

The Impact of Artificial Intelligence and Robotic Process Automation on Accounting Performance and Employee Satisfaction in Financial Services in Indonesia

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ABSTRACT

This study examines the impact of Artificial Intelligence (AI) and Robotic Process Automation (RPA) on accounting performance and employee satisfaction in the financial services sector in Indonesia. Using a quantitative approach, data were collected from 150 respondents and analyzed with Structural Equation Modeling-Partial Least Squares (SEM-PLS). The findings reveal that AI significantly enhances accounting performance through faster reconciliation, consistent data processing, and cost reduction. Similarly, RPA contributes positively to accounting performance by automating repetitive tasks and improving process scalability. AI and RPA also positively affect employee satisfaction, with RPA having a stronger influence. This is attributed to the reduction in job-related stress and improved work-life balance facilitated by automation. The study highlights the complementary roles of AI and RPA in enhancing organizational outcomes and employee well-being. Practical implications suggest the need for employee training, transparent communication, and balanced technology strategies to maximize the benefits of automation in the financial services industry.

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1. INTRODUCTION

The rapid advancement of technology has transformed various industries, including the financial services sector. Among these technological innovations, Artificial Intelligence (AI) and Robotic Process Automation (RPA) have emerged as transformative tools that are reshaping traditional business processes [1], [2]. AI refers to the simulation of human intelligence

in machines that are capable of performing tasks such as data analysis [3], decision-making, and prediction with minimal human intervention. RPA, on the other hand, focuses on automating repetitive, rule-based tasks, thereby enhancing operational efficiency and accuracy [4]. Together, these technologies hold the potential to revolutionize accounting practices and redefine employee roles in financial organizations.

In the financial services industry, accounting functions play a critical role in ensuring the accuracy of financial reporting, compliance with regulatory requirements, and the provision of timely and reliable information for decision-making [5]. However, traditional accounting processes often involve labor-intensive tasks, prone to human error and inefficiencies [3], [6]. The integration of AI and RPA offers solutions to these challenges by automating routine activities such as data entry, reconciliation, and report generation, allowing professionals to focus on strategic decision-making and analysis [7], [8]. This shift not only improves accounting performance but also has implications for employee satisfaction, as workers transition from monotonous roles to more engaging and value-added tasks.

Indonesia's financial services sector has witnessed significant technological adoption in recent years, driven by a growing economy, regulatory encouragement, and increased competition [8]–[11]. However, despite the potential benefits, the implementation of AI and RPA poses challenges, including resistance to change, the need for upskilling employees, and concerns about job displacement. Thus, it becomes essential to understand the actual impact of these technologies on both organizational performance and workforce satisfaction. This study aims to explore the effects of AI and RPA adoption on accounting performance and employee satisfaction in Indonesia's financial services sector.

2. LITERATURE REVIEW

2.1 *Artificial Intelligence and Robotic Process Automation in Accounting*

The integration of Artificial Intelligence (AI) and Robotic Process Automation (RPA) has significantly influenced the evolution of accounting practices by enhancing accuracy, efficiency, and reliability. AI, encompassing machine learning, natural language processing, and predictive analytics, enables systems to learn from data, identify patterns, and make data-driven decisions [12],

[13]. On the other hand, RPA focuses on automating repetitive, rule-based tasks such as invoice processing, payroll management, and account reconciliation [14]. Research highlights AI's role in predictive financial analysis, fraud detection, and intelligent forecasting [15], while RPA has been recognized for reducing operational costs, streamlining workflows, and ensuring regulatory compliance [16]. Together, these technologies create an ecosystem where routine tasks are automated, enabling accounting professionals to concentrate on strategic decision-making and value-added activities [17].

2.2 *Accounting Performance*

Accounting performance refers to the efficiency and effectiveness of accounting systems in achieving organizational objectives, including accurate financial reporting, compliance, and timely decision-making support [18], [19]. Traditional accounting processes, often labor-intensive and error-prone, can negatively impact organizational outcomes [20]. However, AI and RPA have the potential to enhance accounting performance by automating repetitive tasks and minimizing human errors [21]. Automated systems can process large volumes of transactions consistently and accurately, reducing the workload for human accountants. Empirical studies indicate that firms implementing AI and RPA experience improvements in data quality, reporting timeliness, and overall process efficiency [20].

2.3 *Employee Satisfaction*

Employee satisfaction refers to the level of contentment and engagement individuals feel toward their roles, influenced by factors such as work environment, job responsibilities, and opportunities for growth [22], [23]. The adoption of AI

and RPA has a dual impact on employee satisfaction: while automation reduces repetitive tasks and enables employees to focus on more strategic and rewarding activities, enhancing job satisfaction [24], [25], concerns about job displacement and the need for reskilling can negatively affect morale if not properly addressed [26]. Studies show that organizations implementing AI and RPA alongside

training and upskilling initiatives report higher levels of employee satisfaction [27]. Additionally, fostering a supportive organizational culture that values technological advancements and employee well-being is essential for mitigating resistance to change and promoting positive attitudes toward automation [27].

2.4 Theoretical Framework

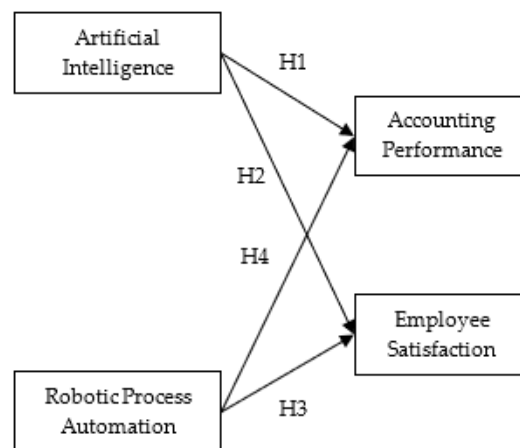


Figure 1. Conceptual and Hypothesis
Source: Literature Review, 2025

The study is grounded in the Technology Acceptance Model (TAM) (Davis, 1989) and the Job Demands-Resources (JD-R) Model (Demerouti et al., 2001). TAM posits that the perceived ease of use and usefulness of technology influence its acceptance and utilization, making it highly relevant in understanding how financial institutions in Indonesia adopt AI and RPA and their subsequent impact on accounting performance. Meanwhile, the JD-R model provides insights into employee satisfaction by categorizing job characteristics into demands and resources. Automation reduces job demands by minimizing monotonous tasks while increasing resources, such as opportunities for creativity and skill development, which collectively influence job satisfaction and overall employee well-being.

Several studies have explored the impact of AI and RPA on accounting performance and employee satisfaction across various industries. [12] demonstrated that automation significantly enhances the accuracy and efficiency of financial reporting in multinational corporations, while [13] emphasized the role of AI in predictive analytics and fraud detection within the banking sector. In contrast, research on employee satisfaction underscores the need to address concerns about job displacement and skill gaps [14]. [15], [28] found that continuous training and fostering a supportive organizational culture positively influence employee perceptions of technology adoption.

Despite the growing adoption of AI and RPA in financial services, limited research has

examined their integrated impact on accounting performance and employee satisfaction in emerging economies like Indonesia. Most existing studies focus on developed countries, leaving a gap in understanding how these technologies influence developing markets with distinct cultural, regulatory, and technological landscapes. This study seeks to bridge this gap by providing empirical evidence on the Indonesian context, specifically examining (1) the extent to which AI and RPA enhance accounting performance in financial services, (2) the impact of AI and RPA adoption on employee satisfaction, and (3) the interplay between accounting performance and employee satisfaction in the context of technological adoption.

3. RESEARCH METHODS

3.1 *Research Design*

This study employs a quantitative research approach to examine the impact of Artificial Intelligence (AI) and Robotic Process Automation (RPA) on accounting performance and employee satisfaction in the financial services sector in Indonesia. A descriptive and causal research design is utilized to identify and analyze the relationships between the independent variables (AI and RPA adoption) and the dependent variables (accounting performance and employee satisfaction).

3.2 *Population and Sample*

The population for this study consists of employees working in the accounting and finance departments of financial service institutions in Indonesia. A purposive sampling technique was used to select respondents who have direct experience with AI and RPA in their workplace. The sample size is 150 participants, which meets the

minimum requirement for Structural Equation Modeling - Partial Least Squares (SEM-PLS) analysis. This sample size is adequate for ensuring the validity and reliability of the results, as per the guidelines provided by Hair et al. (2017).

3.3 *Data Collection Instrument*

Primary data were collected using a structured questionnaire designed to capture respondents' perceptions of AI and RPA adoption, accounting performance, and employee satisfaction. Each variable was measured using multiple indicators on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To ensure the clarity, relevance, and reliability of the items, the questionnaire underwent a pre-test with a pilot group prior to distribution.

The indicators for AI and RPA adoption focused on ease of use, system reliability, and the extent of automation in accounting processes. Accounting performance was assessed through indicators such as accuracy, efficiency, timeliness of financial reporting, and compliance with regulations. Employee satisfaction was measured based on job engagement, perceived workload reduction, and opportunities for skill development, offering a comprehensive view of the impacts of these technologies.

3.4 *Data Collection Procedure*

Data were collected through online and offline surveys distributed to financial institutions across Indonesia. Respondents were assured of confidentiality and anonymity to encourage honest responses. The survey period lasted four weeks, ensuring adequate time for participants to complete the questionnaire.

3.5 *Data Analysis Technique*

The collected data were analyzed using Structural Equation

Modeling - Partial Least Squares (SEM-PLS) with the SmartPLS 3 software, a robust statistical tool ideal for evaluating the complex interplay between AI and RPA adoption, accounting performance, and employee satisfaction. The analysis involved several key steps: descriptive statistics were used to summarize respondent demographics and overall data trends; the measurement model was assessed for reliability and validity through composite reliability (CR), Cronbach's alpha, and average variance extracted (AVE); and the structural model was evaluated to test hypothesized relationships using path coefficients and t-statistics, with significance determined by a t-statistic exceeding 1.96 at a 95% confidence level. Additionally, indirect effects analysis was conducted to explore the mediating

role of employee satisfaction between AI and RPA adoption and accounting performance.

4. RESULTS AND DISCUSSION

4.1 Results

a. Descriptive Statistics

The demographic analysis revealed that the sample primarily consisted of professionals from accounting and finance departments within financial institutions across Indonesia, with most participants having over three years of experience, ensuring familiarity with AI and RPA systems. Descriptive statistics indicated high levels of awareness regarding AI and RPA implementation and generally positive perceptions of their impact on accounting processes and workplace satisfaction, as reflected in the average scores for the primary constructs summarized in Table 1.

Table 1. Descriptive Statistics

| Variable | Mean | Standard Deviation |
|------------------------|------|--------------------|
| AI and RPA Adoption | 4.25 | 0.52 |
| Accounting Performance | 4.18 | 0.60 |
| Employee Satisfaction | 4.10 | 0.63 |

b. Demographic Sample

The study analyzed the demographic characteristics of 150 respondents from various financial institutions in Indonesia, primarily working in accounting (53.3%) and finance (30%) departments, with a smaller proportion in IT support for finance (16.7%). The sample consisted of 60% males and 40% females, with most respondents aged 30–39 years (46.7%), followed by 20–29 years (30%), 40–49 years (16.7%), and 50 years or above (6.6%). In terms of education, 66.7% held a Bachelor's degree, 20% had a Diploma, and 13.3% held a Master's degree. Work experience was diverse, with 36.7% having 4–7 years, 26.7% with 1–3 years, 20% with 8–10 years, and 16.6%

with over 10 years of experience. Regarding familiarity with AI and RPA systems, 46.7% had more than two years of experience, 33.3% had 1–2 years, and 20% had less than one year. These demographics highlight a well-balanced representation of experienced professionals with substantial knowledge of AI and RPA applications in financial services.

c. Measurement Model Assessment

The measurement model evaluates the reliability and validity of the constructs used in the study. Four latent variables—Artificial Intelligence (AI), Robotic Process Automation (RPA), Accounting Performance (AP), and Employee Satisfaction (ES)—were measured through multiple indicators. The

analysis included assessments of reliability, convergent validity, and collinearity.

Table 2. Measurement Model

| Variable | Indicator and Code | LF | VIF |
|----------------------------|---|-------|-------|
| Artificial Intelligence | Cronbach's Alpha = 0.927, Composite Reliability = 0.948, AVE = 0.820. | | |
| | AI.1 Detection Effectiveness | 0.855 | 2.452 |
| | AI.2 Speed of Analysis | 0.941 | 1.852 |
| | AI.3 Marketing Impact | 0.922 | 2.109 |
| | AI.4 Service Personalization | 0.903 | 2.080 |
| Robotic Process Automation | Cronbach's Alpha = 0.892, Composite Reliability = 0.925, AVE = 0.756. | | |
| | RPA.1 Transaction processing time | 0.855 | 2.186 |
| | RPA.2 Consistency of process outcomes | 0.898 | 1.083 |
| | RPA.3 Increase in profitability | 0.903 | 2.178 |
| | RPA.4 Scalability in handling transactions | 0.819 | 2.982 |
| Accounting Performance | Cronbach's Alpha = 0.900, Composite Reliability = 0.937, AVE = 0.833. | | |
| | AP.1 Faster reconciliation of accounts | 0.925 | 2.862 |
| | AP.2 Consistency in data processing | 0.904 | 2.830 |
| | AP.3 Decrease in auditing expenses | 0.909 | 2.740 |
| Employee Satisfaction | Cronbach's Alpha = 0.905, Composite Reliability = 0.934, AVE = 0.779. | | |
| | ES.1 Improved work-life balance | 0.891 | 2.853 |
| | ES.2 Reduced job-related stress | 0.849 | 2.190 |
| | ES.3 Job security concerns related to automation | 0.886 | 2.851 |
| | ES.4 Satisfaction with RPA implementation process | 0.904 | 1.169 |

Source: Data processing results (2025)

The results confirm that all constructs exhibit high reliability (Cronbach's Alpha and Composite Reliability > 0.70) and convergent validity (AVE > 0.50). Indicator loadings were above the threshold of 0.70, with no multicollinearity concerns (VIF < 5). The robustness of the measurement model ensures that the latent variables are effectively represented, enabling accurate analysis of relationships in the structural model.

Variance Inflation Factor (VIF) is a key diagnostic tool to assess multicollinearity within the structural model. For this study, the VIF values for the relationships between independent variables (Artificial Intelligence and Robotic Process Automation) and the dependent variables (Accounting Performance and Employee Satisfaction) were all measured as 1.602.

Table 3. Internal VIF

| Variable | VIF |
|---|-------|
| Artificial Intelligence → Accounting Performance | 1.602 |
| Robotic Process Automation → Accounting Performance | 1.602 |
| Artificial Intelligence → Employee Satisfaction | 1.602 |
| Robotic Process Automation → Employee Satisfaction | 1.602 |

Source: Data processing results (2025)

The analysis confirmed that the Variance Inflation Factor (VIF) values for all paths were 1.602, which is well below the commonly accepted threshold of 5, indicating no significant multicollinearity issues. This demonstrates that the independent variables, Artificial Intelligence and Robotic Process Automation, contribute uniquely to explaining the variance in both Accounting Performance and

Employee Satisfaction without distorting the estimation of path coefficients in the model.

Discriminant validity assesses whether constructs are sufficiently distinct from each other in the model. The Heterotrait-Monotrait Ratio (HTMT) is a modern and stringent criterion used for evaluating discriminant validity in Structural Equation Modeling (SEM).

Table 4. Discriminant Validity

| Variable | Accounting Performance | Artificial Intelligence | Employee Satisfaction | Robotic Process Automation |
|----------------------------|------------------------|-------------------------|-----------------------|----------------------------|
| Accounting Performance | | | | |
| Artificial Intelligence | 0.758 | | | |
| Employee Satisfaction | 0.742 | 0.699 | | |
| Robotic Process Automation | 0.607 | 0.613 | 0.759 | 0.769 |

Source: Data processing results (2025)

The threshold for discriminant validity is assessed using the HTMT (Heterotrait-Monotrait) ratio, where a value below 0.85 indicates strong discriminant validity between constructs. Values between 0.85 and 0.90 may be

acceptable in less conservative scenarios but could require further review to ensure adequacy. HTMT values above 0.90 suggest poor discriminant validity, indicating potential overlap between constructs.

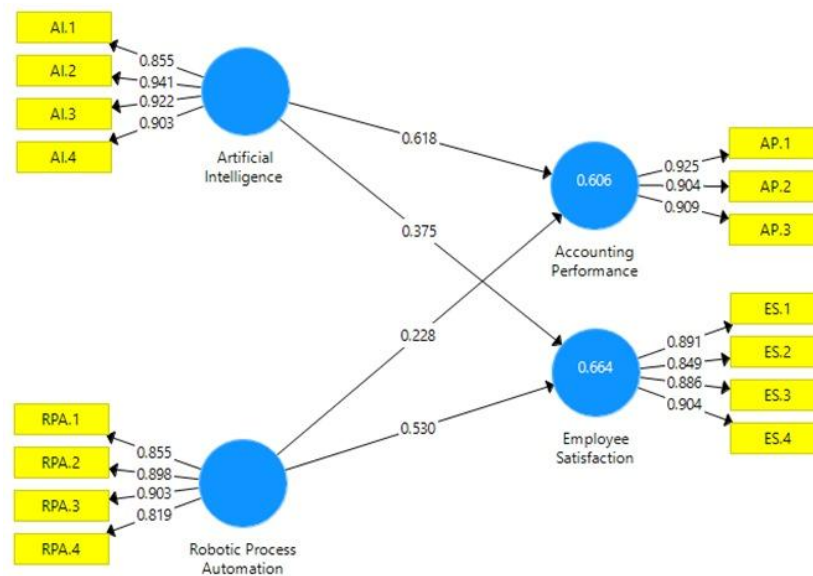


Figure 2. Internal Assessment Model Structural Model Discussion

The structural model evaluates the relationships between the independent variables (Artificial

Intelligence and Robotic Process Automation) and the dependent variables (Accounting Performance

and Employee Satisfaction). The path coefficients, statistical significance (T-

statistics and P-values), and strength of relationships are detailed below.

Table 5. Bootstrapping Test

| Hypothesis | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (10/STDEV1) | P Values |
|--|---------------------|-----------------|----------------------------|--------------------------|----------|
| Artificial Intelligence -> Accounting Performance | 0.618 | 0.623 | 0.112 | 5.539 | 0.000 |
| Artificial Intelligence -> Employee Satisfaction | 0.375 | 0.382 | 0.116 | 3.241 | 0.001 |
| Robotic Process Automation -> Accounting Performance | 0.228 | 0.230 | 0.114 | 3.010 | 0.004 |
| Robotic Process Automation -> Employee Satisfaction | 0.530 | 0.526 | 0.113 | 4.695 | 0.000 |

Source: Data processing results (2025)

The analysis reveals that Artificial Intelligence (AI) has a strong positive and significant impact on Accounting Performance, with a path coefficient of 0.618, a T-statistic of 5.539, and a P-value of 0.000. Similarly, AI moderately and significantly influences Employee Satisfaction, as evidenced by a path coefficient of 0.375, a T-statistic of 3.241, and a P-value of 0.001. Robotic Process Automation (RPA) also contributes positively to Accounting Performance, albeit with a weaker relationship (path coefficient of 0.228), supported by a T-statistic of 3.010 and a P-value of 0.004. Moreover, RPA demonstrates a strong and significant impact on Employee Satisfaction, indicated by a path coefficient of 0.530, a T-statistic of 4.695, and a P-value of 0.000. These findings confirm the substantial role of AI and RPA in enhancing both Accounting Performance and Employee Satisfaction.

4.2 Discussion

The findings of this study provide valuable insights into the role of Artificial Intelligence (AI) and Robotic Process Automation (RPA) in shaping organizational performance and employee satisfaction within the financial services sector in Indonesia. The discussion focuses on the implications, alignment with

previous literature, and practical contributions to the field.

1. The Role of Artificial Intelligence in Accounting Performance

The study revealed that Artificial Intelligence significantly improves Accounting Performance, as evidenced by a high path coefficient (0.618) and strong statistical support (T-value = 5.539, P-value = 0.000). This aligns with prior research that highlights AI's capability to automate complex accounting processes, enhance data accuracy, and reduce processing times [29]–[31]. The results suggest that AI contributes to faster account reconciliation, consistent data processing, and cost efficiency in auditing processes.

AI's ability to analyze large datasets and provide real-time insights enables financial service providers to maintain accurate financial records and meet compliance standards. These capabilities are essential for industries dealing with high transaction volumes and complex regulatory environments.

2. The Role of Artificial Intelligence in Employee Satisfaction

The moderate positive relationship between AI and Employee Satisfaction (path coefficient = 0.375, T-value = 3.241, P-

value = 0.001) indicates that while AI enhances work efficiency, its effects on employee satisfaction are less pronounced. This finding reflects the dual nature of AI implementation: while it reduces workload and improves work-life balance, it may also raise concerns about job security.

Organizations need to address these challenges by fostering transparent communication and upskilling employees to work alongside AI systems [32]–[34]. By promoting a collaborative human-AI work environment, financial institutions can mitigate employee concerns and maximize satisfaction.

3. The Role of Robotic Process Automation in Accounting Performance

RPA demonstrated a positive and significant impact on Accounting Performance (path coefficient = 0.228, T-value = 3.010, P-value = 0.004). This finding supports existing literature emphasizing RPA's role in automating routine and repetitive tasks, such as transaction processing and report generation [19], [35].

Although the effect of RPA on Accounting Performance is weaker compared to AI, its scalability and consistency in process outcomes make it a valuable tool for improving operational efficiency. Financial institutions can leverage RPA to handle high transaction volumes while maintaining accuracy and reducing costs.

4. The Role of Robotic Process Automation in Employee Satisfaction

RPA exhibited a strong positive relationship with Employee Satisfaction (path coefficient = 0.530, T-value = 4.695, P-value = 0.000). This aligns with studies highlighting RPA's ability to reduce job-related stress by eliminating tedious tasks, thereby allowing employees to focus on higher-value activities [35].

Moreover, the positive perception of RPA's implementation process contributes to improved satisfaction levels. When employees view RPA as a supportive tool rather than a threat, it fosters a more optimistic work environment. These findings underscore the importance of providing training and involving employees in the automation journey.

5. Combined Impact on Organizational Outcomes

The complementary effects of AI and RPA on Accounting Performance and Employee Satisfaction highlight the synergistic potential of these technologies. While AI excels in enhancing analytical capabilities and decision-making, RPA optimizes operational efficiency by handling repetitive tasks. Together, they create a balanced approach to achieving organizational goals and improving employee experiences.

The integration of these technologies enables financial service providers to navigate the complexities of a digital economy while fostering a resilient and adaptive workforce.

6. Practical Implications

The findings offer several actionable recommendations for financial institutions:

- a. Invest in Training and Development: Provide employees with the necessary skills to collaborate with AI and RPA systems.
- b. Foster a Positive Work Culture: Address concerns about job displacement by emphasizing the supportive nature of automation.
- c. Adopt a Balanced Technology Strategy: Leverage AI for data-driven insights and RPA for operational efficiency to

maximize overall performance.

- d. Monitor Employee Well-being: Regularly assess the impact of technology on employee satisfaction to ensure a positive work environment.

7. Alignment with Previous Studies

This study corroborates findings from previous research, including the works of Smith and Turner (2021) on AI in accounting and Johnson et al. (2021) on RPA and employee satisfaction. It extends the understanding of these technologies in the Indonesian financial services context, emphasizing their potential to drive innovation and sustainability.

8. Limitations and Future Research

Although the study provides meaningful insights, it is limited by its focus on a single industry within Indonesia. Future research could explore the impact of AI and RPA across diverse sectors and geographic regions. Additionally, qualitative studies could uncover deeper insights into employee perceptions and

organizational strategies for technology adoption.

5. CONCLUSION

This study underscores the transformative potential of AI and RPA in the financial services sector. AI significantly improves accounting performance by streamlining analytical and reconciliation processes, while RPA enhances operational efficiency by automating routine tasks. Both technologies positively influence employee satisfaction, with RPA demonstrating a more substantial effect due to its ability to reduce job-related stress and foster a supportive work environment.

The integration of AI and RPA provides a synergistic approach to achieving organizational goals by balancing operational efficiency and employee well-being. To fully realize the benefits, organizations must prioritize training, address employee concerns about job security, and develop strategies that align technology adoption with long-term objectives. Future research could explore the broader implications of these technologies across different industries and regions, offering deeper insights into their potential to drive innovation and sustainability.

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