Measuring the Success of the Government Integrated Cashiering System (GICS) implemented by the Central Information Technology Office of Belize

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Abstract

The rapid expansion of technology has created the need to evaluate information system performance. This study makes use of *the DeLone and McLean's I*nformation *S*ystem *success model to evaluate the success of* the *Government Integrated Cashiering Systems (GICS) implemented by the Central Information Technology Office* at *the Head Treasury Department in Belize City. The purpose of this investigation is to analyze the overall usefulness and quality of the implemented GICS software and to determine how successful the software has been in improving the revenue collection of Belize. This research was facilitated by a use of a thirty-two-question survey which was distributed to 50 employees at the Treasury Department. Results indicate that the usage of the GICS system within the department has contributed to increase employee performance, better decision making and superior goal achievement of the organization. Thus, the GICS system has proven to be useful to the financial public sector as it improves effectiveness and efficiency, subsequently, supporting the initial hypothesis.*

Keywords: technology, efficiency, operational success, organization, public sector, information systems success, financial software, IFMIS, GICS

Introduction

As organizations expand and find vital use in information systems and technology, they eventually develop specific departments to deal with the technological infrastructure. In essence, the Central Information Technology Office (CITO) is an institution under the Government of Belize responsible for providing Management, Administration and Support towards the implemented Government of Belize Wide Area Network (GoB WAN) and its Enterprise Applications. The institute was officially established in 2004 out of the Belmopan Computer Center reorganized in 1999. CITO's main responsibility, as the official information and technical institution, is to ensure that Belize has its information system operational 24/7-365 days a year. CITO also has the responsibility to exploit new information and communication technologies to ensure that Belize's public sector is among the world's leaders.

The aim of this study is to understand how Management Information Systems help facilitate the everyday operations within organizations. In this paper, we shall analyze the information system commissioned by the Central Information Technology Office to aid the Treasury Department in revenue collection in Belize. The Treasury Department's official cashiering system is the Government Integrated Cashiering Systems, a revenue collection and receipting software system. This research project will test the qualities of this software by submitting it to evaluation through the DeLone and McLean model focusing on the six dimensions of information systems which are information quality, system quality, service quality, usage intentions, user satisfaction and overall system benefits.

The Treasury Department, as a functioning body of the Government of Belize, is responsible for general supervision of expenditure and receipt of revenue. The system is a high functioning system that aggregates the information and at the same time transfer such information into the Finance Department Database, SmartStream. This system, ultimately, has the roles of Cashiering, Supervising and Report Printing.

Our group will be focusing on the analysis of how efficiently and effectively the system is at performing its intended functions. This information system analysis will be carried out by evaluating the current perceptions and benefits the users of the Government Integrated Cashiering Systems are experiencing during the course of normal operations. The originality of this research not only lies in studying a system not yet studied by other investigative groups, but also in the net benefit relation that these discoveries may have into the proper management and improvement of the current information system. Therefore, the research will be conducted in a quantitative manner and displaying the analysis of the data collected.

Literature Review

The main purpose of this literature review is to evaluate the success and failures of implementing Information Systems in the public financial sector and how these systems in developed countries are compatible with the constructs developed by DeLone and McLean (2003) and other researchers. Financial management information systems (FMIS) is the computerization of public expenditure management processes including budget formulation, budget execution, and accounting with the help of a fully integrated system for financial management of line ministries and other spending agencies (Bosire, 2016). The strengthening of the public financial sector accountability is an important consequence of Information Technology and their relevance to governance could improve the quality of financial reporting and strengthen internal control of a country (Aldalayeen, Alkhatatneh, & AL-Sukkar 2013).

DeLone and McLean proposed an IS success model that greatly reflects the combination of reported individual measures by work of Bosire (2015), Aldalayeen, Alkhatatneh, and AL-Sukkar (2013). This model is used to measure how these constructs are connected to provide the end result for any organization which is 'success'. The six major IS success factors of DeLone and Mclean are the specifications categorized as: the IS capability known as the system quality; the output known as information quality; the usage frequency known as the use; user's reaction towards the system known as the user satisfaction; the behavior of the user known as the individual impact; and also, what effects does the IS has on the performance of the organization known as the organizational impact (Delone & McLean, 1992).

Research conducted by Jared, Migiro, and Mutambara (2017) suggests that Modern IFMIS platforms help governments to conform to international financial regulations and reporting standards. In addition, these assist in devolved operations through centralized web-based solutions, providing access to a large number of authorized budget users at all levels. Moreover, it explains that Financial management information systems (FMIS) is the computerization of public financial management. It further states that having sound financial management and reporting in the public sector is an important contributor in achieving greater transparency, accountability, fiscal responsibility and, hence, improved governance.

Afiah, Cahaya & Azwari, (2015) found out that automated payments, combined with sophisticated document management and identity management systems associated with IFMIS, enable governments globally to improve efficiency, effectiveness, security, convenience, financial control and stakeholder confidence. It should be noted that it might also lead to a reduction in prices because of gains based on the time value of money, as well as the comparative analysis of market rates. Furthermore, it also stated that implementing Integrated Financial Management Information System (IFMIS) increased the effectiveness and efficiency of state financial management and facilitate the adoption of modern public expenditure practices in keeping with international standards and benchmarks.

According to Aldalayeen, Alkhatatneh, and AL-Sukkar (2013), much of the work in automating IFMIS systems have focused on financial management information system, including general ledger, accounts payable, accounts receivable, procurement, payroll, asset management, debt management, and budgeting. It also added that IFMIS solutions advance relations across the numerous organizational units within government on execution, reporting, and thoroughness of budget transactions. Their article emphasized that the use of IFMIS is intended to ensure a higher degree of data quality, improve workforce performance for better business results and link planning, policy objectives and budget allocations. It also shows that positive contributions of automated IFMIS solutions include improved efficiency and transparency through direct payments to suppliers and contractors.

Additionally, Chado (2015) explains that IFMIS is a fiscal tool for government that bundles all financial management functions into one suite of applications. It is an Information Technology (IT) based budgeting and accounting system designed to assist the government entities on how to plan budget requests, spend their budgets, manage and report on their financial activities, and deliver services to the public more efficiently, effectively and economically. Moreover, it suggests that IFMIS is an automated system that interlinks planning, budgeting, expenditure management and control, accounting, audit and reporting. It is Information Technology that plays a great role in the various administrative aspects contributing to important changes represented in reducing the cost of production processes, improve the level of prices, increase the speed of achievement and quality improvement.

Methodology

The research project intends to evaluate the success of the information system “Government Integrated Cashiering Systems” commissioned by the Central Information Technology Office and implemented in the Treasury Department. The IS Success Model developed by William H. DeLone and Emphraim R. McLean in 1992 will be used to assess the current success of the Government Integrated Cashiering Systems. The research project will be carried in a quantitative research form. This is a correlational research designed to investigate if the GICS has improved the performance of the Treasury Department. Data will be gathered by developing a thirty-two-question survey to be filled out by interested employees from the Head Treasury Department in Belize City. Firstly, we will petition participation from the staff of the Treasury Department by contacting the Accountant General. After they have accepted to participate, 50 questionnaires will be taken to the head office upon which the staff has been allotted two weeks to answer the surveys. Proceeding, data will be analyzed through the use of Microsoft Excel; All relevant findings will be displayed using tables and bar charts to properly display the analysis of the data collected.

Theoretical Foundation: Information Systems Success

Understanding success and failures is required to evaluate the efficiency and effectiveness of any information system. Evaluating failures and success of any aspect is a tricky endeavor; nevertheless, this is a common and well-known procedure in the IS field. These aspects are delicate to label but at the

introduction of new and innovative technology, these have been extensively researched. The most concerning of this aspect of evaluations is determining what is defined as a success or a failure based on personal perception. In an effort to determine IS success or prevent failure, several ID Success Measures were developed to help evaluate information systems. However, for the purposes of this research project we will focus on the DeLone & McLean's (2003) study, which breaks down the measures in one IS success model with six dimensions.

The relevant DeLone & McLean IS Model focuses its results on experienced benefits to explain the success or failure of the implemented information system. Ten years after the first publication of the DeLone & McLean IS Model in 1992, the model was reviewed and updated. The model determines the success of such systems through the factors of presence or absence of system, information and service quality as they affect users' intention to use, actual use and user satisfaction. These are further analyzed through how actual use and user satisfaction of the system deliver net benefits to the organization. This DeLone & McLean IS Model set the standard hypothesizes to be tested as depicted in Figure 1.

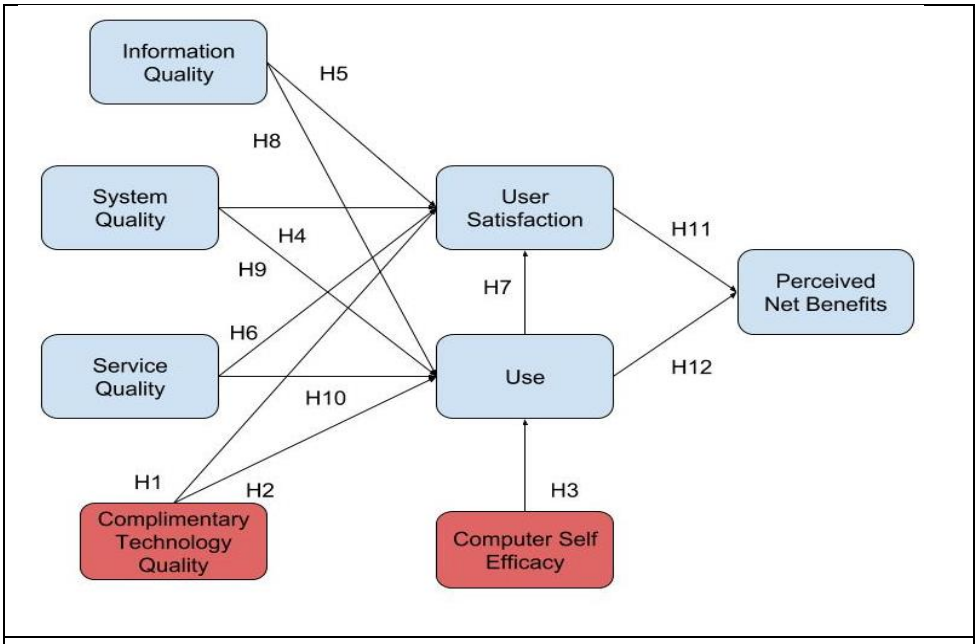

Figure 1. DeLone and McLean IS Success Model

Figure 1 illustrates the six dimensions of the DeLone and Mclean model in addition to the Complementary Technology Quality and computer self-efficacy used to validate this research study.

We have considered the factors from the DeLone & McLean IS Model of information quality, service quality, system quality, use and user satisfaction to be important elements in the evaluation of the success of the Government Integrated Cashiering System commissioned by the Central Information Technology Office to aid the Treasury Department in their processes.

The hypothesized relationships between the Government Integrated Cashiering System and the success variables are based on the theoretical framework developed by DeLone and McLean. This study hypothesized the following hypotheses tested:

Hypothesis:

H1. Complementary technology quality will positively impact user satisfaction.
H2. Complementary technology quality will positively impact system use.
H3. Computer self-efficacy will positively impact system use.
H4. System quality will positively impact user satisfaction.

H5. Information quality will positively impact user satisfaction.
H6. Service quality will positively impact user satisfaction.
H7. Use will positively impact user satisfaction.
H8. Information quality will positively impact use.
H9. System quality will positively impact use.
H10. Service quality will positively impact use.
H11.User satisfaction will positively impact perceived net benefit.
H12.Use will positively impact perceived net benefit.

Construct instrument

The DeLone & McLean IS Model does not specify how collection of data must be carried; therefore, for the purpose of the study we develop a survey with questions focusing on the six dimensions. In order to preserve content validity of the quantitative data collected, the scales used to determine the success of the information system were merely extracted from instruments that were used in previous researches.

The information quality construct was measured through a six-item scale from Bailey and Person (1983), which was modified to focus on the context of the Government Integrated Cashiering System. The Bailey and Pearson's instrument is widely accepted and has become a standard construct in the IS field as it has been tested for reliability and validity through various researches. Likewise, instruments used by Alshibly (2011) was modified to evaluate the system quality construct through a three-item scale. In addition, the Service quality construct was evaluated using a modified two-item scale adopted from the Chang et al (2009) instrument. The Use construct was measured through a four-item scale adapted from previous studies (Balaban et al., 2013; Rai et al., 2002). In this research, User Satisfaction was defined as the evaluative judgement and affective attitude towards the use of the Government Integrated Cashiering System. This construct adopted from Seddon and Yip (1992) was measured with a four-item scale. Furthermore, the perceived net benefits were defined as an achievement of the firm's objective as well as the end user related objectives. This element was evaluated by a three-item scale adopted from Alshibly, (2011) and Tansley et al (2001). The Computer Self-Efficacy element developed by Compeau, D. R., & Higgins, C. A. (1995) was included to observe user's ability to use the system. This element was measured through a three-item scale. Moreover, the Complementary Technology Quality adopted from Teece, D. J. (1988) which was evaluated by a three-item scale was included to assess if the available technology aided the success of the information system. These items were evaluated using a 5- point Likert Scale ranging from strongly disagree (1) to strongly agree (5). Table 1 presents the research model constructs and related items used for the evaluation of each of these constructs. The actual survey used is attached in the appendix.

Table 1. The Government Integrated Cashiering System Survey Construct

Construct	Survey Questions	Source
Information Quality	IQ1: The Government Integrated Cashiering system provides information that is exactly what you need. IQ2: The Government Integrated Cashiering system provides information you need at the right time. IQ3: The Government Integrated Cashiering system provides information that is relevant to your job. IQ4: The Government Integrated Cashiering system provides sufficient information. IQ5: The Government Integrated Cashiering system provides information that is easy to understand. IQ6: The Government Integrated Cashiering system provides up-to-date information.	Bailey and Person (1983).
System Quality	SQ1: The Government Integrated Cashiering system is easy to use. SQ2: The Government Integrated Cashiering system is user-friendly. SQ3: The Government Integrated Cashiering system provides interactive features between users and system.	Alshibly, (2011).

Service Quality	SV1: The support staff keep SmartStream up to date. SV2: The support staff respond promptly when users have a problem.	Chang et al., (2009).
User Satisfaction	US1: Most of the users bring a positive attitude or evaluation towards Government Integrated Cashiering. US2: You think that the perceived utility about Government Integrated Cashiering is high. US3: Government Integrated Cashiering has met your expectations. US4: You are satisfied with Government Integrated Cashiering.	Seddon and Yip (1992).
Usage	U1: You use Government Integrated Cashiering frequently. U2: You depend upon Government Integrated Cashiering. U3: I was able to complete a task using Government Integrated Cashiering even if there was no one around to tell me what to do as I go. U4: I have the knowledge necessary to Government Integrated Cashiering.	Balaban et al., (2013) Rai et al., (2002).
Perceived Net Benefits	NB1: Government Integrated Cashiering helps you improve your job performance. NB2: Government Integrated Cashiering helps the organization achieve its goal. NB3: Using Government Integrated Cashiering in job increases my productivity.	Alshibly, (2011);
Complementary Technology Quality	CTQ1: The software on the device (desktop computer, laptop, mobile device) used to access SmartStream is adequate. CTQ2: The device hardware (desktop computer, laptop, mobile device) used to access SmartStream is adequate. CTQ3: The Government Integrated Cashiering system provides high-speed information access.	Teece, D. J. (1988).
Computer Self Efficacy	CSE1: I could complete the job using the system if I had seen someone else using it before trying it myself. CSE2: I could complete the job using the GICS if someone else had helped me get started. CSE3: I could complete the job using the GICS if l had a lot of time to complete the job for which the system was provided.	Compeau, D. R., & Higgins, C. A. (1995).

Table 1. Measurement Items for the Questionnaire

Sampling and Data Collection

The data was gathered from a sample from the Treasury Department at the Belize Headquarters. The research sampling used was quota sampling which focused on gathering 50 employees from the Treasury Department to complete and return the survey. The 50 surveys were distributed, but unfortunately only 35 surveys were collected making it 70% response rate. A 5-point Likert Scale was used ranging from strongly agree (5) to strongly disagree (1). The respondents' characteristic is shown in Table 2. The table shows that most of the participants were females being 60% of the total respondents, while the males comprised of only 40% of the total respondents. The results indicate that 45.8% of the respondents were over the age of 30 years. Majority of the respondents held an education degree of Associates (54.3%) and Highschool or lower (31.4%). Moreover, majority of the users were individual who were using the system for less than three years (31.4%), followed by users with an experience of 3-8 years at 28.6%.

Table 2. Characteristics of respondents		
Characteristics	**Number**	**Percentage**
Gender		
Male	14	40%
Female	21	60%
Total	35	100%
Age		
Less than 20	0	0%
From 20 to 25	6	17.1%
From 25 to 30	13	37.1%
Over 30	16	45.8%
Total	35	100%
Education		
High school or less	11	31.4%
Associates Degree	19	54.3%
Bachelor's Degree	4	11.4%
Master's Degree or above	1	2.9%
Total	35	100%
Years of System Usage		
Less than 3 years	11	31.4%
From 3 to 8 years	10	28.6%
From 9 to 14 years	6	17.1%
Over 14 years	8	22.9%
Total	35	100%

Table 2. The Respondents' Characteristics Summary Presentation

Data Analysis and Results

The results from the data gathered at the Treasury Department on the success of the Government Integrated Cashiering System is displayed in 7 Bar Charts and one Bar Chart based on the averages. This particular research study does not test the validity of the research model used. It mostly focuses on an applied research methodology to test the average responses and see if the hypothesis tested were supported.

Table 3. Information Quality		
Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	3	8.6%
3	14	40%
4	16	45.7%
5	2	5.7%

Table 3. Table Displaying the Average Responses for Information Quality

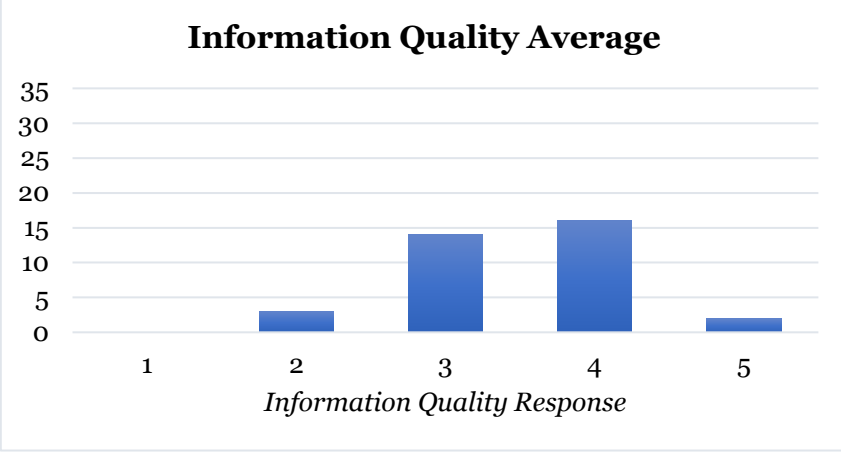

Figure 2. Bar Chart on the Information Quality Results

Figure 2: The graph illustrates that most of the employees at the Treasury Department agree that the Government Integrated Cashiering System provides information that is complete, sufficient and accurate to carry out the tasks that it was intended. It is important to note that responses were clustered around agree and neutral and that the study produce no strongly disagree responses.

Table 4. System Quality

Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	2	5.7%
3	11	31.5%
4	20	57.1%
5	2	5.7%

Table 4. Table Displaying the Average Responses for System Quality

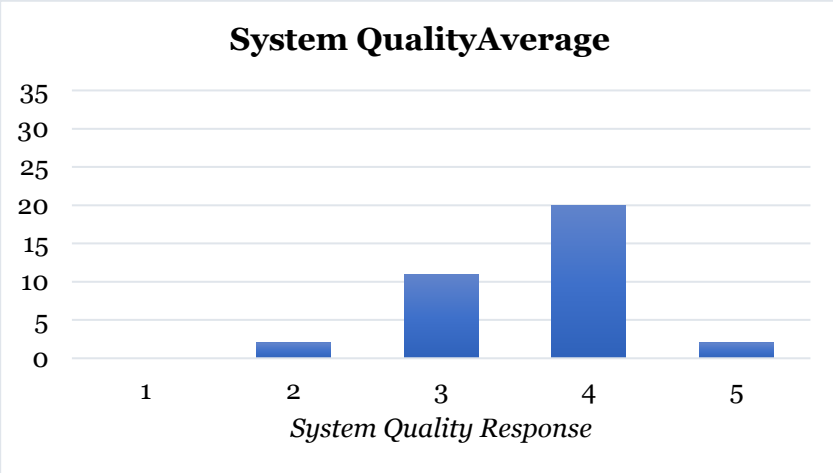

Figure 3. Bar Chart on the System Quality Results

Figure 3: The results indicate that more than half of the respondents (57.1%) agreed that the Government Integrated Cashiering System has a competent system quality. The users acknowledge that the implemented system is easy to use and has a good performance.

Table 5. Service Quality		
Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	7	20%
3	7	20%
4	19	54.3%
5	2	5.7%

Table 5. Table Displaying the Average Responses for Service Quality

Figure 4. Bar Chart on the Service Quality Results

Figure 4: Based on the data gathered, the majority of respondents agreed that the Government Integrated Cashiering System was adequately kept up to date and that the Central Information Technology Office responded promptly to issue arisen from the system.

Table 6. User Satisfaction		
Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	5	14.3%
3	17	48.6%
4	12	34.2%
5	1	2.9%

Table 6. Table Displaying the Average Responses for User Satisfaction

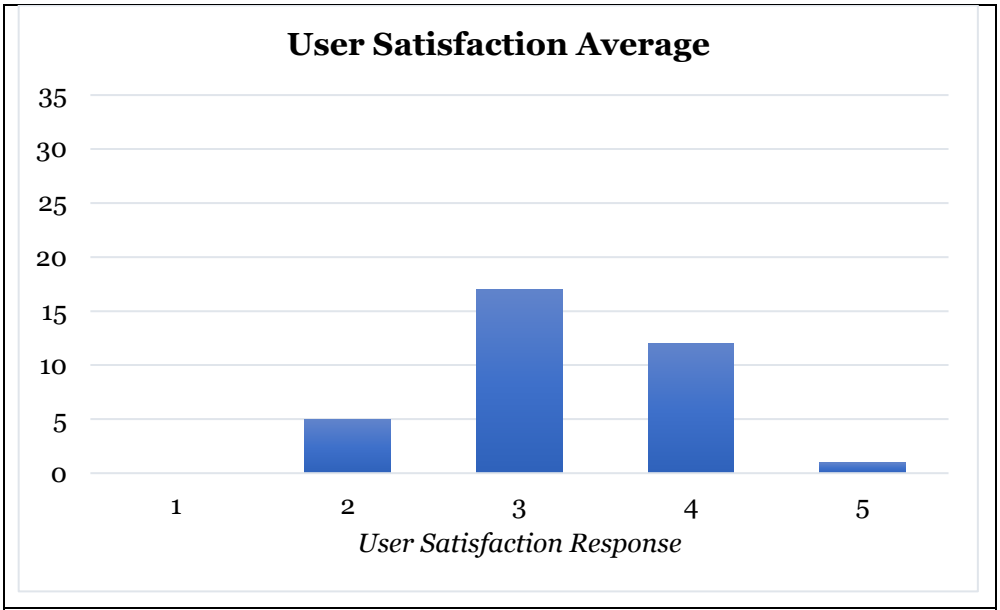

Figure 5. Bar Chart on the User Satisfaction Results

Figure 5: Given the response displayed on the Bar Chart above, 48.6% of the users seem to be neutral to the element of user satisfaction. The users of the Government Integrated Cashiering System do not believe that said system met their expectations. The users are not satisfied and as such the perceived utility is average. However, it is important to note that there was 37.1% of the users that were satisfied.

Table 7. Usage		
Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	1	2.9%
3	12	34.2%
4	18	51.4%
5	4	11.5%

Table 7. Table Displaying the Average Responses for Usage

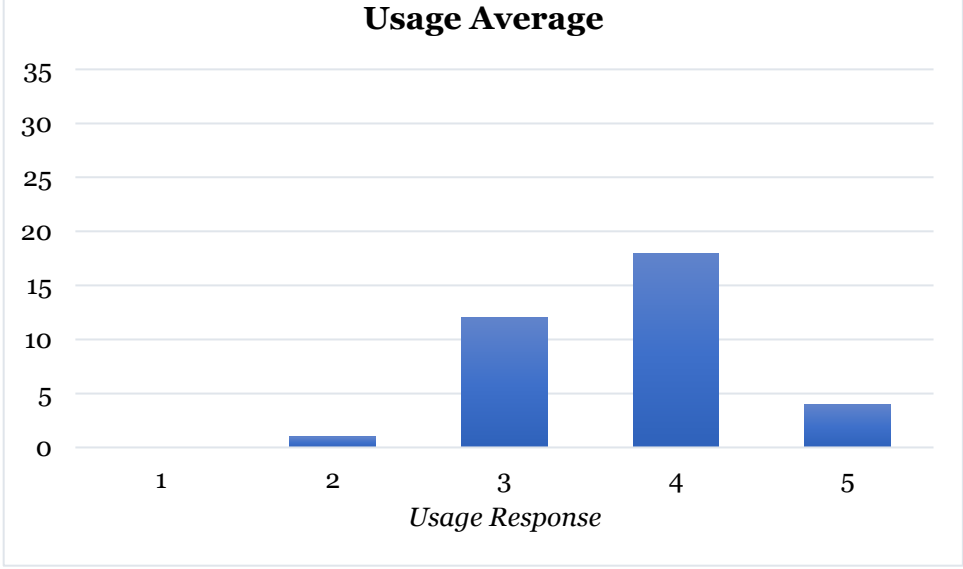

Figure 6. Bar Chart on the Usage Results

Figure 6: Results of the data collection reveal that the whole department is heavily dependent on the system. The Government Integrated Cashiering System is a system that is frequently being used within the department. All of this is being represented by 62.9% of the respondents who either agreed and strongly agreed to the system.

Table 8. Perceived Net Benefits

Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	2	5.7%
3	10	28.6%
4	18	51.4%
5	5	14.3%

Table 8. Table Displaying the Average Responses for Perceived Net Benefits

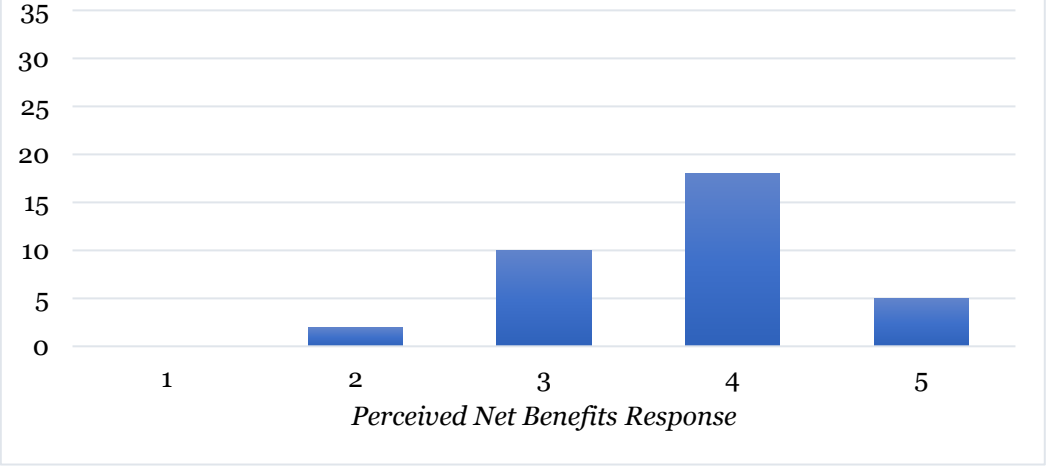

Figure 7. Bar Chart on the Perceived Net Benefits Results

Figure 7: Even though users were not satisfied with the system personally, they acknowledge that the Government Integrated Cashiering System has helped them improve their individual performance as well as increase the overall productivity. 65.7% of the users agree that the system has ultimately helped in achieving the department's objectives.

Table 9. Complementary Technology Quality		
Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	2	5.7%
2	4	11.5%
3	12	34.2%
4	17	48.6%
5	0	0%

Table 9. Table Displaying the Average Responses for Complementary Technology Quality

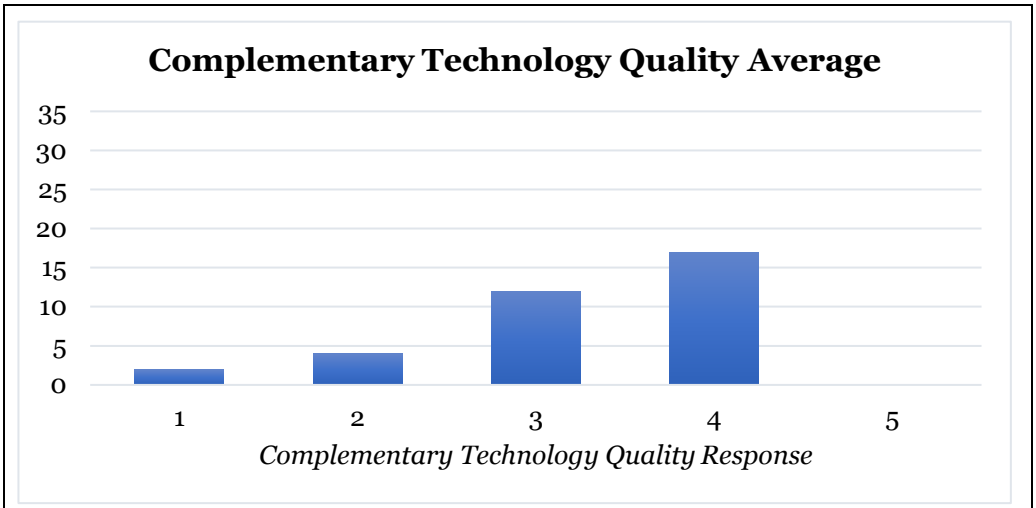

Figure 8. Bar Chart on the Complementary Technology Quality Results

Figure 8: Based on the results obtained, it is noticeable that 48.6%, almost half of all respondents, agreed that the software and hardware at the Treasury Departments is competent to allow the Government Integrated Cashiering System to run adequately. Hence forth, we conclude that the Central Information Technology Office is performing as expecting at ensuring government systems work well.

Table 10. Computer Self-Efficacy Measure

Strongly agreed-Strongly disagree	Number of Participants	Percentage
1	0	0%
2	6	17.2
3	20	57.1%
4	7	20%
5	2	5.7%

Table 10. Table Displaying the Average Responses for Computer Self-Efficacy Measure

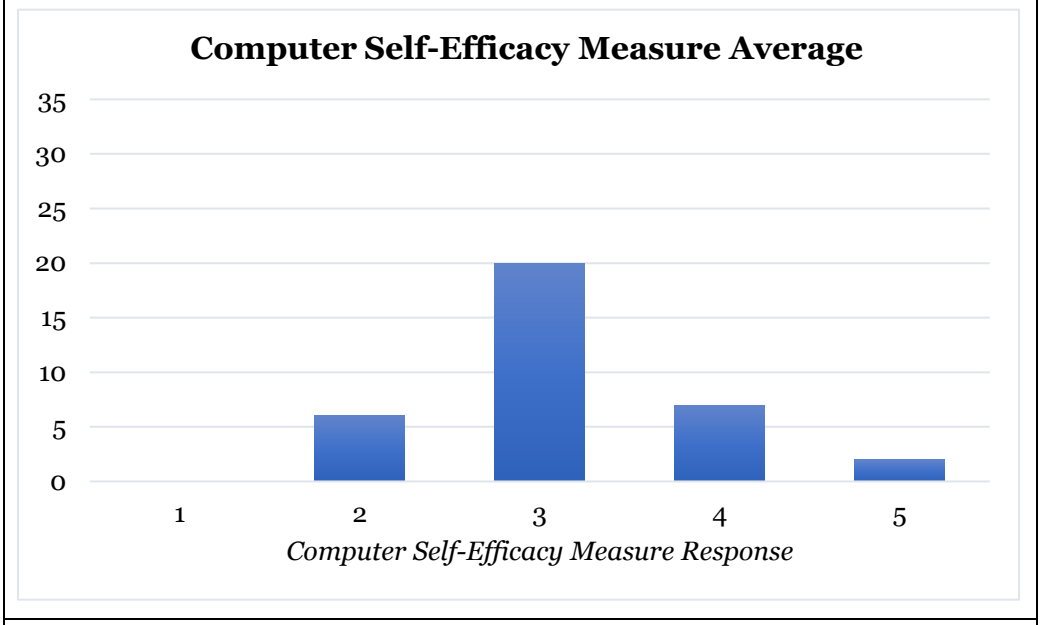

Figure 9. Bar Chart on the Computer Self-Efficacy Measure Results

Figure 9: Results indicate that 57.1% of the personnel at the Treasury Department are mostly neutral about the easiness of using the system on their own. The system appears to be complicated for the users to freely use the system without guidance.

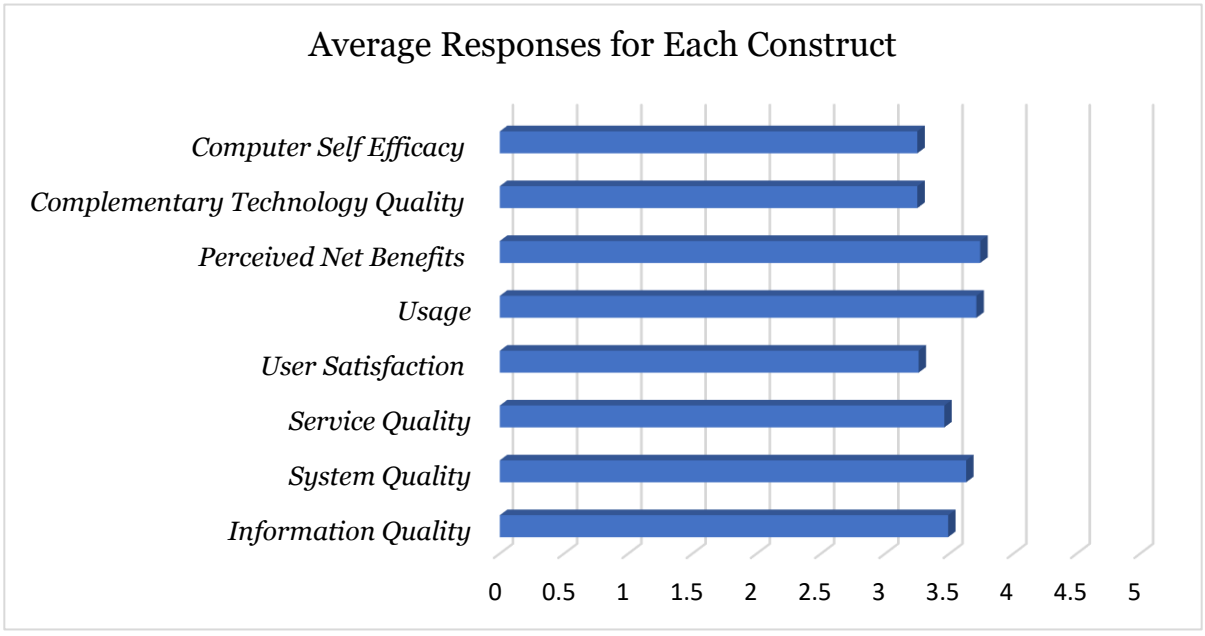

Figure 10. Bar Chart on the Total Average for Each Construct

Figure 10: The Response Average Bar Chart indicates that the Government Integrated Cashiering System has a minimal success rate as it lays between the averages of 3 and 4. Important to note, the data gathered peaks at Perceived Net Benefits; hence, ultimately indicating that the users view the Government Integrated

Cashiering System beneficious to the Treasury Department. Overall, the Central Information Technology Office successfully implemented the system.

Discussion and implications, limitations, and future research

Discussion

The research conducted was focused on measuring the success of the Government Integrated Cashiering System used at Treasury Department and implemented by the Central Information Technology Office. For the purpose of measuring the IS Success of the system, an already existing model developed by DeLone and McLean (2003) was adopted. This IS Success Model studies various dimensions that contribute to a high-grade system implementation. The analysis of the results shows that information quality, system quality, service quality, use, user satisfaction, and perceived net benefit are well-founded constructs that properly measure the success of the Government Integrated Cashiering System.

This research project provides several important implications for the Government Integrated Cashiering System success and management. Based on the model construct, perceived net benefits are appraised to be the most important construct at determining the Government Integrated Cashiering System success implementation than any of the other factor. If the perceived net benefits are to be high or even present, it is argued that the perceived quality, system use and user satisfaction must then be properly regulated. Thus, the most important implications towards the success of the Government Integrated Cashiering System lies in these behavioral and psychological aspects. Hence, it would be considered advantageous if management invested in developing these aspects.

In order to increase the user's perceived net benefit, it becomes important that the Treasury Department and the Central Information Technology Office puts more focus and development into the Government Integrated Cashiering System to provide better information quality, system quality, and service quality, which in turn, ought to improve user system usage behavior and satisfaction evaluation, and consequently perceived net benefit. Given the results, usage was found to be the most direct influential factor on perceived net benefit. The DeLone and McLean model (2003) makes note that system usage, without considering nature of use, is insufficient to determine the system beneficious to the Treasury Department.

The results indicate that information quality, service quality, and system quality on use and perceived net benefit are significantly more than those of the user satisfaction, complementary technology quality and the self-efficacy measure. With the Treasury Department in focus, it is inferred that user satisfaction is not being significantly impacted by any of these factors. It is recommended that the Treasury Department and the Central Information Technology Office puts effort into locating the actual reasons why user satisfaction is not being significantly affected. It is also believed that higher investment in complementary technology quality will have a more positive influence on: use, user satisfaction, and perceived net benefit. Moreover, it is advised to focus on self-efficacy as it was the lower extreme of this study. Proper evaluation into their abilities may be needed to decide if staff requires better guidance into using the system. This, in turn, might change perception and increase user satisfaction.

Even though the system has been successfully implemented, it still requires improvement. To elaborate, although most users (51.4%) agreed on the information quality being adequate, there was still a significant number of users (40%) that were neutral on the information quality. This indicates that there is a need for the information to be audited and filtered so that all employees are able to access the information relevant to their needs. Moreover, 62.8% percent agreed that the system quality was adequate; however, there can still be improvement in the user interface making the 31.5% that are neutral to the decision be satisfied. Furthermore, 40% of the sample either do not agree or are neutral on the service quality. It becomes noteworthy that the participants want faster reaction time towards the system issues and also desire for the system to be upgraded. Furthermore, there appear to be low satisfaction within the department towards the system. Although 37.1% of participant are satisfied, 48.6% are neutral. This contributes to a lower success rate. As recommended earlier, this requires more research on the issue. The element on self-efficacy affects the element of usage. As recommended the participants skills with the system need to be evaluated and if they are not sufficient, there must be training sessions implemented to help increase their capability as well as the usage factor. The evidence indicates that complimentary technology must be upgraded since most of the sample was between neutral and agree. This needs to be taken into consideration as a low capability computer unable to handle the system will in turn affect the perception of the user towards the system.

Despite all of these key areas, 65.7% of users see the system as being beneficial to their work as well as the department.

Limitations and future research

One of the greatest limitations of this study was time. We understand that this was not a primary obligation of the personnel at the Treasury Department as they deal with much larger aspects. This, in turn, resulted to a decreased response rate of only 70% of total questionnaires handed out. Nevertheless, the study still provided insight into the Central Information Technology Office's successful implementation of the Government Integrated Cashiering System. All in all, this study provided a structure to understand the implementation success of the Government Integrated Cashiering System and explored the impact of both the system quality and user satisfaction, use and perceived net benefits. This study into the Government Integrated Cashiering System provides a foundation for further research. For future research, we recommend researchers to try to get a 100% response rate of a larger sample base as it may give a more accurate picture of the implementation success. In addition, we recommend researchers to use a longer version of the survey as it may provide better results.

Conclusion

In our study, users still found the Government Integrated Cashiering System to be useful to themselves and to the Treasury department. The elements of information quality, system quality and service quality were generally on the same standard; users agreed that this made the system useful and helped them work effectively. However, the self-efficacy measures and complimentary technology quality need to be significantly improved. Based on the chart analysis, we concluded that the Central Information Technology Office has done an adequate job at implementing and servicing the system. All the same, further instruction into the usage of the system is required to ultimately increase self-efficacy and, subsequently, user satisfaction. The DeLone and McLean model assisted in properly analyzing the success implementation of the Government Integrated Cashiering System. The eight constructs allowed us to determine the state in which the information system is at presently and how it can be improved for better performance in the future.

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Appendix

Survey

"The Success Measures of Financial Information Systems in the Public Sector"

(The Government Integrated Cashiering System Users)

Target Respondents: To be completed by the Government Integrated Cashiering System users in the Public Sector of Belize.

Purpose: The information gathered through this questionnaire will be used as a part of an empirical research conducted into the evaluation of the Government Integrated Cashiering information system in the Public Sector of Belize. The survey will evaluate information quality, system quality, user satisfaction, and perceived net benefits of using the Government Integrated Cashiering System. This research is conducted for the completion of the Management Information System Course at University of Belize.

Confidentiality: Note that the responses provided will be completed anonymous and confidential. The compiler of the questionnaire will dispose of the questionnaires after completion of the research.

Instructions

Please tick the boxes to mark your answers.

Section A. Demographic Information	**Answers**
A1. Please indicate gender	Male ☐ Female ☐
A2. Please indicate age range	<20 ☐ 20-25 ☐ 26-30 ☐ >30 ☐
A3. Please indicate highest education level attained	High School or less ☐ Associates ☐ Bachelors ☐ Masters or greater ☐
A4. Number of years working with the Government Integrated Cashiering System	< 3 ☐ 3-8 ☐ 9-14 ☐ >14 ☐

Section B. Information Quality	**Strongly Disagree** **Strongly Agree**
IQ1: The Government Integrated Cashiering system provides information that is exactly what you need.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
IQ2: The Government Integrated Cashiering system provides information you need at the right time.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
IQ3: The Government Integrated Cashiering system provides information that is relevant to your job.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
IQ4: The Government Integrated Cashiering system provides sufficient information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
IQ5: The Government Integrated Cashiering system provides information that is easy to understand.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
IQ6: The Government Integrated Cashiering system provides up-to-date information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section C. System Quality	**Strongly Disagree** **Strongly Agree**
SQ1: The Government Integrated Cashiering system is easy to use.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
SQ2: The Government Integrated Cashiering system is user-friendly.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
SQ3: The Government Integrated Cashiering system provides interactive features between users and system.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section D. Service Quality	**Strongly Disagree** **Strongly Agree**
SV1: The support staff keep SmartStream up to date.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
SV2: The support staff respond promptly when users have a problem.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section E. User Satisfaction	**Strongly Disagree** **Strongly Agree**
US1: Most of the users bring a positive attitude or evaluation towards Government Integrated Cashiering.	1☐ 2☐ 3☐ 4☐ 5☐
US2: You think that the perceived utility about Government Integrated Cashiering is high.	1☐ 2☐ 3☐ 4☐ 5☐
US3: Government Integrated Cashiering has met your expectations.	1☐ 2☐ 3☐ 4☐ 5☐
US4: You are satisfied with Government Integrated Cashiering.	1☐ 2☐ 3☐ 4☐ 5☐

Section F. Usage	**Strongly Disagree** **Strongly Agree**
U1: You use Government Integrated Cashiering frequently.	1☐ 2☐ 3☐ 4☐ 5☐
U2: You depend upon Government Integrated Cashiering.	1☐ 2☐ 3☐ 4☐ 5☐
U3: I was able to complete a task using Government Integrated Cashiering even if there was no one around to tell me what to do as I go.	1☐ 2☐ 3☐ 4☐ 5☐
U4: I have the knowledge necessary to Government Integrated Cashiering.	1☐ 2☐ 3☐ 4☐ 5☐

Section G. Perceived Net Benefits	**Strongly Disagree** **Strongly Agree**
NB1: Government Integrated Cashiering helps you improve your job performance.	1☐ 2☐ 3☐ 4☐ 5☐
NB2: Government Integrated Cashiering helps the organization achieve its goal.	1☐ 2☐ 3☐ 4☐ 5☐
NB3: Using Government Integrated Cashiering in job increases my productivity.	1☐ 2☐ 3☐ 4☐ 5☐

Section H. Complementary Technology Quality	**Strongly Disagree** **Strongly Agree**
CTQ1: The software on the device (desktop computer, laptop, mobile device) used to access SmartStream is adequate.	1☐ 2☐ 3☐ 4☐ 5☐
CTQ2: The device hardware (desktop computer, laptop, mobile device) used to access SmartStream is adequate.	1☐ 2☐ 3☐ 4☐ 5☐
CTQ3: The Government Integrated Cashiering system provides high-speed information access.	1☐ 2☐ 3☐ 4☐ 5☐

Section I. Computer Self-Efficacy Measure	**Strongly Disagree** **Strongly Agree**
CSE1: I could complete the job using the system if I had seen someone else using it before trying it myself.	1☐ 2☐ 3☐ 4☐ 5☐
CSE2: I could complete the job using the GICS if someone else had helped me get started.	1☐ 2☐ 3☐ 4☐ 5☐
CSE3: I could complete the job using the GICS if l had a lot of time to complete the job for which the system was provided.	1☐ 2☐ 3☐ 4☐ 5☐

Please return the completed survey.

Thank you for your participation.