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Analyzing the Ticketing System of the Customer Care Center: A Basis for Formulation of Guidelines for the Modernized and Credible Customs Administration

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Abstract

The efficiency of customer service operations plays a crucial role in public service institutions, particularly in customs administration, where timely and transparent transactions are essential. This study analyzes the Bureau of Customs (BOC) ticketing system to assess its effectiveness, identify challenges, and propose guidelines for a modernized and credible customs administration. Using a comparative research design, data were gathered from 50 BOC personnel and 50 customers through structured surveys. Statistical tools such as frequency distribution, weighted mean, and Analysis of Variance (ANOVA) were utilized to analyze the responses. Results indicate that while the ticketing system is generally effective, with high ratings for accessibility (3.41) and ease of use (3.41), several challenges hinder its optimal utilization. Key issues include limited accessibility across locations, dependence on strong internet connectivity, system downtimes, and difficulties in tracking transaction status. Despite these challenges, there was no significant difference in the assessment of effectiveness between BOC personnel and customers ($p > 0.05$), indicating a shared user experience. To address the identified concerns, recommendations include improving system accessibility, enhancing technical performance, reducing dependency on specific software, increasing user training, refining the tracking and notification system, and strengthening customer support. By implementing these improvements, the BOC can enhance its ticketing system's efficiency, foster transparency, and align its operations with global best practices in customs administration. This study serves as a foundation for policy enhancements and technological innovations aimed at modernizing public service delivery in the Bureau of Customs.

Keywords: Ticketing system, customer service, modernization, public service efficiency, digital information

Introduction

Public service and customs administration depend critically on customer care centers, especially in enhancing service delivery, encouraging customer satisfaction, and enabling efficient communication. These centers' effectiveness relies on their ability to maximize technology, maintain high standards of quality for services, and build customer loyalty.

Improving customer service in customer care facilities depends on including information technology. According to Lichtsteiner (2022), adopting technological advancements can significantly increase client access to services and engagement. This is particularly relevant in public service industries, where the quick resolution of questions and issues usually depends on a technological response. Ducic et al. underline the need for competent agents in contact centers since the effectiveness of customer support systems is closely linked to customer happiness and loyalty. Better service delivery in customs management can lead to more effective operations, lowering wait times and improving public impression generally (Chalendard et al., 2019).

A ticketing system is a management tool designed to process, track, and resolve customer service requests efficiently. These requests, commonly called tickets, cases, or issues, must be systematically stored along with relevant user data to ensure streamlined resolution and accountability. An effective ticketing system should be user-friendly for customer service agents, managers, and administrators, allowing seamless interaction and issue resolution. The Bureau of Customs (BOC) integrates this system into customer service operations, assigning a unique ticket number to each concern, request, or issue. This enables users to monitor their real-time progress and responses to their inquiries, enhancing service efficiency and transparency.

The researcher posits that businesses and government agencies, such as the BOC, significantly benefit from ticketing systems by effectively managing customer support requests from various communication channels. A well-designed ticketing system contributes to a transparent service process, timely stakeholder communication, and efficient workflow management. In the public sector, these features are essential for ensuring responsiveness, fostering trust, and improving service delivery. The help desk function, powered by the ticketing system, allows government agencies to generate and track user inquiries, manage stakeholder interactions, and integrate seamlessly with other digital services to improve overall customer experience. Directly improving client loyalty inside customer care systems is service innovation and excellence. Rising consumer satisfaction significantly affects loyalty, as Prasetyo and Wahyuningtyas show, providing a strong basis for ongoing service interaction (Prasetyo & Wahyuningtyas, 2024). Sheth et al. advise reopening customer support as a specialist unit inside companies and for a customer-centric culture, stressing service quality (Sheth et al., 2020). Customs authorities, in particular, should pay close attention to this strategic viewpoint since good customer relations can lead to either compliance or conflicts.

In line with its commitment to modernization and service excellence, the Bureau of Customs adheres to the mandates of the Customs Administrative Order (CAO), Republic Act No. 11032 (Ease of Doing Business and Efficient Government Service Delivery Act of 2018), and the Customs Modernization and Tariff Act (CMTA). These legislative measures aim to streamline government processes, reduce bureaucratic inefficiencies, and enhance service delivery. However, despite the BOC's implementation of a ticketing system, many individuals remain unaware of its existence and benefits, leading to the underutilization of this critical tool.

HappyFox (2022) states that a well-implemented ticketing system helps government agencies improve response efficiency, build reliability, promote transparency, and enhance accountability. The Bureau of Customs, in alignment with its vision of "A modernized and credible Customs administration that is among the best in the world," continuously seeks to optimize its ticketing system to enhance customer service and efficiently manage its workload. Therefore, this study aims to analyze the current ticketing system of the BOC's Customer Care Center, identifying its strengths, challenges, and areas for

improvement. The findings will serve as the basis for formulating guidelines that will modernize and strengthen the credibility of the customs administration.

This study is essential in understanding how an optimized ticketing system can contribute to efficient service delivery, improved public perception, and better governance practices within the Bureau of Customs. By addressing existing gaps and proposing practical recommendations, the research seeks to support the BOC's modernization efforts and align its operations with global best practices in customs administration.

Objectives of the Study

The study aimed to:

1. Describe the profile of transacting professionals in the Bureau of Customs (BOC).
2. Assess the effectiveness of the BOC ticketing system as perceived by both personnel and customers across accessibility, ease of use, multiuser capability, ability to track history, immutable history, flexible views, access control, dependency management, notifications, and customizable workflow.
3. Determine whether significant differences exist in the assessment of the ticketing system's effectiveness when respondents are grouped according to their profile characteristics.
4. Identify the challenges encountered by BOC personnel and customers in using the Bureau of Customs ticketing system.

Methodology

A comparative research design was utilized in this study. It aims to compare two or more groups, entities, or periods to analyze similarities and differences (Siedlecki, 2020).

Respondents and sampling. The population of the assigned BOC personnel is about 126, while the BOC customer users of the bureau's ticketing system are about 247**.** The study used a non-probability, purposeful sampling technique. When a researcher uses their discretion to select participants from the population for their study, they use a non-probability sampling technique known as "purposive sampling" (Cole, 2020). The method was the most useful for the research study because the respondents were categorized according to specific criteria.

Hence, the sample size was computed using a standard formula since the researcher determined the population. This study applies the 5% margin of error, the 95% level of confidence, and the .50 spread of variations. The study was only participated in by 50 BOC personnel and 50 customers.

The target respondents of the study are 96 BOC personnel and 151 BOC customer users of a ticketing system. However, due to data limitations, the researcher collected only 50 BOC personnel and 50 BOC customers. The BOC personnel who participated in the study are comprised of the following:

Table 1
Respondents of the study (N = 50)

Position	F
Admin Officer II	2
COO II	1
Admin Aide II	3
Security Guard II	6
Admin Aide IV	3
COO I	4
Multimedia	1
Administrative Service Officer	2
Admin	2
Customs Police	2
Admin III	1
Admin Aide III	2
Admin Aide V	2
Admin Aide	2
Custom Officer	2
Warehouseman I	3
Assistant Custom Operation Officer	2
CSO	4
Custom Service Officer	3
Client Service Representative	2
Government Employee	1

For proper selection and recruitment of eligible participants using this sampling technique, the researcher considered the following criteria in choosing the participants of the study:

For BOC Personnel:

1. Must be BOC personnel assigned to the ticketing system of the bureau;
2. Must be BOC personnel who have already encountered challenge/s during the implementation of the ticketing system, and
3. Must be a BOC personnel who is willing to provide his/her experiences and has enough knowledge about the research topic.

For BOC Customer Users

1. Must be a BOC customer user of the ticketing system;
2. A customer user who had experienced the traditional way of transacting to the bureau without the ticketing system and
3. And a customer user willing to devote his/her time and sharing his/her experiences, answer the online survey, and be knowledgeable in this research topic.

Research Instrument. The primary research tool for this study is a structured questionnaire designed to gather relevant data on the efficacy and challenges of the Bureau of Customs' (BOC) ticketing system. The questionnaire was distributed to BOC personnel and customers through Google Forms and printed surveys. It is divided into the following sections:

Respondents' Profile. This section collects demographic information about the respondents. For BOC customers, data includes age, profession, and frequency of using the ticketing system. For BOC personnel, data include age, position, and length of service in the bureau.

Effectiveness of the Ticketing System. This section evaluates the respondents' perception of the BOC ticketing system's efficiency, responsiveness, and reliability using a 4-point Likert Scale (1 – Strongly Disagree, 2 – Disagree, 3 – Agree, 4 – Strongly Agree).

Challenges Encountered. This section identifies BOC personnel and customers' common difficulties in using the ticketing system. Respondents assess these challenges using a 4-point Likert Scale (1 – Strongly Disagree, 2 – Disagree, 3 – Agree, 4 – Strongly Agree).

Recommendations for Improvement. This section solicits respondent insights and suggestions on enhancing the ticketing system's efficiency, usability, and customer satisfaction.

By utilizing this structured survey instrument, the study ensures a comprehensive and data-driven analysis of the BOC ticketing system's effectiveness and areas for improvement.

Data Gathering. The researcher followed a systematic process to ensure accurate and reliable data collection for this study. First, a formal request for permission to conduct the research was submitted to the appropriate Bureau of Customs (BOC) authorities. This request outlined the study's objectives, methodology, and expected contributions. Approval was obtained before the survey was administered.

Once the research instrument was finalized, it underwent a validation process to ensure its clarity, reliability, and relevance to the study. After approval, the survey was uploaded to Google Forms and distributed to the target respondents through email, social media, and direct communication channels. This digital approach facilitated broad accessibility and efficient data collection.

To ensure informed participation, respondents were provided with a clear and detailed explanation of the study's objectives, the significance of their responses, and the proper way to complete the survey. Whenever necessary, the survey was administered face-to-face, allowing the researcher to address any concerns and clarify instructions.

The researcher strictly adhered to ethical research guidelines throughout the data collection, ensuring that respondent confidentiality and informed consent were upheld. Additionally, when in-person interactions were required, minimum health and safety protocols were strictly followed to ensure the well-being of all participants.

The survey remained open for two to three weeks, giving respondents ample time to complete the questionnaire. Regular follow-ups were conducted to encourage participation and improve response rates. After the data collection period, all responses were consolidated, organized, and prepared for analysis. The gathered data were then processed using SPSS (Statistical Package for the Social Sciences), where

appropriate descriptive and inferential statistical treatments were applied to generate meaningful insights and interpretations.

Data Analysis. The Statistical Package for Social Sciences (SPSS version 27) was used to organize, process, and interpret the collected data results. Frequency and percentage distribution were used to describe the demographic profile of the respondents. Weighted mean assessed perceptions of the ticketing system's effectiveness and challenges, using a 4-point Likert Scale (1 – Strongly Disagree to 4 – Strongly Agree). Standard deviation measures the variability of responses.

To determine significant differences in perceptions among respondent groups, Analysis of Variance (ANOVA) with Post Hoc Analysis was conducted. A t-test compared the differences between BOC personnel and customers in terms of their evaluation of the ticketing system. These statistical tools ensured a comprehensive and data-driven analysis of the system's effectiveness, challenges, and areas for improvement.

Results and Discussion

1. Profile of the respondents

The profile of BOC personnel reveals significant insights into the workforce composition based on age, position, and length of service. The age distribution indicates that most employees are relatively young, with 48% falling within the 26-35 years old bracket. Additionally, 18% are 25 years old and below, highlighting a considerable presence of younger professionals. Employees aged 36-45 also comprise 18% of the workforce, while 14% are within the 46-55 age range. Only 2% are 56 and older, suggesting that the workforce comprises early to mid-career professionals. This indicates a dynamic group of employees who may be more adaptable to modernized systems. However, the relatively lower percentage of older, more experienced personnel raises potential concerns regarding leadership continuity and knowledge transfer within the organization.

Regarding position distribution, the workforce comprises many roles, with no single job category overwhelmingly dominant. The most represented position is Security Guard II, making up 12% of the workforce, emphasizing the significance of security operations within the Bureau of Customs. Other roles, such as COO I and CSO, each account for 8% of the personnel, while various administrative aide and customs service roles are distributed across different levels. This variety in roles suggests a well-diversified workforce supporting administrative and operational functions. Numerous administrative aide positions at different levels highlight the need for efficient administrative processes to ensure smooth operations.

The length of service among BOC personnel reflects a workforce with a balanced mix of experience levels. The largest group, comprising 40% of employees, has served for 3-5 years, while 30% have been in service for 6-8 years. Meanwhile, 16% have only 0-2 years of experience, indicating a steady influx of new hires. A smaller portion, 12%, has been employed for 9-11 years, while only 2% have remained in service for 12 years or more. This distribution suggests that while the organization benefits from a fresh and dynamic workforce, there may be challenges related to long-term retention and institutional knowledge preservation.

Table 2
Profile of the BOC Personnel
(N = 50)

Category		F	%
Age	25 years old and below	9	18
	26-35 years old	24	48
	36-45 years old	9	18
	46-55 years old	7	14
	56 years old and above	1	2
Position	Admin Officer II	2	4
	COO II	1	2
	Admin Aide II	3	6
	Security Guard II	6	12
	Admin Aide IV	3	6
	COO I	4	8
	Multimedia	1	2
	Administrative Service Officer	2	4
	Admin	2	4
	Customs Police	2	4
	Admin III	1	2
	Admin Aide III	2	4
	Admin Aide V	2	4
	Admin Aide	2	4
	Custom Officer	2	4
	Warehouseman I	3	6
	Assistant Custom Operation Officer	2	4
	CSO	4	8
	Custom Service Officer	3	6
	Client Service Representative	2	4
	Government Employee	1	2
Length of Service	0-2 Years	8	16
	3-5 Years	20	40
	6-8 Years	15	30
	9-11 Years	6	12
	12 Years and Above	1	2

The profile of BOC personnel highlights the importance of continuous training and professional development to enhance the competency of a predominantly young workforce. Given the diversity of roles, establishing clear role definitions and streamlining workflows could improve operational efficiency. Furthermore, with a significant portion of employees having shorter tenures, it is essential to implement

strategies that promote employee engagement and career progression to ensure workforce stability and effectiveness in modernized customs administration.

1.1 Demographic and transactional profile of BOC customers

Table 3
Profile of the BOC Customers
(N = 50)

Category		F	%
Age	25 years old and below	11	22
	26-35 years old	10	20
	36-45 years old	12	24
	46-55 years old	12	24
	56 years old and above	5	10
Profession	Government Employee/ Official	6	12
	Private Employee/ Management	18	36
	Businessman/ Owner/ Corporation/ Incorporator	16	32
	Others	10	20
Frequency of Transacting with BOC	3-4 Times	10	20
	5-6 Times	13	26
	7-8 Times	12	24
	9 Times and Above	15	30

Table 3 shows the demographic and transactional profile of BOC customers based on age, profession, and frequency of transactions. The age distribution is relatively balanced, with the largest groups being 36-45 years old and 46-55 years old, representing 24% of the customers. This indicates that most of BOC's clients are in their mid-career or senior professional years. A significant portion, 22%, comprises individuals 25 years old and below, suggesting that younger professionals and new business owners also engage with BOC. Meanwhile, 20% of customers fall within the 26-35 age bracket, reinforcing the presence of young professionals, while only 10% are 56 years old and above. This distribution suggests that mid-career individuals, likely with established businesses or managerial positions, are the most frequent users of BOC services.

The professional background of BOC customers highlights that most come from the private sector. Private employees or management professionals comprise 36% of the clientele, making them the largest professional group. Business owners, corporate representatives, or incorporators follow closely at 32%, emphasizing the role of BOC in facilitating trade and business transactions. Meanwhile, 12% of customers are government employees or officials, indicating some public sector engagement with BOC services. Additionally, 20% of customers fall under the "Others" category, which may include self-employed individuals, freelancers, or non-traditional business professionals. The significant presence of private employees and business owners suggests that many BOC transactions are commercial.

Regarding transaction frequency, a substantial portion of customers engage with BOC regularly. The largest group, comprising 30%, transacts nine times or more, making them the most engaged segment. Meanwhile, 26% of customers conduct transactions five to six times, while 24% transact seven to eight times, indicating steady recurring interactions. The least frequent users, those who transact three to four times, make up 20% of the total. This distribution shows that most BOC customers interact with the agency multiple times throughout the year. The high number of frequent users highlights the need for efficient and responsive services to accommodate their recurring transactions.

2. Effectiveness of the ticketing system

The assessment of BOC customers on the effectiveness of the ticketing system across various features indicates that the system is generally perceived as effective, with an overall mean score of 3.34. Among the different indicators, Accessibility and Ease of Use received the highest ratings, both with a mean score of 3.41, ranking first. This suggests that customers find the system easily accessible and user-friendly, which are crucial factors in ensuring a smooth experience. Users appreciate the ability to navigate the system with minimal difficulty, indicating that the interface and design are well-structured for their needs.

The Immutable History feature ranked third with a mean score of 3.40, signifying that customers recognize the system's reliability in maintaining an unalterable record of transactions. This is essential for tracking and ensuring accountability in ticket processing. Following this, Access Control ranked fourth with a mean score of 3.35, highlighting its effectiveness in allowing only authorized personnel to access certain information. This feature plays a key role in ensuring the security of customer concerns and maintaining data privacy.

The Flexible Views feature, which allows users to adjust their interface or viewing preferences, ranked fifth with a mean score of 3.34. Meanwhile, Notifications, which inform users about updates or changes in their tickets, ranked sixth with a mean score of 3.33. While both features are rated as effective, their slightly lower scores indicate that there may be room for improvement in customization and communication aspects. Users may benefit from enhanced notification settings or more tailored interface options to suit their specific needs.

Among the lower-ranked features, Dependency Management and Customizable Workflow both received a mean score of 3.31, ranking seventh. These features are essential for handling interdependent tickets and allowing users to modify workflows based on their operational needs. However, their lower ranking suggests that while they function adequately, they may not be as user-friendly or impactful compared to higher-ranked features. The Multiuser functionality, which enables multiple users to access the system simultaneously, ranked ninth with a mean score of 3.29. This suggests that while the system allows multiuser interactions, users may experience limitations or inefficiencies when multiple transactions are processed at the same time.

The lowest-ranked feature is Ability to Work, which received a mean score of 3.28, ranking tenth. This may indicate concerns about the system's responsiveness or overall performance. While the system is generally effective, this rating suggests that users may encounter occasional issues with speed, reliability, or efficiency when completing transactions.

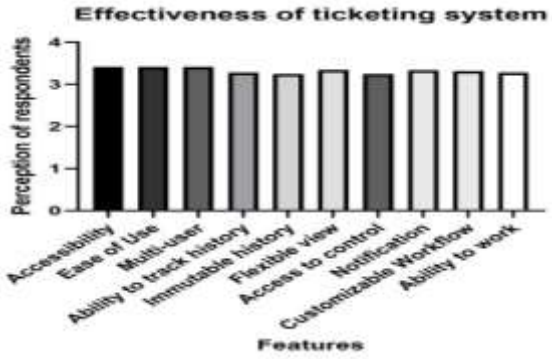

Figure 1. Effectiveness of the ticketing system

Figure 1 presents a bar chart illustrating respondents' perception of the effectiveness of various Bureau of Customs (BOC) ticketing system features. The x-axis represents system features, including Accessibility, Ease of Use, Multi-User, Ability to Track History, Immutable History, Flexible View, Access to Control, Notification, Customizable Workflow, and Ability to Work. The y-axis indicates respondents' perception, with values ranging from 0 to 4, corresponding to the rating scale used in the assessment.

3. Differences in the Assessment of BOC personnel and customers on the system's effectiveness when grouped according to their profile

3.1 in terms of Age

Table 4
Significant Difference in the Assessment of the BOC Personnel and Customers on the Effectiveness of the System as to Age

Indicators	Mean	SD	*F*-Value	*p*-value	Decision on *Ho*	Interpretation
1. Accessibility	3.41	0.41	1.09	0.37	Accept	Not Significant
2. Ease of Use	3.41	0.41	0.16	0.96	Accept	Not Significant
3. Multiuser	3.29	0.47	0.55	0.70	Accept	Not Significant
4. Ability to Work	3.28	0.45	0.74	0.57	Accept	Not Significant
5. Immutable History	3.40	0.40	1.54	0.20	Accept	Not Significant
6. Flexible Views	3.34	0.48	0.13	0.97	Accept	Not Significant
7. Assess Control	3.35	0.44	0.49	0.75	Accept	Not Significant
8. Dependency Management	3.31	0.45	0.22	0.93	Accept	Not Significant
9. Notifications	3.33	0.47	0.32	0.86	Accept	Not Significant
10. Customizable Workflow	3.31	0.50	1.26	0.29	Accept	Not Significant

The table shows the statistical analysis results looking at the notable variations in the appraisal of the effectiveness of the ticketing system depending on the age of Boc staff members and consumers. Apart from the identification of the null hypothesis (Ho), the study covers other system aspects: mean scores, standard deviations (SD), F-values, and significance (SIG) values.

Accepted across all ten measurements, the null hypothesis (Ho) indicates no appreciable change in the view of the system's effectiveness among different age groups. The significance values (SIG) for every feature show that age does not affect how well respondents evaluate the ticketing system. With F-values of 1.09 and 0.16, respectively, and significance values of 0.37 and 0.96, the highest mean scores were found for Accessibility (3.41) and Ease of Use (3.41). The findings show that, without notable differences in their assessments, all age groups consider the system easily available and user-friendly. Likewise, across many age groups, Immutable History (3.40, SIG = 0.20) and Access Control (3.35, SIG = 0.75) show consistent efficacy ratings.

Multiuser (3.29, SIG = 0.70), Notifications (3.33, SIG = 0.86), and Customizable Workflow (3.31, SIG = 0.29) show that users from many age groups have similar opinions on their efficacy. Although this element had quite low ratings, Ability to Work (3.28, SIG = 0.57) shows that the view is consistent across many age groups.

The findings show that the evaluation of the effectiveness of the ticketing system by BOC staff and users is not much influenced by age. Participants usually find the system efficient in all evaluated aspects regardless of age. This consistency shows that the system is designed to be user-friendly and accessible to all age groups, fitting for younger and older users. Given the lack of significant disparities, system improvements should prioritize functionality over particular age groups. Constant improvements to system responsiveness, workflow customization, and notifications will greatly enhance the user experience, guaranteeing ongoing efficacy across several age groups. Nevertheless, with the accumulation of more years in the workforce, one could anticipate that older employees hold more favorable positions than workers in their prime years, and, on average, this is the case. (Economic Policy Institute, 2023).

3.2 in terms of Classification

The table displays the statistical analysis of the notable variation in the ratings of the efficiency of the ticketing system between consumers and BOC staff under many criteria. The outcomes cover the mean scores, standard deviations (SD), t-values, p-values, null hypothesis (Ho) determination, and interpretation of the null hypothesis.

Accepted across all ten measurements, the null hypothesis (Ho) indicates no appreciable variation in evaluating the system's efficacy between BOC staff and users. The p-values for every factor show that both groups view the system similarly, above 0.05. Whereas customers most highly value Accessibility (3.47, SD = 0.43), BOC staff members most highly value Ease of Use (3.47, SD = 0.50). This suggests that although customers value the system's accessibility, staff members find it simple and user-friendly. Notwithstanding these small differences in mean ratings, the t-value (0.00) and p-value (0.95) point to a lack of statistically significant variance in the two groups' views.

Table 5
Significant Difference in the Assessment of the BOC Personnel and Customers on the Effectiveness of the System as to Classification

Indicators	Classification	Mean	SD	*t*-value	*p*-value	Decision *Ho*	Interpretation
1. Accessibility	BOC Personnel	3.36	0.39	0.00	0.95	Accept	Not Significant
	Customer	3.47	0.43				
2. Ease of Use	BOC Personnel	3.47	0.50	0.00	0.95	Accept	Not Significant
	Customer	3.35	0.51				
3. Multiuser	BOC Personnel	3.34	0.50	0.19	0.67	Accept	Not Significant
	Customer	3.24	0.44				
4. Ability to Work	BOC Personnel	3.41	0.41	0.07	0.79	Accept	Not Significant
	Customer	3.16	0.46				
5. Immutable History	BOC Personnel	3.37	0.38	0.18	0.67	Accept	Not Significant
	Customer	3.44	0.42				
6. Flexible Views	BOC Personnel	3.42	0.43	0.36	0.55	Accept	Not Significant
	Customer	3.26	0.52				
7. Assess Control	BOC Personnel	3.42	0.39	1.58	0.21	Accept	Not Significant
	Customer	3.27	0.48				
8. Dependency Management	BOC Personnel	3.33	0.38	3.06	0.08	Accept	Not Significant
	Customer	3.30	0.51				
9. Notifications	BOC Personnel	3.39	0.41	1.19	0.28	Accept	Not Significant
	Customer	3.26	0.51				
10. Customizable Workflow	BOC Personnel	3.37	0.46	1.98	0.16	Accept	Not Significant
	Customer	3.26	0.54				
	Customer	**3.30**	**0.32**				

Though the mean scores for features including Multiuser (BOC: 3.34, Customers: 3.24, p = 0.67), Immutable History (BOC: 3.37, Customers: 3.44, p = 0.21), and Access Control (BOC: 3.42, Customers: 3.27, p = 0.21) show minor variances; nevertheless, the lack of statistical significance indicates that both groups have similar confidence in the system's capacity to manage records and control access. Though they have somewhat lower p-values, certain traits—such as Customizable Workflow (p = 0.16) and Dependency Management (p = 0.08—fail to show statistical significance. This implies that, although there might be some differences in the opinions of consumers and specialists about some features, these differences are not enough to be judged significant.

With a mean score of 3.41 from BOC professionals and 3.16 from consumers, the characteristic ability to work indicates that staff members view the system as more dependable for operational duties than consumers. The t-value (0.07) and p-value (0.79) show that this variation is not statistically significant, implying that both groups evaluate system performance equally. Employees rated Notifications (Boc: 3.39, consumers: 3.26, p = 0.28) and Flexible Views (Boc: 3.42, Customers: 3.26, p = 0.55) somewhat higher than consumers. This could imply that employees interact with configurable views and notifications more regularly, thereby slightly familiarizing themselves with these features.

Since there are no statistically significant differences between the two groups across all evaluated criteria, the results show that BOC staff and customers have a shared opinion about the effectiveness of the ticketing system. This suggests the system runs regularly for internal and external users and is always structured. They have fairly similar perceptions of the system's various features, and no specific indicator stands out as significantly different in their assessments. On that basis, the growing significance of online public services necessitates agreement among all parties on a particular framework for adopting e-government. (Chen et al., 2019)

Though there are minor differences in the ratings of particular features among groups, these differences do not affect the general assessment of efficacy. The results show that system efficiency, customizable workflows, and notification settings should be prioritized in future improvements, ensuring a flawless experience for BOC staff and clients using the ticketing system.

4. Challenges do the BoC personnel and customers encounter on the Bureau of Customs ticketing system

The table presents BOC personnel and customers' challenges in using the Bureau of Customs' ticketing system. Among the listed challenges, the most frequently reported issue is "The BOC ticketing system is not easy to use and not accessible to different locations," with a frequency of 57 and a percentage of 11.1%. This finding highlights a significant concern among users regarding the system's usability and accessibility, indicating that improvements in these areas are crucial for enhancing user experience and operational efficiency. A system that is difficult to use or not accessible across different locations can lead to delays, inefficiencies, and frustration among users, ultimately affecting the overall service delivery of the Bureau.

Table 6
Challenges Encountered by the BOC Personnel and Customers on the Ticketing System of the Bureau of Customs

Challenges Encountered	Frequency	Percentage	Rank
The BOC ticketing system is not easy to use and is not accessible from different locations	57	11.1	1
Difficulty in understanding the instructions for using the system	37	7.2	9
The system is always down	34	6.6	10.5
The BOC ticketing system requires a strong and secure internet connection	50	9.7	2
The BOC ticketing system required specific software to access by the customers	48	9.3	3
The BOC ticketing capabilities are quite low	41	8.0	7
The flow of transactions through the BOC ticketing system is quite slow	34	6.6	10.5
Difficulty in tracking the status of any issue, grievance, or request by using the unique ticket number assigned to it	32	6.2	12
The BOC ticketing system sometimes failed to manage several users simultaneously, both at the user and administrative levels	40	7.8	8
The BOC Ticketing System failed to ensure that the History is always accessible and cannot be mistakenly removed	44	8.6	6
Customers typically demand instantaneous contact from service staff	46	8.9	5
Familiarity and awareness of the BOC personnel and customers in using the ticketing system	47	9.1	4
Others	4	.8	13
Total	**514**	**100.0**	

Conversely, the least reported challenge falls under the "Others" category, with a frequency of 4 and a percentage of 0.8%. While this category represents issues that are less frequently encountered or unique to specific users, it is still essential to investigate these concerns. Even though they impact a smaller segment of users, these challenges could reveal underlying system flaws or niche issues that may become more significant if left unaddressed. A truly user-centric approach requires considering widespread and less common challenges to ensure the system is optimized for all users.

The importance of addressing these ticketing system challenges aligns with Meng et al. (2021), who emphasize the growing importance of customer service ticket data in modern digital infrastructures. As ticketing systems evolve, they play an increasingly crucial role in ensuring efficiency and improving user experience. Effective categorization and resolution of customer service tickets are key to maintaining operational efficiency and customer satisfaction. The BOC ticketing system must keep pace with technological advancements to provide a seamless experience for its users, ensuring that all major and minor concerns are systematically addressed.

Given that accessibility and usability challenges rank as the most significant, addressing them should be a top priority in enhancing the ticketing system. Improvements such as mobile-friendly interfaces, simplified navigation, and broader access across various locations could significantly boost efficiency and user satisfaction. Additionally, while the "Others" category comprises only a small percentage, it still holds value in identifying specific pain points that may not be immediately apparent but could negatively impact a subset of users. Ensuring all concerns are monitored, analyzed, and resolved will lead to a more comprehensive and user-friendly ticketing system.

By proactively resolving these challenges, the Bureau of Customs can streamline operations, improve service quality, and enhance user satisfaction. Investing in system enhancements, usability improvements, and accessibility expansion will reduce inefficiencies and ensure that the ticketing system meets the evolving needs of its diverse user base.

Conclusions

The analysis of the Bureau of Customs (BOC) ticketing system reveals that while the system is generally perceived as effective, with high ratings for accessibility (3.41) and ease of use (3.41), there are notable challenges that hinder its full potential. BOC personnel and customers share similar perceptions of the system's effectiveness, with no significant differences across demographic groups. However, key concerns include difficulties in accessibility, dependence on strong internet connectivity, the requirement for specific software, and challenges in tracking transactions, all of which contribute to inefficiencies and user dissatisfaction. The system's ability to handle multiple transactions simultaneously and its overall responsiveness were rated lower, highlighting the need for technical improvements. Many BOC customers interact with the system frequently, so these challenges can impact overall service efficiency and public trust in the agency's digital processes. Addressing these concerns ensures a modernized, credible, and customer-friendly customs administration.

Recommendations

To improve the BOC ticketing system, several key enhancements should be implemented. First, accessibility and usability must be improved by developing a mobile-friendly and low-bandwidth version of the system to accommodate users in different locations and with varying internet capabilities. The system should also undergo technical upgrades to enhance its ability to handle multiple transactions, ensuring smoother and more efficient operations. Additionally, reducing reliance on specific software and offering web-based alternatives will make the system more user-friendly. Increasing awareness and training among BOC personnel and customers is crucial, and this can be achieved through instructional videos, FAQs, and step-by-step guides. Furthermore, enhancing the tracking and notification system with real-time status updates and automated reminders will help users stay informed about their transactions. Finally, strengthening customer support by introducing a live chat feature or dedicated hotline will provide users with real-time assistance, while a feedback mechanism will allow for continuous system improvement. By implementing these recommendations, the Bureau of Customs can modernize its ticketing system, improve service efficiency, and enhance customer satisfaction, aligning with its vision of a credible and technologically advanced customs administration.

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