

Factors influencing the employee adoption of e- procurement platforms. Evidence from ABC Bank

Erandi Hewamadduma¹, Nalinda Nuwan^{1*}, Gethmi Siriwardana¹

¹School of Management, Business Management School (BMS), Sri Lanka

*nalinda.n@bms.ac.lk

Abstract

Understanding the factors that influence the adoption of electronic procurement platforms has become crucial for successful implementation as e-procurement's significance grows within organisations. The ABC bank is the focus of this study's investigation of the factors influencing the adoption of e-procurement. The research methodology used a questionnaire survey strategy, to gather data from a sample size of 50 employees. Correlation and regression data analysis were conducted on the primary data collected. According to the study's findings, compatibility and perceived relative advantages have a key role in the adoption of e-procurement within ABC bank. The study identified that the e-procurement platforms should be simple as well as compatible with the current system in order to enhance the efficacy of the overall process.

Keywords: e-Procurement, Technology Adoption, Banking

1. Introduction

1.1 Background of the study

With the purpose of enhancing their procurement as well as supply chain business operations, organisations are increasingly adopting e-procurement platforms (Hadiwidjojo, Anggraini, & Subagja, 2021; Sadeghi, Zulkifli, & Abu Bakar, 2021; Zailani, Shaharudin, Iranmanesh, & Tari, 2020; Zhou, Wu, Zhang, & Fan, 2022). Electronic procurement has demonstrated a rising trend of being used in industries as well as in government over the past ten years, with departments in the government lagging behind their industry counterparts (Huang, Zhang, & Xiong, 2020; Song, Park, & Kim, 2021). Business-business, government-business, and government-government domains are few of the areas of the applications that are included under the purview of e-procurement (Chen, Zhang, Cai, & Zhu, 2021). Government organisations differ from private enterprises since the public expects them to purchase goods as well as services that benefit society (Golshan, ShafieiNikabadi, Zarei, & Rahimi-Kian, 2019).

Recent literature indicates the policymakers' persistent influence on government procurement policies. However, new technologies, including e-procurement platforms, have completely changed the way government procurement is carried out, making it more effective, transparent, and cost-efficient (Mahmood, Asghar, Raja, & Asghar, 2021; Ramos, Pires, & Cardoso, 2021; Raza, Arif, Javaid, & Tariq, 2022). In addition, these developments have made it possible for a greater variety of suppliers to engage in government procurement, which has a positive impact on the market by fostering innovation and competition (Mahmood et al., 2021; Raza et al., 2022).

1.2 Organisational Overview

ABC bank is a leading bank governed by the government of Sri Lanka. ABC bank has switched from manual processes to an e-procurement platform to enhance productivity. However, employees of ABC bank who use the e-procurement platform still follow manual processes for sourcing, negotiating terms, purchasing items, receiving and inspecting them as necessary, and documenting each stage of the process.

1.3 Problem Statement

According to Abdulai and Hinson (2018), organisations are now procuring indirect supplies for production and sales using electronic procurement systems by facilitating direct communication with vendors. E-procurement systems shorten the buying cycle and reduce the quantity of paperwork as well as the administrative burden associated with the procurement process. However, some of the employees in the procurement division still prefer the traditional manual procurement procedures, despite the fact that all of them are required to be using the e-procurement system. Furthermore, despite the bank introducing this system to the whole Procurement Division (with a workforce of 150 employees), only a portion of them have expressed any interest in adapting and utilising it. Therefore, it is important to understand why some employees still prefer the manual system over the e-procurement platform.

1.4 Research Aim

The research aim of this study is to evaluate the factors that have an impact on employee adoption of the e-procurement platform at ABC bank.

1.5 Scope

This study surveyed 50 employees of ABC Bank to investigate the factors that influence their adoption of the e-procurement platform.

2. Research Methodology

The systematic sampling method is carried out in this mono method quantitative research. The names of the 150 employees are listed alphabetically with the third number taken into consideration. The sample size was 50.

2.1 Conceptual framework

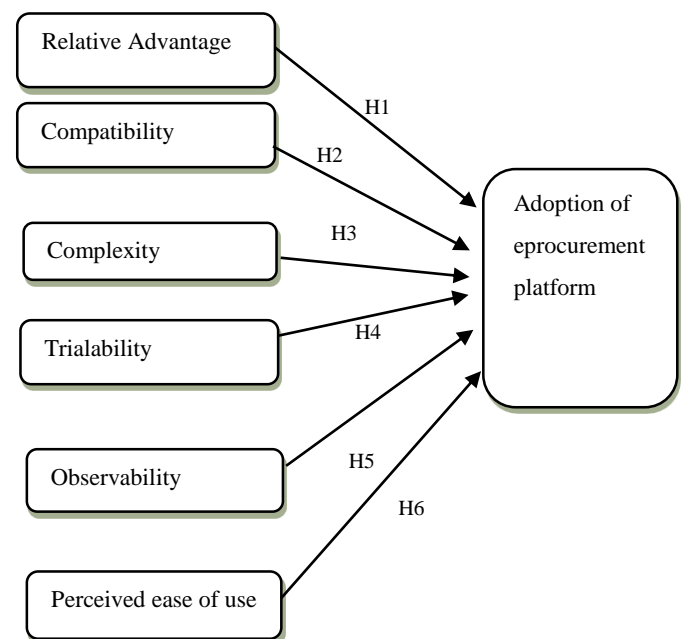


Figure 1. Conceptual framework

2.2 Hypothesis development

The following hypotheses were formulated based on the conceptual framework.

H1-There is a relationship between relative advantage and the employee adoption of e procurement platform.

H2 -There is a relationship between compatibility and the employee adoption of e-procurement platform.

H3-There is a relationship between complexity and the employee adoption of e-procurement platform.

H4-There is a relationship between trialability and the employee adoption of e-procurement platform.

H5 - There is a relationship between observability and the employee adoption of e-procurement platform.

H6-There is a relationship between the perceived ease of use and the employee adoption of e-procurement platform.

2.3 Data Collection

Primary data collection entails getting information directly from the original sources, usually through surveys and questionnaires (Saunders, Lewis, Thornhill, & Bristow, 2015). A printed questionnaire was developed for this study in order to quickly and conveniently gather data.

2.4 Sample Size

To ensure fair representation from various divisions and hierarchical levels, 50 procurement employees were chosen using the systematic sampling method.

2.5 Pilot Study

A pilot test was carried out with a small group of respondents before the questionnaire was circulated. The pilot test was conducted with 10 ABC bank employees. The pilot study was successful and the questionnaire was thereafter circulated to the entire sample.

3. Findings and Discussion

3.1. Response Rate

A 100% response rate was obtained, i.e. all the 50 chosen employees responded.

3.2. Demographic Analysis

The demographic data of the respondents are given in Table 1.

Table 1. Demographic Data

	Description	Percentage
Gender	Male	36
	Female	64
Age	21-30 years old	14
	31-40 years old	52
	41-50 years old	26
	51-60 years old	8
Work Experience	Less than 1 year	10
	1-2 years	12
	3-5 years	42

	6-10 years	24
	11-15 years	10
	More than 15 years	2

The demographic data reveals that more women (64%) participated than men (36%). The age distribution shows a wide range of individuals in different age groups. However, the majority (52%) of the respondents are between 31-40 years. The majority (42%) of the respondents have 3-5 years of work experience.

3.3 Data Reliability

When a method measures something consistently, it is said to be reliable. The measurement is viewed as reliable if the same outcome can regularly be obtained by applying the same techniques under the same conditions.

Table 2. Cronbach Alpha

Reliability Statistics	
Variable	Cronbach's Alpha
Relative advantage	0.951
Compatibility	0.931
Complexity	0.930
Trialability	0.931
Observability	0.957
Perceived Ease of Use	0.932
Adoption	0.947

The Cronbach's alpha was calculated to evaluate the reliability and the internal consistency of variables. All the variables have Cronbach Alpha values above 0.9, which makes the data highly reliable.

3.4. Correlation Analysis

Table 3. Correlation Analysis

Variables	Correlation Coefficient
Relative Advantage	0.610**
Compatibility	0.664**
Complexity	0.736**
Trialability	0.726**
Observability	0.639**
Perceived Ease of Use	0.703**

Dependent Variable – Adoption

** Significant at the level of 0.05

Table 4. Hypotheses

Hypothesis	Significance	Results
H1	0.000	Accepted
H2	0.000	Accepted
H3	0.000	Accepted
H4	0.000	Accepted
H5	0.000	Accepted
H6	0.000	Accepted

There is a correlation between the independent and dependent variables, if the significance value is less than 5% (0.05). Furthermore, the independent and dependent variables will be positively correlated, if the Pearson Correlation Coefficient is a positive value. The level of correlation based on the Correlation Coefficient is assessed under three categories such as low correlation (0.1 to 0.3), medium correlation (0.3 to 0.5) and strong correlation (0.5-1.0). Accordingly, all the variables of this study are positively correlated and the relationship is statistically significant. Therefore, all the sub-independent variables have a positive correlation with e-procurement adoption.

Ahiaga-Dagbui, Li and Love (2020) found that the adoption of e-procurement is significantly influenced positively by relative advantage, compatibility, and top management support.

While the other factors are negligible, technological variety has a detrimental impact. Furthermore, according to Hsieh, Chen and Chen (2018), adoption of e-procurement is positively influenced by relative advantage, compatibility, trialability, trust, and dependency while supplier pressure, observability, and complexity have no apparent effects.

Wang, Wang and Li (2020) found that Relative advantage, Compatibility, Trialability and the Observability have a positive relationship with the adoption of e-procurement. Similarly, Yang, Gu and Zeng (2019) have suggested that there is a strong association between e-procurement adoption and the Perceived Ease of Use. Furthermore, Maresova, Drahosova and Kotaskova (2021) have found that there is a relationship between e-procurement adoption and relative advantage as well as compatibility.

3.5. Multiple Linear Regression Analysis

In the context of Multiple Linear Regression Analysis, the R square value is a statistical measure which assesses the accuracy of the model. As shown in Table 4, the R square value of the regression model is 0.637, which means the model is a good fit.

Table 5. Model Summary and ANOVA

Model Summary	
R square	0.637
ANOVA	
Model	Significance
Overall effect	0.000

The significance value is 0.000 which reflects that the model is overall acceptable.

Table 6. Significance

Significance	
Sub- independent Variable	Sig. 5%
Relative Advantage	0.039
Compatibility	0.029
Complexity	0.210
Trialability	0.374
Observability	0.304
Perceived Ease of Use	0.990

As shown in Table 6, the multiple linear regression analysis reveals that Relative Advantage and Compatibility are the most significant variables (at 5% Significance level).

3.6 Descriptive Analysis

Table 7 gives the mean values for the statements created for each of the variables.

Table 7. Descriptive Analysis

Relative Advantage	Mean Value
I find the e-procurement system is better than following traditional procurement methods.	4.2
My level of efficiency is increased by the e-procurement platform.	4.12
When compared to traditional procurement procedures, the e-procurement platform saves time.	4.5
I find the e-procurement platform as a cost-effective method.	4.48
Compatibility	
My working practices are compatible with the e-procurement platform	4.2
My organisation's other systems and the e-procurement platform integrate well.	3.72
The e-procurement platform is compatible with the requirements of the bank	3.58
The e-procurement platform is compatible with my organisation's culture.	4.02

Complexity	
The e-procurement platform is easy to understand	4.2
The e-procurement platform does not require a lot of effort to learn how to use	3.74
It's easy to learn the e-procurement platform	3.64
I find this e-procurement platform is simple to use	4
Trialability	
I had the opportunity to test the e-procurement platform	4.2
I am permitted to try out the e-procurement platform before committing	3.74
The e-procurement platform has a trial period.	3.68
Testing out the e-procurement platform is easy	3.96
Observability	
I have seen other employees use this e-procurement system	3.78
I have heard good reviews about the e-procurement platform from the other employees	4.24
I believe other employees in the bank are utilising this e-procurement platform	4.14
Perceived Ease of Use	
I find This e-procurement platform as a user-friendly system	4.2
My needs can be easily accommodated by the e-procurement platform because it is adaptable and flexible	3.74
I find it easy to become skillful at using this e-procurement platform	3.7
I find it easy to remember how to use this e procurement platform	4
Adoption	
I am currently using the e-procurement system	3.98
The e-procurement platform is something I expect to use	4.24
The e-procurement platform has been useful to me in my work	4.04

Relative advantage scored an overall mean value of 4.3, which means that the majority of the respondents are satisfied with the relative advantages provided by e-procurement platforms. Compatibility received an overall mean value of 3.9, which means the respondents find the e-procurement platforms compatible. Complexity received an overall mean value of 3.9, which means that the respondents find the e-procurement platforms easy to use. Trialability scored an overall mean value of 3.9, which suggests that trialability is important to the respondents. Observability scored an overall mean value of 4.1, which means that observability is also an important factor. Perceived ease of use received an overall score of 3.9, which means that the majority of the respondents find the e-procurement platform easy to use. Adoption intention received an overall mean score of 4.1, which means the majority of the respondents are willing to adopt the system. Overall, the respondents are satisfied with the e-procurement platform, but there is room for further improvement, since the scores are close to 4. The e-procurement platforms can be further improved to reach a score close to 5.

4. Conclusion

This study has identified seven key determinants which influence employee adoption of the e-procurement platform. This study found that all the sub-independent variables (perceived relative advantage, compatibility, complexity, trialability, observability and perceived ease of use) are positively correlated with the adoption of the e-procurement platform. Furthermore, perceived relative advantage and compatibility are the most significant variables.

These insights can be used by decision-makers to improve the adoption of the e-procurement platform by focusing on the perceived relative advantages and compatibility.

5. Recommendations

Several recommendations can be made to improve the adoption of e-procurement platform at ABC Bank based on the findings of

the study. Since there is a significant positive relationship between compatibility and the adoption of e-procurement, ABC Bank should focus on ensuring that the e-procurement platform is compatible with existing processes, systems, and organisational culture. This can be accomplished by meticulously analysing the system requirements and integrating them to the organisational workflow and infrastructure. To enhance compatibility and decrease disruptions during deployment, customisation possibilities and integration capabilities require to be investigated.

The association among relative advantage and e-procurement adoption is significant, which highlights the importance of convincing staff members of the platform's advantages. The management must demonstrate how e-procurement increases effectiveness, decreases costs, boosts accuracy, and accelerates procurement processes. This can be accomplished by implementing focused training initiatives, raising awareness among the employees of ABC bank, and disseminating early adopter success stories and testimonials. Employee adoption of the platform can be encouraged by focusing on the practical advantages of e-procurement.

References

- Abdulai, M. D., & Hinson, R. E. (2018). A framework for analysing and understanding the software adoption process. *International Journal of Information Management*, 39, 80-89.
- Ahiaga-Dagbui, D. D., Li, H., & Love, P. E. (2020). Adoption of e-procurement in construction: An innovation diffusion theory perspective.
- Chen, M., Zhang, Y., Cai, S., & Zhu, L. (2021). A framework of e-procurement system evaluation for government procurement.
- Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology.

- Golshan, N., ShafieiNikabadi, M., Zarei, B., & Rahimi-Kian, A. (2019). A fuzzy expert system for evaluating e-procurement projects in the public sector.
- Hadiwidjojo, D., Anggraini, R., & Subagja, H. (2021). The relationship between e-procurement, supply chain management, and financial performance. *International Journal of Supply Chain Management*, 10(2), 38-44.
- Hsieh, Y. C., Chen, S. Y., & Chen, Y. M. (2018). The determinants of e-procurement adoption: Evidence from Taiwanese firms.
- Huang, S., Zhang, Y., & Xiong, G. (2020). The effects of institutional pressures on e-procurement adoption by Chinese public organizations. *Journal of Business Research*.
- Lai, C. Y., Wu, H. Y., & Yang, S. C. (2021). Determinants of mobile payment adoption: Moderating effects of perceived compatibility. *Telematics and Informatics*, 63, 101609.
- Mahmood, T., Asghar, S., Raja, U., & Asghar, S. (2021). Impact of e-procurement on supply chain performance: Evidence from Pakistani firms. *International Journal of Information Management*, 57, 102289.
- Maresova, P., Drahosova, L., & Kotaskova, A. (2021). The adoption of e-procurement in the Czech Republic: An innovation diffusion theory perspective. *Sustainability*, 13(3), 1312.
- Ramos, L., Pires, G., & Cardoso, E. (2021). The use of e-procurement in public procurement: A systematic review. *International Journal of Public Sector Management*, 34(4), 418-438.
- Raza, M. F., Arif, M., Javaid, U., & Tariq, W. (2022). Investigating the impact of e-procurement on the performance of the public sector in Pakistan.
- Sadeghi, M., Zulkifli, N., & Abu Bakar, N. (2021). The impact of e-procurement on supply chain performance: A systematic review and meta-analysis. *Journal of Purchasing and Supply Management*, 27(3), 100626.
- Song, S., Park, J., & Kim, H. (2021). Impact of e-procurement on government transparency and efficiency: Focused on the public procurement process in South Korea. *Sustainability*, 13(14), 7981.
- Saunders, M. N., Lewis, P., Thornhill, A., & Bristow, A. (2015). Understanding research philosophy and approaches to theory development.
- Wang, Y., Wang, J., & Li, J. (2020). The impact of perceived usefulness, perceived ease of use, and organisational support on e-procurement adoption in Chinese SMEs.
- Yang, J., Gu, Z., & Zeng, B. (2019). Analysis of factors influencing the adoption of e-procurement: Evidence from China. *Journal of Electronic Commerce Research*, 20(2), 142-156.
- Zailani, S., Shaharudin, M.R., Iranmanesh, M., & Tari, J.J. (2020). An examination of the relationship between e-procurement practices and supply chain performance.
- Zhou, H., Wu, Z., Zhang, C., & Fan, Y. (2022). The influence of e-procurement on supply chain performance: Evidence from China. *Journal of Business Research*, 141, 66-76.