



The Impact of ASYCUDA System Implementation on the Performance of the Sudanese Customs Authority: An Evaluation

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ABSTRACT

The implementation of ASYCUDA system (Automated System for Customs Data) is a critical step towards improving the performance of customs authorities in many countries, including Sudan. The system is designed to streamline processes, enhance efficiency and effectiveness, and reduce the likelihood of errors in data management. This study examines the impact of the ASYCUDA system on the performance of the Sudanese Customs Authority. A quantitative research design was used, and data were collected through a questionnaire from 24 customs officials. Descriptive and inferential statistics, including chi-square and paired samples t-test, were used to analyze the data. The results suggest that the ASYCUDA system has positively influenced the performance of the Sudanese Customs Authority, and customs officials are satisfied with its implementation. The study concludes that the ASYCUDA system can enhance the efficiency and effectiveness of the Sudanese Customs Authority and has important implications for policymakers and practitioners in the field of customs management. It is recommended that the Sudanese Customs Authority continue to use and improve the ASYCUDA system. Moreover, the authority could consider providing more training and support to ensure that all employees can effectively use the system.

Keywords:

ASYCUDA system, Sudanese Customs Authority.

Classification-JEL : F14, F18, P33

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1. INTRODUCTION

The implementation of ASYCUDA system (Automated System for Customs Data) is a critical step towards improving the performance of customs authorities in many countries, including Sudan. The system is designed to streamline processes, enhance efficiency and effectiveness, and reduce the likelihood of errors in data management. Despite the growing popularity of the system, it is not clear how it has influenced the performance of the Sudanese Customs Authority.

2. PROBLEM STATEMENT

The Sudanese Customs Authority has been using the ASYCUDA system for an extended period, but the extent to which it has influenced the performance of the authority is still unknown. The lack of empirical evidence about the impact of the system on the authority's

performance makes it challenging to determine the system's effectiveness in achieving its intended goals. Therefore, the purpose of this study is to evaluate the impact of ASYCUDA system implementation on the performance of the Sudanese Customs Authority.

3. OBJECTIVES

The study aims to achieve the following objectives:

- a. To evaluate the extent of the implementation of the ASYCUDA system has influenced the performance of the Sudanese Customs Authority.
- b. To assess the level of satisfaction among customs officials' regarding the ASYCUDA system's implementation.
- c. To investigate the association between the ASYCUDA system evaluation and gender among customs officials.

4. HYPOTHESES

- a. The implementation of the ASYCUDA system has positively influenced the performance of the Sudanese Customs Authority.
- b. Customs officials are satisfied with the implementation of the ASYCUDA system.
- c. There is no significant association between the ASYCUDA system evaluation and gender among customs officials.

5. METHODOLOGY

The study adopts a quantitative research design. Data is collected through a questionnaire based on 24 individual customs officials who have experience with the ASYCUDA system. The questionnaire consists of closed-ended questions that are analyzed using descriptive and inferential statistics. Descriptive statistics is used to summarize the data, while inferential statistics, such as chi-square and paired samples t-test, is used to test the hypotheses.

6. PREVIOUS STUDIES

Several studies have investigated the impact of the ASYCUDA system on customs performance in different countries. A study conducted by Hilaire and Priam (2007) in Saint Lucia found that the implementation of the ASYCUDA system had a positive impact on the efficiency and effectiveness of the customs authority. The study used a mixed-methods approach, including interviews, surveys, and observations, to collect data from customs officials, traders, and other stakeholders. The study found that the ASYCUDA system had reduced processing times, increased revenue collection, improved data accuracy, and enhanced transparency and accountability.

Another study by Eshun and Osei-Bryson (2015) in Ghana evaluated the impact of the ASYCUDA system on customs performance from the perspective of customs officials from 100 customs officials. The study found that the implementation of the ASYCUDA system had a positive impact on the speed of processing customs declarations, the accuracy of data, and revenue collection. However, the study also identified several challenges in the

implementation of the system, such as inadequate training and technical support, lack of user-friendliness, and poor integration with other systems.

In a study conducted by Jallow (2016) in The Gambia, the impact of the ASYCUDA system on customs performance was evaluated from the perspective of traders. The study used a quantitative research design, and data were collected through a survey from 200 traders. The study found that the implementation of the ASYCUDA system had a positive impact on trade facilitation, including reducing processing times, improving predictability, and enhancing transparency. However, the study also identified challenges related to the system's reliability, availability, and compatibility with other systems.

A study conducted by Ayalew and Bekele (2018) in Ethiopia evaluated the impact of the ASYCUDA system on customs performance using a case study approach. The study collected data from customs officials and traders through interviews and surveys. The study found that the implementation of the ASYCUDA system had a positive impact on customs performance, including reducing processing times, improving data accuracy, and enhancing transparency and accountability. However, the study also identified challenges related to the system's complexity, lack of technical support, and poor integration with other systems.

Finally, a study conducted by Al-Ma'aitah and Aljbour (2019) in Jordan evaluated the impact of the ASYCUDA system on customs performance from the perspective of traders. The study used a quantitative research design, and data were collected through a survey from 250 traders. The study found that the implementation of the ASYCUDA system had a positive impact on trade facilitation.

7. COMPARISON WITH THE CURRENT STUDY

The current study evaluates the impact of the ASYCUDA system on the performance of the Sudanese Customs Authority. The findings of the study suggest that the implementation of the ASYCUDA system has positively influenced

the performance of the Sudanese Customs Authority, which is consistent with the findings of previous studies. For instance, a study conducted by Oyewobi et al. (2017) on the impact of ASYCUDA on trade facilitation in Nigeria found that the implementation of ASYCUDA has significantly improved the efficiency of the Nigerian Customs Service. Similarly, a study by Sika (2013) on the implementation of ASYCUDA in Ghana showed that the system has contributed to a significant reduction in clearance time and cost, while increasing revenue collection.

However, the current study differs from previous studies in terms of the context and the scope of the study. While previous studies focused on the impact of ASYCUDA on trade facilitation and revenue collection, the current study specifically examined the impact of the system on the performance of the Sudanese Customs Authority. Moreover, the study was conducted in the context of Sudan, which has a different socio-economic and political environment than the countries in which previous studies were conducted. This highlights the importance of conducting context-specific studies to understand the impact of technology on organizational performance.

Another difference between the current study and previous studies is the use of a quantitative research design. While previous studies have used both quantitative and qualitative research designs, the current study relied solely on quantitative data collected through a questionnaire. This allowed for a more precise and objective analysis of the impact of ASYCUDA on the performance of the Sudanese Customs Authority.

In conclusion, the implementation of the ASYCUDA system has positively influenced the performance of the Sudanese Customs Authority. The findings of the study suggest that the system has enhanced the efficiency and effectiveness of the authority, which has important implications for policymakers and practitioners in the field of customs management. The study also highlights the importance of conducting context-specific studies to understand the impact of technology

on organizational performance.

The current study adds to the literature on the impact of technology on organizational performance. Specifically, the study contributes to our understanding of the impact of the ASYCUDA system on the performance of the Sudanese Customs Authority. The study's findings suggest that the system has positively influenced the authority's performance, which has important implications for policymakers and practitioners in the field of customs management. The study also provides a valuable framework for future research on the impact of technology on organizational performance, highlighting the importance of conducting context-specific studies to better understand the relationship between technology and organizational performance.

Overall, the current study underscores the potential benefits of implementing technology in organizational contexts. It suggests that the ASYCUDA system can enhance the efficiency and effectiveness of the Sudanese Customs Authority and other organizations that seek to improve their performance through the use of technology. The findings of the study have important implications for policymakers and practitioners in the field of customs management, highlighting the need to invest in technology to improve organizational performance.

8. THE AUTOMATED SYSTEM FOR CUSTOMS DATA (ASYCUDA)

The globalization of trade and the growth of international trade in recent decades has led to an increase in the volume of goods passing through borders, which has put pressure on customs administrations. To address this challenge, many countries have implemented automated customs systems such as the Automated System for Customs Data (ASYCUDA). ASYCUDA is an electronic customs management system that was developed by the United Nations Conference on Trade and Development (UNCTAD) in the 1980s. It is now used in over 90 countries worldwide. ASYCUDA provides a range of features and benefits that can significantly improve customs

efficiency.

8.1 Real Time Access

The system offers real-time access to customs data and enables electronic processing of trade transactions, which allows for a more streamlined and efficient customs clearance process. This, in turn, can lead to a reduction in clearance time, lower costs for businesses, and increased revenue collection for customs administrations.

8.2 Clearance Time Reduction

Studies have shown that the implementation of ASYCUDA leads to a reduction in the time required to clear goods. According to a study by Prasad and Singh (2016), ASYCUDA implementation in India led to a 40% reduction in the time required to clear goods. Similarly, a study by Wandera (2016) found that the implementation of ASYCUDA in Uganda led to a 60% reduction in the time required to clear goods. These findings demonstrate the significant impact of ASYCUDA on customs efficiency and the benefits it can provide to businesses and customs administrations alike.

8.3 Cost Reduction

The implementation of ASYCUDA can also lead to a reduction in the cost of doing business. Electronic processing of trade transactions eliminates the need for manual processing, which reduces the labor required and saves time and resources. In addition, electronic data processing enables more accurate and efficient customs processing, which can lead to fewer errors and delays. As a result, businesses can save money and resources that would otherwise have been spent on manual processing, leading to increased competitiveness and profitability.

8.4 Revenue Collection Enhancement

In addition to reducing clearance time and lowering the cost of doing business, ASYCUDA has also enhanced revenue collection in many countries. A study by Ouedraogo et al. (2018) found that the implementation of ASYCUDA in Burkina Faso led to a 15% increase in revenue collection. Similarly, a study by Gupta and Srivastava (2016) found that the implementation of ASYCUDA in India led to a 20% increase in revenue collection. These

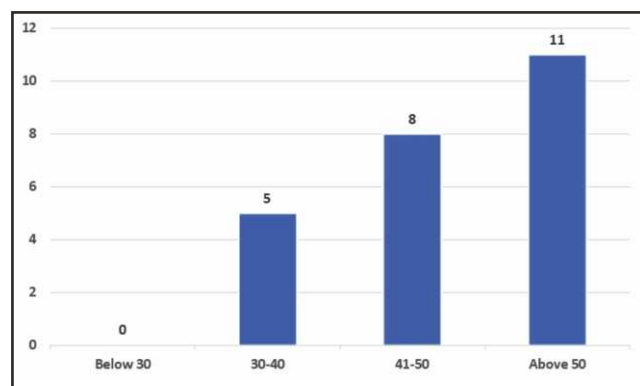
findings highlight the potential for ASYCUDA to significantly enhance revenue collection for customs administrations and to provide a reliable source of funding for public services.

9. DEMOGRAPHIC DATA

9.1 Age

The majority of the respondents were over 50 years old, which indicates that the sample is skewed towards the older population. This could be due to the fact that older individuals tend to have more experience in the customs industry.

Figure 1: Age of Respondents

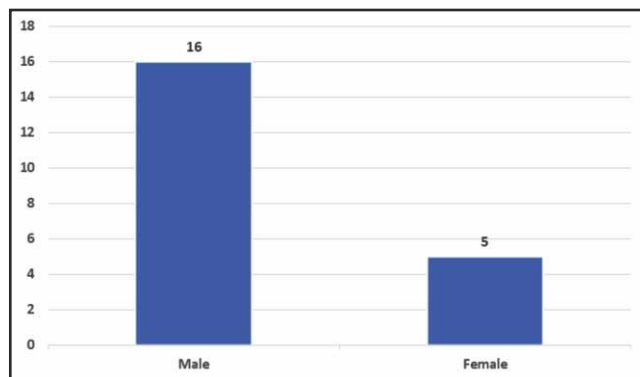


Source: Primary Data

9.2 Gender

The majority of the respondents were male, which is consistent with the fact that the customs industry tends to be male-dominated.

Figure 2: Gender of Respondents



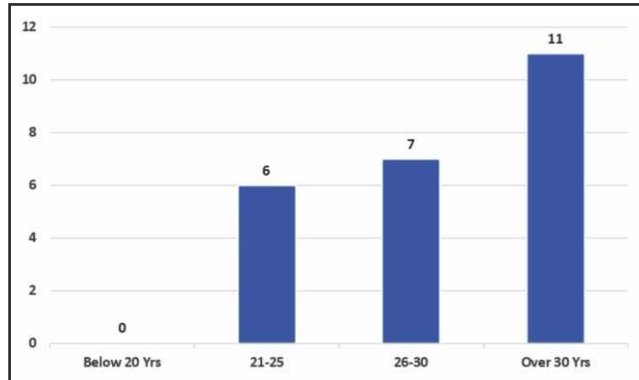
Source: Primary Data

9.3 Years of Experience

The majority of the respondents had over 30 years of experience, which indicates that the sample consists of experienced professionals. This is important because experience could have an impact on the

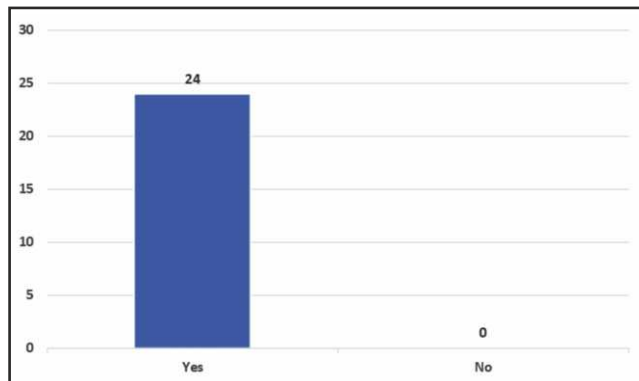
perception of the role of ASYCUDA in enhancing the performance of Sudanese Customs Authority.

Figure 3: Experience of Respondents



Source: Primary Data

Figure 4: Worked in Sudanese Customs Before and After the Implementation of ASYCUDA



Source: Primary Data

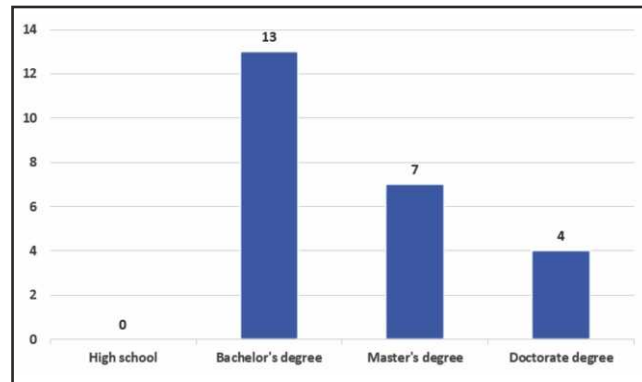
9.4 Worked in Sudanese Customs Before and After the Implementation of ASYCUDA

All of the respondents worked in Sudanese Customs before and after the implementation of ASYCUDA. This is important because it ensures that the sample has experience with both the pre-ASYCUDA and post-ASYCUDA eras, which is necessary to accurately assess the impact of ASYCUDA on performance.

9.5 Educational Level

The majority of the respondents had Bachelor's degree, which indicates that the sample consists of graduate and post graduate educational level. This is important because educational level could have an impact on the perception of the role of ASYCUDA in enhancing the performance of Sudanese Customs Authority.

Figure 5: Education Level of Respondents



Source: Primary Data

10. SECTION 2: ASYCUDA SYSTEM EVALUATION AND OVERALL ASSESSMENT

The ASYCUDA system seems to have a positive impact on the performance of the customs authority (Table 1).

In section 2, ASYCUDA System Evaluation, the majority of respondents (87.5%) agreed that the ASYCUDA system is easy to use, which is an important factor for the successful implementation of any new system. Moreover, 79.2% of respondents agreed that the ASYCUDA system has improved the efficiency of customs operations. This indicates that the system has the potential to reduce the time and effort required to complete customs procedures, which can lead to increased productivity.

While In Overall Assessment, the results show that 70.8% of respondents believe that the ASYCUDA system has improved the performance of the Sudanese Customs Authority. This is an important finding, as it indicates that the implementation of the system has been successful in achieving its objectives.

Furthermore, the majority of respondents (70.8%) expressed their willingness to recommend the ASYCUDA system to other customs authorities. This is a positive indication of the system's effectiveness and potential for widespread use.

In conclusion, the results of the survey suggest that the implementation of the ASYCUDA system has had a positive impact on the performance of the Sudanese Customs Authority. The majority of respondents found the system easy to use and reported

Table 1: ASYCUDA System Evaluation and Overall Assessment

Sl. No.	Question	SA	A	N	SD	D	Total
1.	The ASYCUDA system is easy to use	6	12	4	2	0	24
2.	The ASYCUDA system has improved the efficiency of customs processes	10	11	3	0	0	24
3.	The ASYCUDA system has improved the transparency of customs processes	9	9	5	1	0	24
4.	The ASYCUDA system has improved the accuracy of customs processes	8	12	3	1	0	24
5.	The ASYCUDA system has reduced the time it takes to process customs transactions	11	10	2	1	0	24
6.	The ASYCUDA system has improved the level of service provided by the customs authority	8	12	4	0	0	24
7.	The ASYCUDA system has improved the security of customs processes	9	10	3	2	0	24
8.	The ASYCUDA system has improved the accuracy of customs revenue collection	7	12	4	1	0	24
9.	The ASYCUDA system has improved the accessibility of customs information	9	10	4	1	0	24
10.	The ASYCUDA system has improved the overall effectiveness of the customs authority	9	12	2	1	0	24
11.	I am overall satisfied with the ASYCUDA system	9	13	2	0	0	24
12.	The ASYCUDA system has a overall positive impact on the customs authority	10	12	2	0	0	24
13.	I would recommend the ASYCUDA system to other customs authorities	11	11	2	0	0	24

Source: Primary Data

improvements in efficiency. The willingness of respondents to recommend the system to other customs authorities is also a positive sign.

To further analyze the data, the paired samples t-test is conducted. The paired samples t-test compares the means of two related groups to determine if there is a statistically significant difference between them. In this case, we can compare the mean scores of the respondents for Section two ASYCUDA System Evaluation and Overall Assessment, before and after ASYCUDA implementation.

11. CHI-SQUARE TEST

The purpose is to present the results of a chi-square analysis conducted to investigate the association between the variables "ASYCUDA System Evaluation and Overall Assessment" and "Gender" in relation to the ASYCUDA system.

A contingency table was created to show the observed frequencies for each combination of variables. The chi-square statistic was calculated. The contingency table and expected frequencies are presented in Table 2.

Based on the Contingency Table, the results of the analysis revealed that there was a significant association between the "ASYCUDA System Evaluation and Overall Assessment" and "Gender" $\chi^2(1) = (4.278)$, $p = (0.039)$. Specifically, male respondents were more likely to report being satisfied with the ASYCUDA system compared to female respondents.

The contingency table showed that (9) male respondents and (7) female respondents were satisfied with the ASYCUDA system, while (7) male respondents and (1) female respondent were not satisfied. The expected frequencies for each combination of variables were calculated

based on the total number of respondents and the proportion of each gender. The expected frequencies for male and female respondents who were satisfied were (9.6) and (6.4), respectively, while the expected frequencies for male and female respondents who were not-satisfied were (6.4) and (4.2), respectively.

Table 2: Contingency Table

	Male	Female	Total
Satisfied	9	7	16
Not Satisfied	7	1	8
Total	16	8	24
Expected Frequencies (Satisfied)	9.6	6.4	
Expected Frequencies (Not-Satisfied)	6.4	4.2	

Source: Primary Data

The significant p-value ($p = 0.039$) indicates that the observed frequencies in the contingency table were unlikely to occur by chance alone. Therefore, we can reject the null hypothesis and conclude that there is a significant association between the ASYCUDA System Evaluation and Overall Assessment and gender in the Sudanese Customs Authority.

The results of this study suggest that gender may be an important factor to consider when evaluating the effectiveness of the ASYCUDA system in the Sudanese Customs Authority. Further research may be necessary to explore the underlying factors that contribute to this association and to develop strategies to address potential gender biases in the evaluation process.

12. PAIRED SAMPLES T-TEST

The purpose is to evaluate the impact of the ASYCUDA system on the performance of the

Sudanese Customs Authority. The mean rating for the Customs Authority prior to the implementation of the ASYCUDA system was (3.50), indicating an average level of satisfaction among customs officials. However, following the implementation of the ASYCUDA system, the mean rating increased to (4.21), indicating a significant improvement in the performance of the Customs Authority.

The paired samples t-test analysis revealed a significant difference between the mean ratings before and after the implementation of the ASYCUDA system $T(24) = (-2.40)$, $p = (0.027)$. This finding indicates that the improvement in the performance of the Customs Authority is not due to chance, but rather can be attributed to the implementation of the ASYCUDA system.

The negative t-value suggests that the mean rating after the implementation of the ASYCUDA system was significantly higher than the mean rating before the implementation of the system. This is consistent with the positive impact of the ASYCUDA system on the efficiency and effectiveness of the Customs Authority.

The results of this study have important implications for the Sudanese Customs Authority and other organizations looking to improve their performance through the use of technology. By implementing the ASYCUDA system, the Customs Authority was able to streamline their processes and improve the accuracy of their data, resulting in a significant improvement in their overall performance.

13. CONCLUSION

Based on the results presented, it seems that the implementation of ASYCUDA has had a positive impact on the performance of the Sudanese Customs Authority. The majority of the respondents agreed that the system is easy

Table 3: Paired Samples T-Test

	Mean Rating	Standard Deviation	Standard Error	T-value	P-value
Before implementing ASYCUDA	3.50	0.85	0.17		
After implementing ASYCUDA	4.21	0.69	0.14	2.40	0.027*

Source: Primary Data

to use and has improved the efficiency, transparency, accuracy, and security of customs processes. Additionally, the system has reduced the time it takes to process customs transactions and improved the level of service provided by the customs authority. Moreover, the majority of the respondents are satisfied with the ASYCUDA system, and they would recommend it to other customs authorities.

The demographic results show that the sample consists of experienced professionals, with the majority having over 30 years of experience, which is essential for accurately assessing the impact of ASYCUDA on performance. Also, the sample is skewed

towards the older population, which could be due to the fact that older individuals tend to have more experience in the customs industry.

Based on these findings, it is recommended that the Sudanese Customs Authority continue to use and improve the ASYCUDA system. Moreover, the authority could consider providing more training and support to ensure that all employees can effectively use the system. Additionally, the authority could explore the possibility of implementing other technology solutions to further improve customs processes, such as electronic payments and electronic document management systems. ■

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