I.S., Berry, C.M., Li, N., Gardner, R.G., 2011. The five-factor model of personality traits and organizational citizenship behaviors: a meta-analysis. J. Appl. Psychol. 96 (6), 1140.

[59]  Amisha Bhargava, et al. "Employees' Perceptions of the Implementation of Robotics, Artificial Intelligence, and Automation (RAIA) on Job Satisfaction, Job Security, and Employability." Journal of Technology in Behavioral Science, vol. 6, no. 6, 12 Aug. 2020, link.springer.com/article/10.1007/s41347-020-00153-8, https://doi.org/10.1007/s41347-020-00153-8.

[60]  "Most Employees Fear Robot Hacking but Believe They Should Be Used More in Production." Www.kaspersky.com, 23 Nov. 2022, www.kaspersky.com/about/press-releases/2022_most-employees-fear-robot-hacking-but-believe-they-should-be-used-more-in-production.

[61]  Fishbein, M., I. Ajzen. 1975. Belief,Attitude,Intention and Behavior:An Introduction to Theory and Research. Addison-Wesley, Reading, MA

[62]  Davis, F. D. 1992. Extrinsic and intrinsic motivation to use computers in the workplace. J.Appl.Social Psych.

[63]  Thompson, R. L., C. A. Higgins, J. M. Howell. 1991. Personal com-puting: Toward a conceptual model of utilization.

[64]  Kasowaki, L., & Jack, E. (2023). Robots at Work: Robotics Process Automation and the Future of Employment.

[65]  Hoàng Thuỳ. "Viettel Post Dùng 200 Robot Chia Hàng Thay Con Người: Làm Việc Được Trong Bóng Tối, Không Cần Điều Hòa, Sản Lượng Tăng 3,5 Lần, Nhân Sự Giảm 60%." An Ninh Tiền Tệ - Tạp Chí Người Đưa Tin Pháp Luật, 18 Jan. 2024, antt.nguoiduatin.vn/viettel-post-dung-200-robot-chia-hang-thay-con-nguoi-lam-viec-duoc-trong-bong-toi-khong-can-dieu-hoa-san-luong-tang-35-lan-nhan-su-giam-60-8441.html.

[66]  Davis, F., D.,  (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13, (3), 319-340.

APPENDIX

Perceived usefulness (J. Wewerka, S. Dax and M. Reichert, 2020)
1. Using RPA bots in my job increases my productivity.
2. Using RPA bots enables me to accomplish tasks more quickly
3. Overall, I find RPA bots useful in my job.

Perceived ease of use (J. Wewerka, S. Dax and M. Reichert, 2020)
1. IfinditeasytogetRPAbotstodowhatIwantthemtodo.
2. Learning to work with RPA bots is easy for me.
3. Overall, I find RPA bots easy to use.

Behavioural intention (J. Wewerka, S. Dax and M. Reichert, 2020)
1. I intend to use RPA bots frequently.
2. I will always try to use RPA bots if my task are suitable.
3. I will use RPA bots in the near future.

Work Satisfaction (Lauren A. Cooper, D. Kip Holderness, Trevor L. Sorensen, David A. Wood, 2022)
1. RPA has improved my work-life balance.
2. RPA has created new opportunities for me at work.
3. RPA has increased my job satisfaction.

Employee commitment (Irefin and Mechanic, 2014)
1. I feel myself to be a part of this organisation
2. I am quite proud to be able to tell people the company
3. The offer a little more money with another company would not seriously make methink of changing job
4. I would recommend a close friend to join the company
5. To know that my own work has made a contribution to the good of the organisationwould please me
6. In my work, I like to feel that I am making some contribution, not for myself but forthe organisation as well