Measuring the Success of the Benefits Information System

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Abstract

This study utilizes the DeLone and McLean's Information Success Model as an instrument to evaluate the Benefits Information System. As technology intercontinentally progresses, it is imperative for Belize to retain speed with the contemporary technological age. This paper studies the overall efficiency and success of a system that facilitates the use of records management and retrieval within the Social Security Board in Belize. Questionnaires were distributed to different Social Security Branches and external users. Results indicate that the implementation has contributed to employees' performance, better decision making and meeting goals of the organization. However, customers are not fully utilizing the system due to the lack of complementary technology quality. Therefore, the organization must develop alternatives and target customers to employ the system.

Keywords: D&M Model, Benefits Information System, Social Security Board, information system, success

Introduction

This research contributes to the implementation of the Information System Success Model (D&M) initially established by DeLone and McLean in 1992 and advanced later in 1992, 2003 and 2004 (DeLone & McLean, 1992, 2003, 2004). Through this study, the Benefits Information System utilized by the Social Security Board (SSB) in Belize will be evaluated. The ultimate significance of the study is that Social Security defends the general public against a broad range of dangers and safeguards them with a simple rate of pay. It permits numerous individuals to look forward to an adequate standard of living when they retire (Starr, 2005). Consequently, the public must fully utilize the Social Security Board's information system to acquire its optimum advantages and capabilities. Information systems achieve prominence through the input of data to produce information that is valuable for handling internal operations. It is crucial for Belize to sustain constant improvements in technology, as information systems allow organizations to utilize data effectively and reduce workload (Ginneken, 2008).

The Social Security Board was established to deliver public insurance for employees in Belize. It offers defense to members against financial shortfall through monetary contributions (Feldstein, 1974). There are many schemes that pay benefits on behalf of all insured persons, who are workers fourteen (14) years and over. Such benefits include income for child delivery, illness or harm at the workplace, retirement, and funeral for a partner or child. The institution is led by Chapter 44 of the Laws of Belize which encompasses organizational policies in terms of: registration, collections, conditions, requirements, benefits, and pensions. Customers can receive different types of benefits when they are insured and the employer is making contributions on their behalf (Gruber & Wise, 2000). The process starts when the customer is submitting a claim form, which can be downloaded from the Social Security website and then submitted at any Social Security Branch across the country. The claim is then entered into the Benefits Information System, marked as pending and undergoes to a series of processes for verification. After verification, it will be marked as either *allowed* (claim will be paid), *disallowed* (claim will not be paid), or *returned* (claim has missing information). The Benefits Information System performs numerous confirmations such as validating that medical officer is indeed registered.

The system is generally used internally and customers have contact with the system through the organization's website where they can download an application form and access information. The system can generate letters to inform the status of claims, cheques, reports, statistics, finance, and other built in tools to help the organization achieve its goals. There are certain restrictions as some employees do not have access to all features of the system (only respective to their job descriptions). However, this begs the questions: Are customers actually utilizing the system? Are employees satisfied with the Benefits Information System? What are key areas to improve the system? Hence, the main objective of this research is to explore the efficiency of the Benefits Information System. Our goal is to determine the success of the system and make recommendations on critical areas to improve.

Originality

The originality of the research is that it has never been conducted in the country of Belize. The submission of this paper has not been published or accepted in a journal or conference proceedings, nor presented at another conference. Additionally, it is the first time that the Benefits Information System is being evaluated. There is no current published article on how the information system has affected the organization and its customers.

Literature Review

Information systems in the public sector are an instrument to sustain improved administration services to government stakeholders through aggregate productivity. It expands responsibility in public management processes (Bekkers & Homburg, 2007). Scholars have indicated that information systems have been considered as initiators of advancement in public management and administrative modifications (Arundel & Huber, 2013). Ziemba and Oblak evaluated information systems that are applied in public

administration in Poland to examine their competences, advantages, and setbacks. The qualitative study encompasses a "holistic and systems approach" to the e-government implementation. The methodology utilized included numerous systematic approaches, such as an acute examination of literature, analysis of government publications, investigation of Polish information system schemes, and revision of case studies. Key findings indicate that some benefits of employing public information systems include rational exchange of information in divisions at a native and central level, functionality based on concrete government processes and the integration of government data (2004). Similarly, the United States Government Accountability Office (GAO) conducted a qualitative study to identify several drawbacks within the Social Security Administration's information technology. The examination pinpoints disadvantages and system development practices. The Social Security Administration's computerized information systems performs a variety of functions such as processing Disability Insurance, Security Income outlays, and transacting Medicare payments. However, GAO discovered that the institution did not effectively utilize all system features and did not establish techniques to direct the system's development. The GAO recommended that the organization practice "IT investment management" which entails opting for investments that achieve institutional requirements and apprehending investment information (United States Government Accountability Office, 2016).

In a special report, the Office of Technology Assessment (OTA) in the United States examines the strategies undertaken in the Systems Modernization Plan (SMP) and the development that the Social Security Administration (SSA) has made. The paper identifies issues tackled by the SSA and other Federal agencies that are progressively reliant on information technology in performing organizational goals. The OTA gathered data through advisory panellists, workshop contributors, Federal Agency officials, and other participants. It concludes that the Social Security Administration is susceptible as they programme and update data processes. Further, the study determines that effective supervision of institutions that rely on information systems is becoming increasingly challenging. The OTA suggests that changes in the benefits programs will be further supported with system enhancements (U.S. Congress Office of Technology Assessment, 1986). Likewise, Adler and Henman conducted a research to explore the relationship between technology, administration and policy in social security. Concentrating on novel information technologies, they illustrate how they are implemented by social security institutions in different countries. The investigators examined the impact on staff and customers. Results show that similar technologies address different organizational objectives (Adler & Henman, 2001). Again, Adler and Henman further investigated the management of "service delivery". The researchers performed a comparative study of automation in the social security systems of thirteen (13) countries. Results indicate that information technologies have intensified control towards employees and customers, instead of strengthening stakeholders (Adler & Henman, 2003).

Through the literature review, past studies were selected to evaluate the level of efficiency and additional services that could be provided by the Social Security Benefits Information System. As the literature review points out, Belize is young, small and venturing into providing online Social Security Services to consumers while the US can be considered more technologically advanced in its access to online Social Security services. Research shows that an efficient IT system for Social Security Benefits requires the support and investment of government for successful implementation and effectiveness as well as trained staff and IT experts. Advanced information systems have hundreds of years of experience in providing Social Security services to citizens starting from a manual system of physically visiting offices to now, the technological age where efficiency for many individuals is the ability to perform transactions online. The Belize Social Security Board services a small number of customers in contrast to other countries. Upgrading the Social Security Benefits system to the point where Belizeans can conduct transactions online is possible and can be done by studying the existing systems and through investment but will consume time, money, and training, according to the literature review of existing online Social Security Systems.

Research Model/Hypothesis

In 1992, DeLone and McLean proposed that the dependent variable for information system research is Information System Success. The Information Success Model is a concept that provides comprehension of IS success by determining six of the most important components (DeLone & McLean, 1992, 2003, 2004). The framework is one of the most cited and talked about models in IS history. As technology evolves, the framework has been improved to meet the change in demand of several information systems. Throughout 2002 and 2003, DeLone and McLean reassessed the model's current components namely: systems quality, information quality, service quality, use, user satisfaction, and net system benefits.

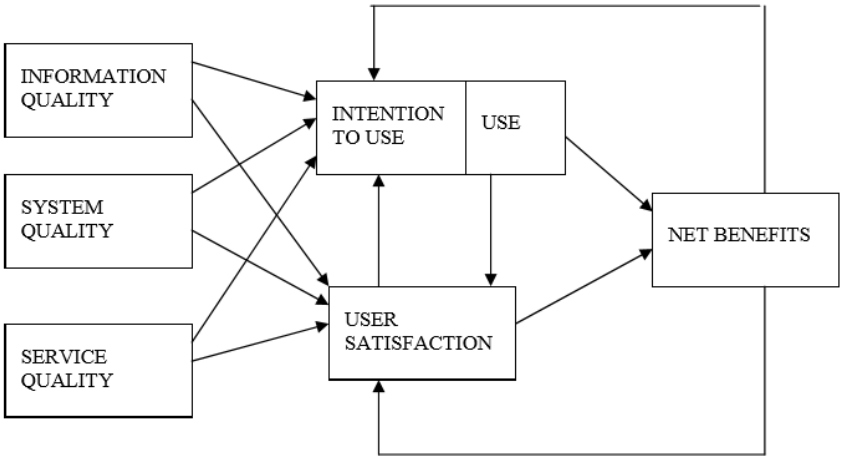

Figure 1. Updated D&M IS success model (DeLone & McLean, 2003, 24).

"Systems quality" are the characteristics of an information system based on its performance. It can include: adaptability, availability, reliability, response time, and usability (Alshibly, 2011). "Information quality" refers to the type of information that the system is able to produce or provide. It encompasses measures such as: completeness, ease of understanding, personalization, relevance, and security (Bailey & Person, 1983). "Service quality" represents the support that users obtain such as assurance, empathy, and responsiveness (Chang et al, 2009).

The components "use" and "user satisfaction" are interrelated as it embodies how the information system is utilized and the degree of pleasure that is realized from such interaction (Rai et all, 2006). Some underlying activities of "use" comprise of the nature, navigation patterns, number of site visits etc. (Balaban et al., 2013). On the other side of the spectrum, "user satisfaction" would commonly entail features like repeated purchases and repeated visits (Seddon Yip, 1992). "Net benefits" is the degree to which the information system can influence the accomplishment of goals within the organization (Ashibly, 2011). Ultimately, net benefits can be gained through cost savings, expanded markets, time savings, and so on (Tansley et al, 2009).

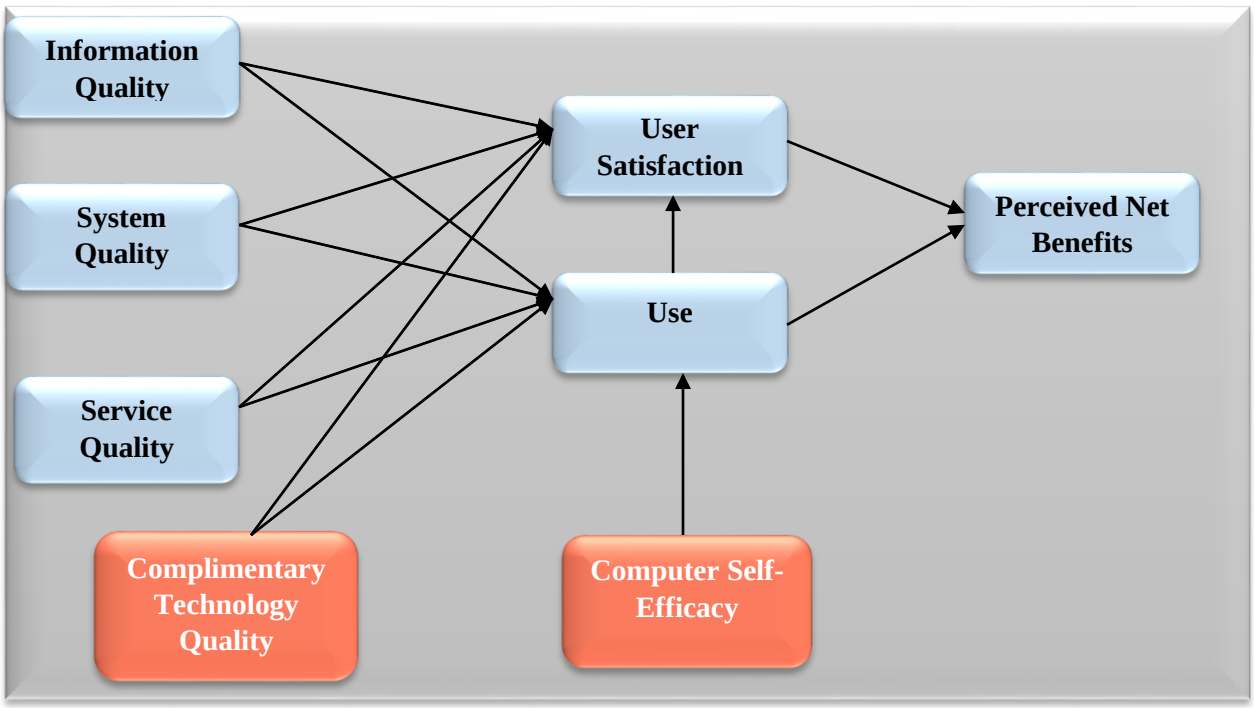

Figure 2 DeLone and McLean Information System Success Model

Commensurate to the D&M Model, the study presents the following eleven (11) hypotheses:

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. Information quality will positively impact use.
H8. System quality will positively impact use.
H9. Service quality will positively impact use.
H10. User satisfaction will positively impact perceived net benefit.
H11. Use will positively impact perceived net benefit.

Methodology

This quantitative research uses the D&M (DeLone & McLean, 2003) to illustrate the success of the Benefits Information System perceived by internal and external users. A questionnaire was constructed to address personnel and customers in contact with the system. Data was gathered through the use of random sampling for internal users and convenience sampling for external users. Both sets of respondents, external and internal, were presented with two different surveys. The determinants of success not only depend on internal users who have direct contact with the system, but also external users who are the intended audience. Hence, two different surveys were distributed for each set of respondents.

The questionnaire included all variables used in the D&M (DeLone & McLean, 2003) that was previously validated. See Figure 1 for an explanation of the model variables analyzed in this study. The surveys were distributed via the web to different participants throughout the country, in order to get a comprehensive and balanced view of perspectives. Due to time constraints, the questionnaires distributed to external users were on the basis of convenience sampling. Individuals were chosen on the basis of how available they were to contribute in the study. For internal users on the other hand, random sampling was used as

there are various Social Security Branches throughout the country of Belize. To boost involvement, the subject and purpose of the study was disclosed and anonymity was guaranteed.

A total of 30 questionnaires were issued and collected. That is, 15 questionnaires were distributed for each set of respondents. For internal users, 45 closed questions were added; there were no open-end questions. Similarly, 32 closed questions were included and there were no open-end questions for external users. The closed questions were answered by Likert's 7-step (rating from (1) strongly disagree to (7) strongly agree) measures. Data gathered was analysed using Microsoft Excel and results were presented in tables and figures such as pie charts and bar graphs. See appendix for surveys distributed to the both types of users.

Data Analysis

Internal Analysis

All the questions in the internal user and external user response analysis were measured using a 7-point Likert Scale with scales ranging from strongly agree (7) to strongly disagree (1). The bar graphs below demonstrate the internal users' valuation of the Benefits Information System under eight constructs based on the DeLone and McLean model: information quality, system quality, service quality, complementary technology quality, computer efficacy measure, user satisfaction, use and perceived net benefits. The bar graphs illustrate the percentage of Likert rating chosen for each construct.

Table 1 Characteristics of Respondents

Characteristics of Internal Users							
Gender		Age		Education		Years of Employment	
Male	60%	Less Than 25	20%	PhD	0%	Less Than 5	33%
Female	40%	From 25 to 35	33%	Masters	0%	Over 5 to 10	20%
		Over 35 to 45	33%	Bachelors	47%	11 to 15 years	27%
		Over 45 to 55	7%	Associates	47%	Over 15 years	20%
		Older than 55	7%	High School	7%		
				Primary School	0%		

The table above reports the characteristics of internal respondents. Out of the 25 questionnaires distributed to internal users countrywide, 15 questionnaires were returned. This yields a response rate of 60 percent. Male participants represented a higher percentage of the completed sample, compared to female participants who contributed to 40 percent of responses for internal users. 33% of the internal participants were aged 25-35 years and 47% had obtained education up to Associate level. Twenty-seven (27%) of internal participants worked within the Social Security Board for 11 to 15 years.

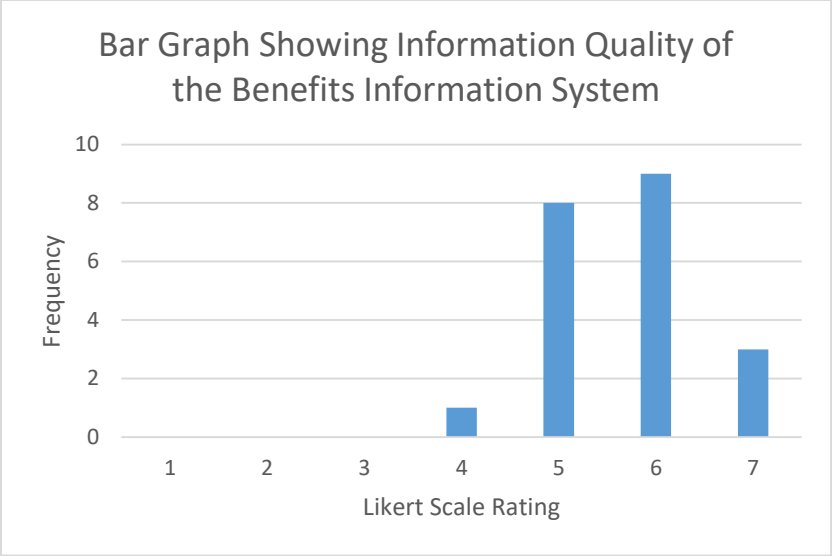

Figure 3 Bar Graph Illustrating Information Quality

The bar graph above is a graphical representation of internal users' responses based on information quality of the Benefits Information System. The results display that majority responses are between the (5) and (6) rating. These categories are between agree and strongly agree. There were no strongly disagree or disagree responses based on the quality of information of the system.

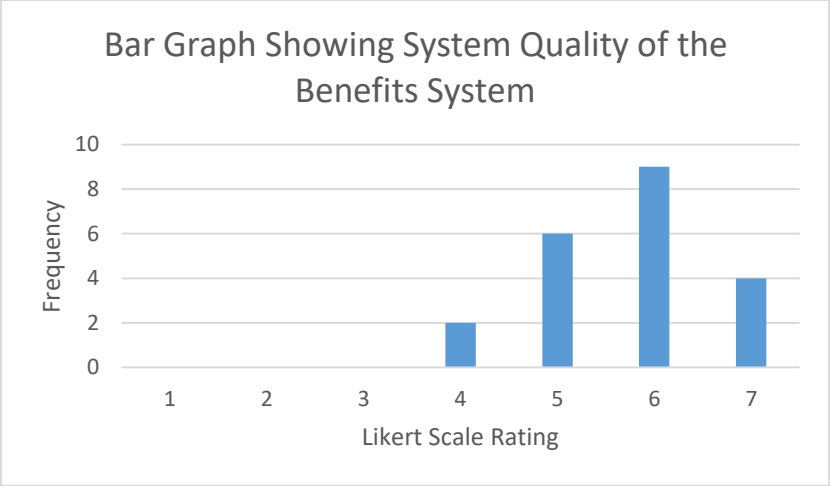

Figure 4 Bar Graph Illustrating System Quality

The bar graph above is a graphical representation of internal users' responses based on system quality of the Benefits Information System. The results display that majority of responses are between neutral (4), agree to strongly agree (5) to (7). There were no disagree or strongly disagree responses based on the quality of information of the system.

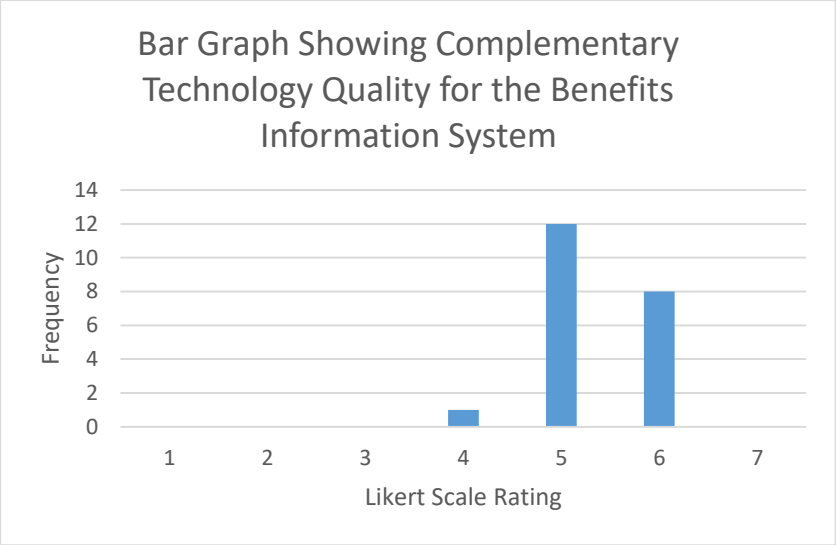

Figure 5 Bar Graph Showing Complementary Technology Quality

The bar graph above is a graphical representation of internal users' responses based on complementary technology quality of the Benefits Information System. The results display that majority of responses are between agree (5) and (6) which is a favorable response. There were no strongly disagree, or strongly agree responses based on the complementary technology quality.

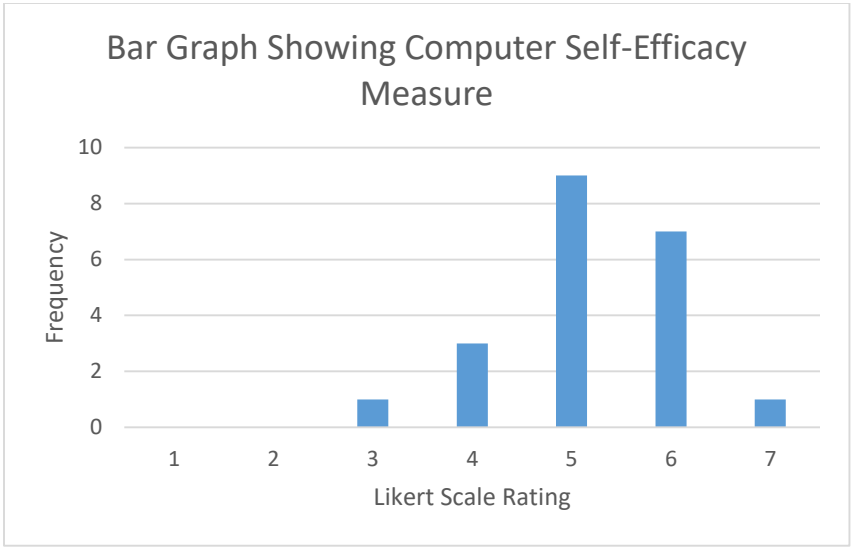

Figure 6 Bar Graph Showing Computer Self-Efficacy Measure

The bar graph above is a graphical representation of internal users' responses based on computer self-efficacy of the Benefits Information System. The results display that responses range from disagree (3) to strongly agree (7) with the highest frequency between agree (5) and (6). The results show that users are able to use the computer efficiently. However, some express neutrality (4) and disagreement (3).

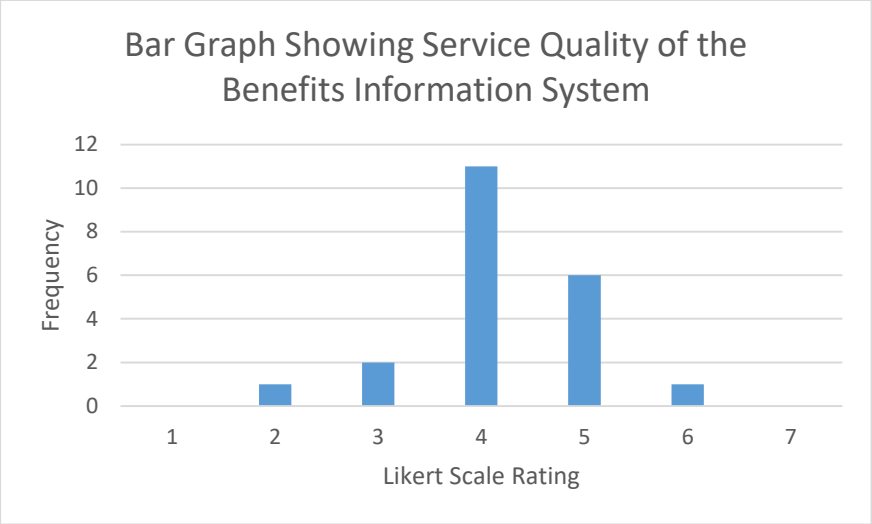

Figure 7 Bar Graph Showing Service Quality

The bar graph above is a graphical representation of internal users' responses based on service quality of the Benefits Information System. The results display that responses range from disagree (2) to agree (6) with the highest frequency between neutral (4) and (5). The results show that users are not fully satisfied with the technical assistance to overcome technical hitches when using the Benefits Information System.

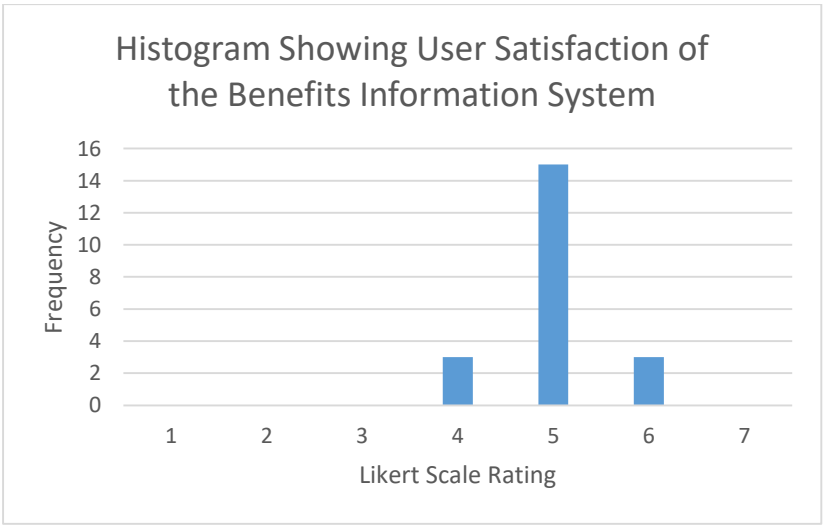

Figure 8 Histogram Showing User Satisfaction

The histogram above is a graphical representation of internal users' responses based on their satisfaction of using the Benefits Information System. The results display that majority of responses are clustered in agree (5) with frequency of the neutral (4) and agree (6) equally but relatively low. This indicates that although users are not in strong agreement or disagreement, the overall responses are still favorable.

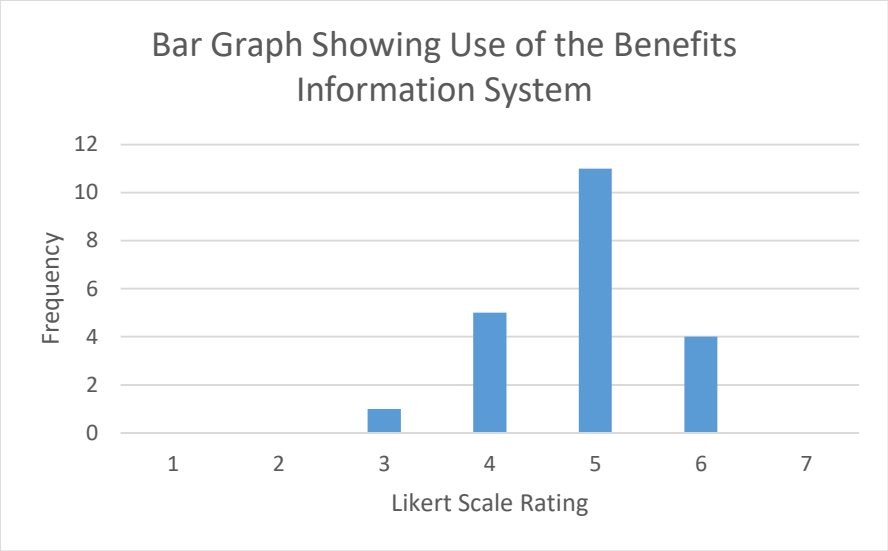

Figure 9 Bar Graph Showing Use of the Benefits Information System

The bar graph above is a graphical representation of internal users' responses based on use of the Benefits Information System. The results display that majority of responses are between neutral (4) and agree (5) and (6). Although no one strongly agreed (7) or strongly disagreed (1), the results are slightly unfavorable. There are some users who disagree (3) or are neutral about the use of the Benefits Information System.

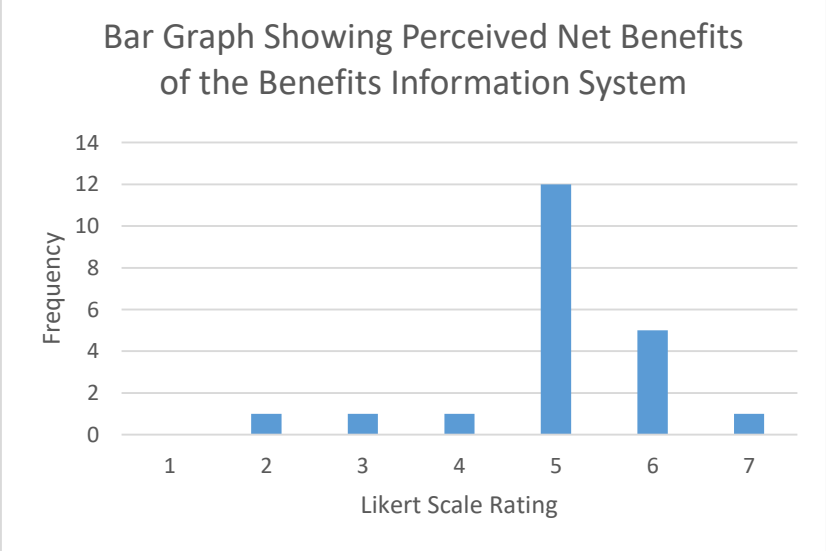

Figure 10 Bar Graph Showing Perceived Net Benefits

The bar graph above is a graphical representation of internal users' responses based on the perceived net benefits of using the Benefits Information System. The results illustrate that responses fall within the range of disagree (2) to strongly agree (7). This indicates that some users do not agree that the benefits of using the Benefits Information System offset its expenses. However, those in contradiction are a minor percentage of the total sample, therefore perceived net benefits still maintained slightly favorable results.

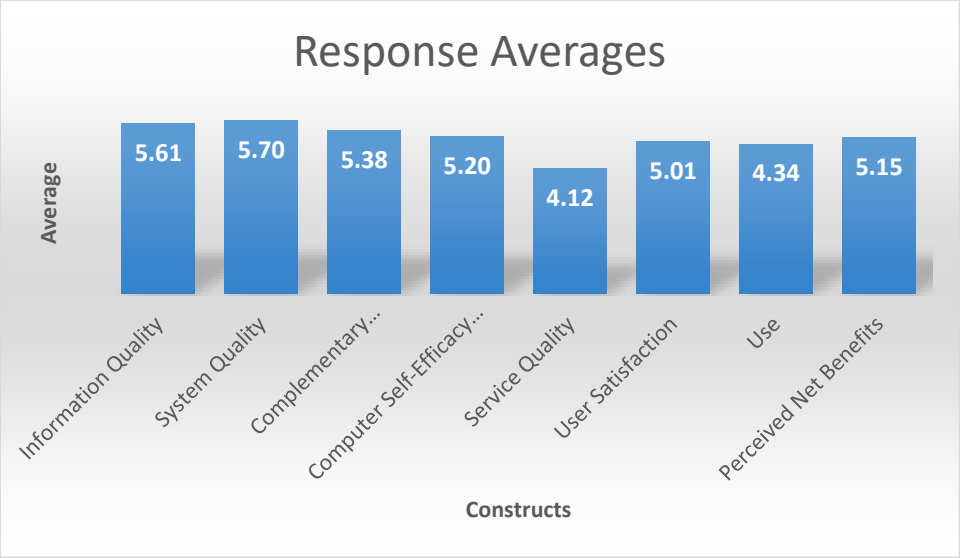

Figure 11 Bar Graph Illustrating Response Averages for Each Construct

As illustrated in the bar graph below, the data gathered from the internal users directly in contact with the Benefits Information System show favorable responses in the areas of information quality, system quality, complementary technology quality, user satisfaction and perceived net benefits. The average number chosen on the Likert scale for these constructs were 5 which is slightly favorable. The System Quality construct had the highest neutral response compared to the other tested constructs (5.70). However, in regards to service quality and use, the averages were 4. This can be linked to the service quality being slowed down due to lack of technical support when employees experience troubleshooting when utilizing the Benefits Information System. Such complications disturbs the efficient use of the system.

External Analysis

The public currently has access to the Benefits Information System through the Social Security Board's website. Using the D&M Model, a questionnaire for external users was constructed to measure its success in terms of: information quality, systems quality, complementary technology quality, service quality, user satisfaction, use, and perceived net system benefits. The table, charts, and graphs below illustrate the overall results for each construct.

Table 2 Characteristics of Respondents

Characteristics of External Users							
Gender		Age		Education		Years Utilizing Service	
Male	47%	Less Than 25	0%	PhD	0%	Less Than 5	13%
Female	53%	From 25 to 35	20%	Masters	0%	Over 5 to 10	20%
		Over 35 to 45	29%	Bachelors	13%	11 to 15 years	53%
		Over 45 to 55	33%	Associates	40%	Over 15 years	13%
		Older than 55	13%	High School	27%		
				Primary School	20%		

The table above reports the characteristics of external respondents. 15 questionnaires designed specifically for external users were distributed and all 15 were returned, generating a 100 percent response rate. In this case, female participants represented a higher percentage of the completed sample, compared to male participants who contributed to 47 percent of responses for internal users.

Approximately 33% of respondents for the external users were aged between 45 to 55 years. Meanwhile, 20%, 27%, 40% and 13% had attained Primary School, High School, Associates, and Bachelor degrees. Furthermore, the majority of the respondents (53%) have been utilizing the service of the Social Security Board.

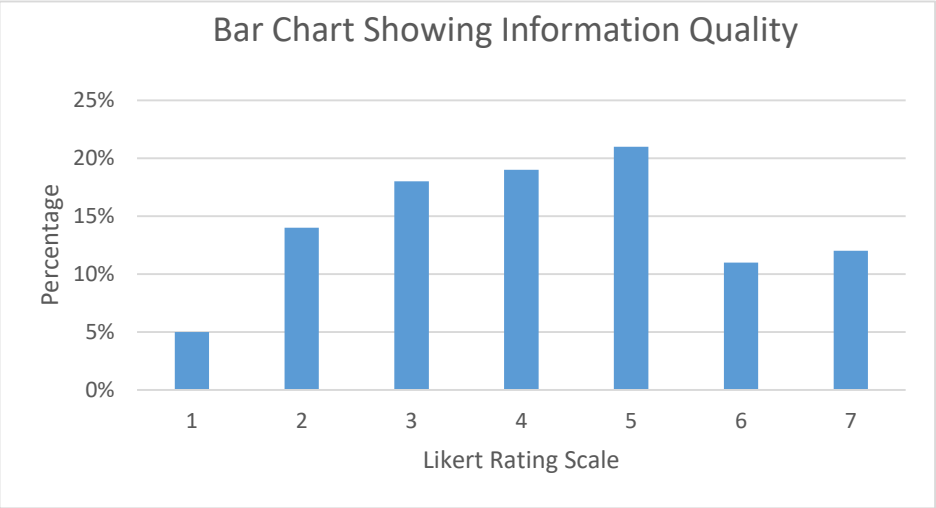

Figure 12 Bar Chart Illustrating Information Quality

The Bar Chart above is a graphical representation of external users' responses based on the information quality of using the Benefits Information System. The results display that majority of the responses are clustered in disagree (3), neutral (4), and agree (5). The highest choice for this construct was agree with 21% of respondents choosing (5). 5% of respondents chose (1) strongly disagree and 19% were neutral (4). This indicates that with the exception of a few individuals, information quality of the Benefits Information System is slightly unfavourable.

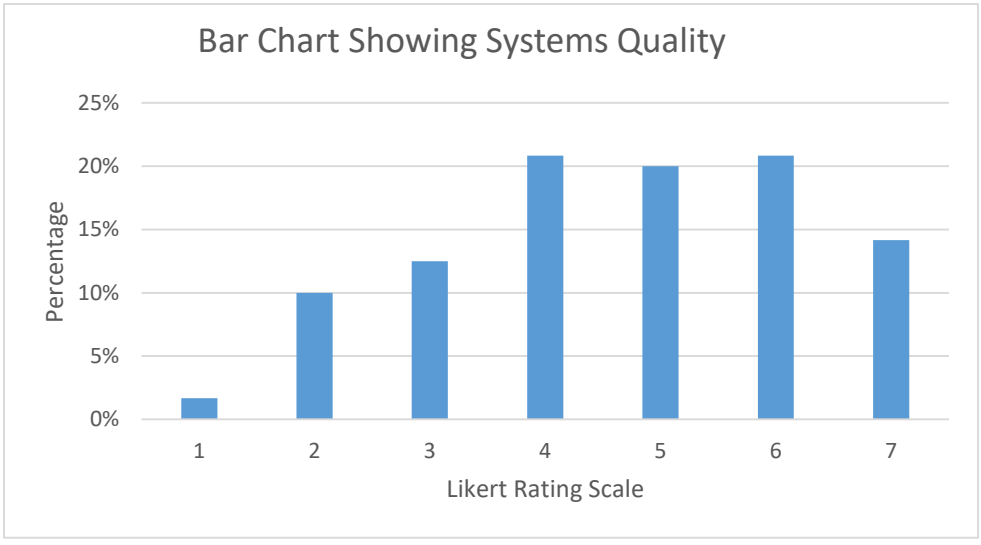

Figure 13 Bar Chart Illustrating Systems Quality

The Bar Chart above is a graphical representation of external users' responses based on the system quality of the Benefits Information System. The results display that majority of the responses are between

neutral (4), agree (5) and (6). The highest choice for this construct was at tie between neutral (4) and agree (6) with 21% of respondents. 14% choose strongly agree (7). 2% of respondents chose (1) strongly disagree, 10% disagree (2) and 13% (3). This indicates that with the exception of a select few, systems quality of the Benefits Information System is favorable.

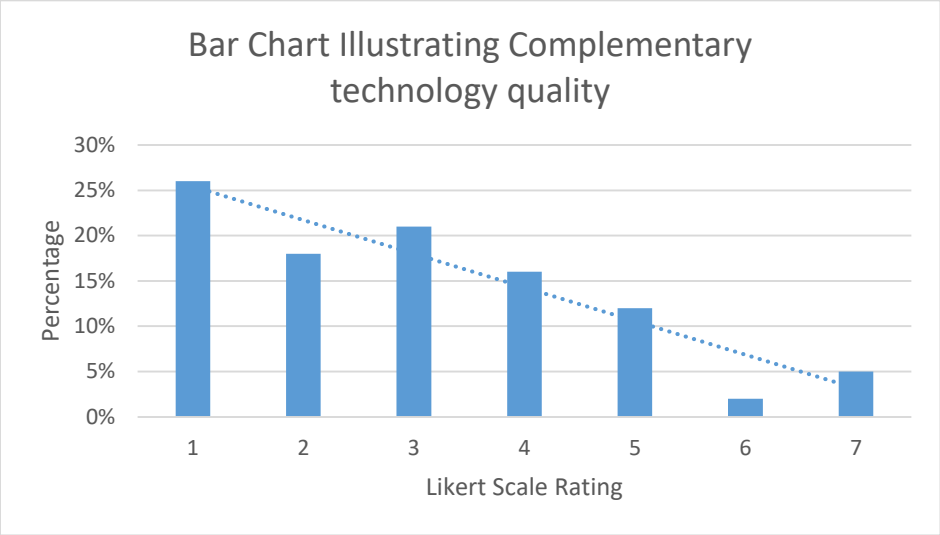

Figure 14 Bar Chart Illustrating Complementary Technology Quality

The Bar Chart above is a graphical representation of external users' responses based on complementary technology quality of using the Benefits Information System. The results display that the responses vary from strongly disagree (1) to strongly agree (7). The highest rating under this construct was strongly disagree (1) and was chosen by 26% of respondents. These results are unfavorable and indicate that users strongly disagree or disagree that they have complementary technology quality to use the Benefits Information System.

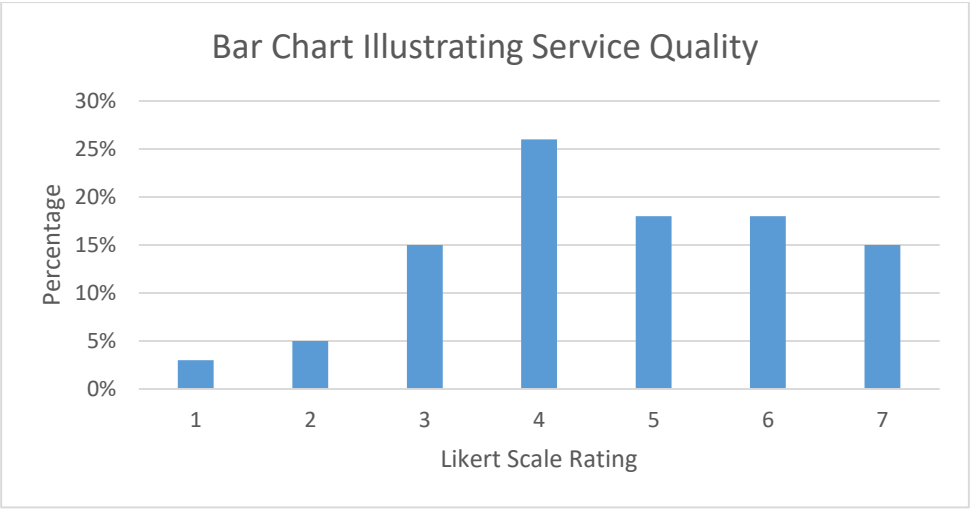

Figure 15 Bar Chart Illustrating Service Quality

The Bar Chart above is a graphical representation of external users' responses based on service quality of the Benefits Information System. The results display that majority of the responses are clustered in

neutral (4), and agree (5) (6). The highest choice for this construct was neutral with 26% of respondents. There was a tie between agree (5) and (6) with 18% of respondents. 15% chose strongly agree (7). Meanwhile, 5% and 15% of respondents chose (2) and (3) respectively. The responses varied with 2% strongly disagreeing, 5% and 15% disagreeing. This indicates that with the exception of a few individuals, the service quality of the Benefits Information System is favorable, while others remain neutral.

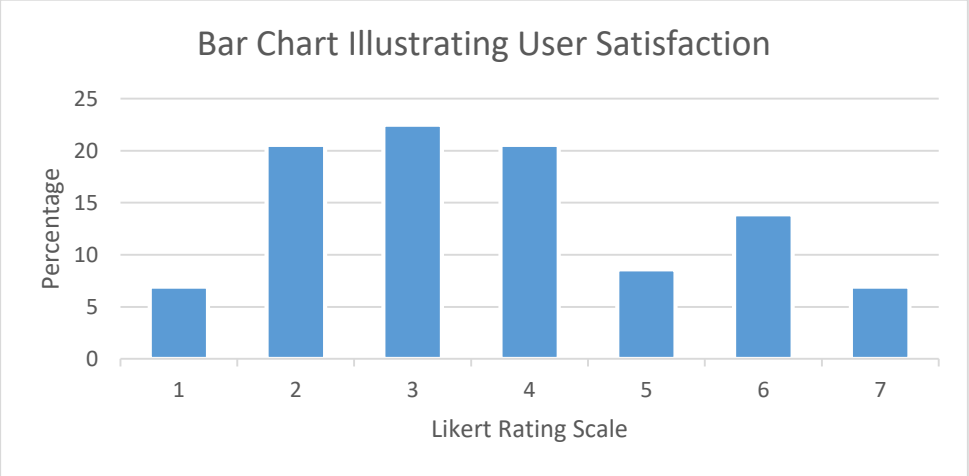

Figure 16 Bar Chart Illustrating User Satisfaction

The Pie Chart above is a graphical representation of external users' responses based on user satisfaction of using the Benefits System. The highest choice for this construct was disagree (3) with 23% of respondents, meanwhile 7% of respondents chose (7) strongly agree. 14% and 9 % chose agree (6) and (5) respectively. While 21% were neutral (4) and the remainder 21% disagreed (2) while 7% strongly disagreed (1). These results are unfavorable and indicate that users are strongly dissatisfied or dissatisfied with the Benefits Information System.

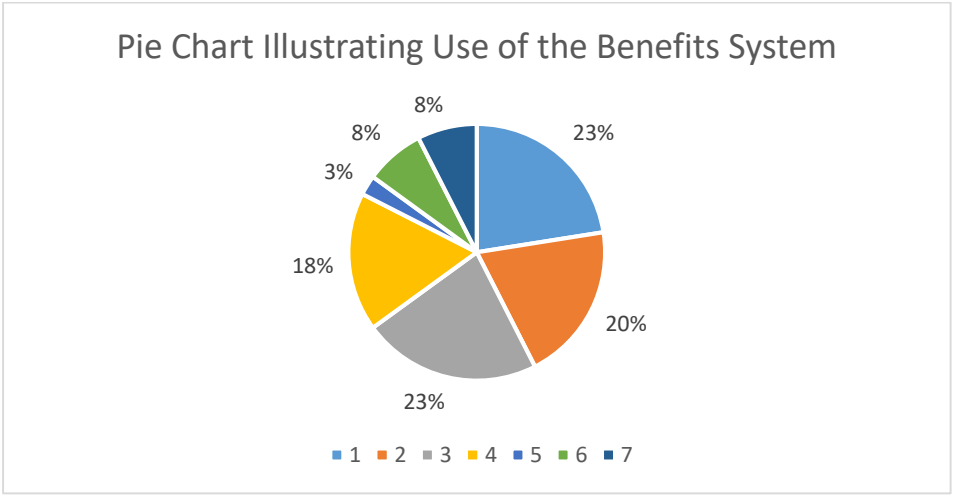

Figure 17 Pie Chart Illustrating Use of the Benefits System

The Pie Chart above is a graphical representation of external users' responses based on their use of the Benefits Information System. The highest choice for this construct was a tie between strongly disagree and disagree with 24% of respondents choosing (1) and (3). These results are unfavorable and indicate that users strongly disagree or disagree that they use the Benefits Information System. Since a large

percentage of respondents strongly disagreed, it can be concluded that in reality not many external users actually utilize the system.

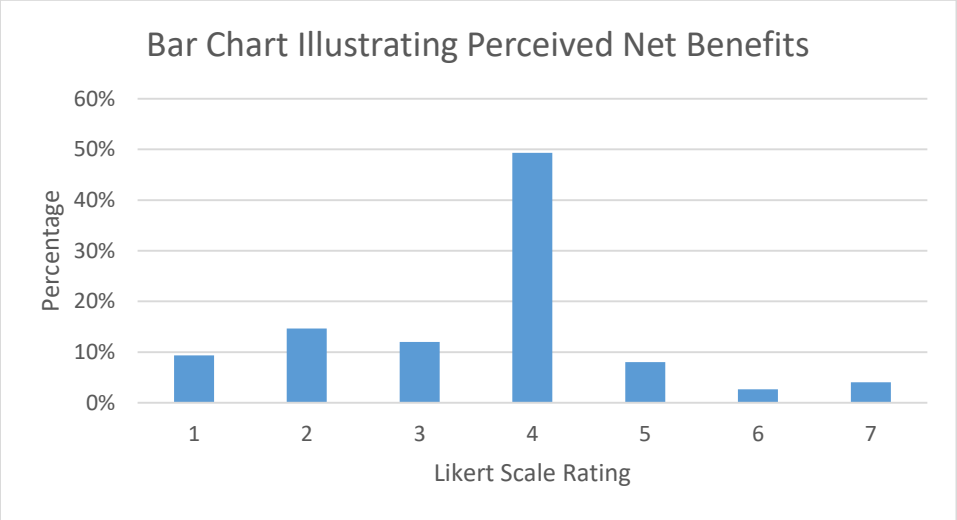

Figure 18 Bar Chart Illustrating Perceived Net Benefits

The Bar Chart above is a graphical representation of external users' responses based on the perceived net benefits of using the Benefits Information System. The results display the responses vary from strongly disagree (1) to strongly agree (7). The highest rating under this construct was neutral (4) and was chosen by 49% of respondents. These results are unfavorable and indicate that users are mostly neutral or disagree that using the Benefits Information System allows them to become more productive, reduces time and costs, helps achieve goals and improves planning.

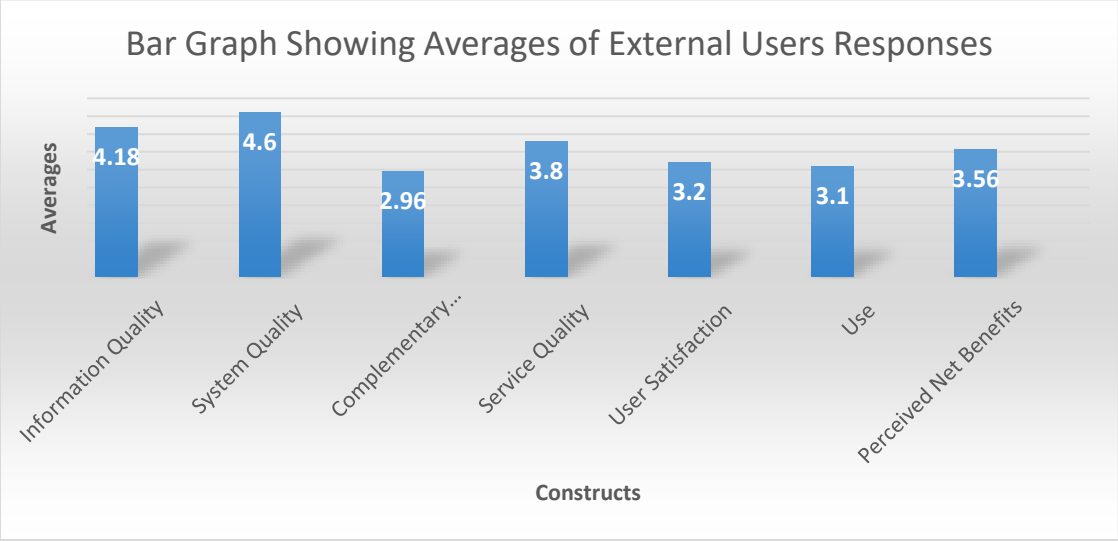

Figure 19 Bar Graph Illustrating Response Averages

Averages for the respondents rating of the Benefits Information System in terms of information quality and systems quality were neutral as most rated these constructs with a 4. Respondents disagree that they do not have the complementary technology quality to use the Benefits Information System. The perceived

system quality was rated at an average of 3 which is along the line of disagreement. Furthermore, on average the respondents disagreed that they are satisfied with the Benefits Information System. Respondents rated use of the system with a 3, which can indicate that users are not actually utilizing the system. Lastly, despite the overall neutrality of the information quality and systems quality, the respondents disagree that the Benefits Information System provides them any benefits.

Conclusion

Findings

The main purpose of this study is to evaluate the Benefits Information System, both internally and externally, with the DeLone & McLean IS Success Model. Internally, the findings are based on different elements that consist of system quality, complementary technology quality, computer self-efficacy, service quality, user satisfaction, use, and perceived net benefits of the system being evaluated. Thus, the information quality of the Benefits System has a positive result in the case of delivery of information that has a purpose, sufficient, understandable, updated, and relevance to work. When it comes to system quality and user satisfaction, the Benefits System is considerably satisfactory easy to use, accessible, user friendly and satisfaction to user by motivation in meeting expectations which majority of the respondents stated neutral.

There were favorable responses on complementary technology quality, in terms of the adequacy of internet speed and dependability of software, hardware and device for the system; computer self-efficacy falls similarly under this category. For service quality and the use of the Benefits System, the results are slightly negative which includes technical assistance, technical difficulties, high frequency, dependability and required knowledge of the system. Furthermore, there were favorable responses in perceived net benefits that consist of improvement in job performance and productivity, achievement of goals, and lower time and cost for the organization and employees. On an external basis, information quality of the system is slightly unfavorable, along with computer technology quality, user satisfaction, use and perceived net benefits being unfavorable. Overall, the system quality is favorable and the service quality is slightly favorable, while others are neutral about the Benefits Information System.

Implications

As stated before, our main objective is to evaluate the success of Benefits System, which was achieved. These objectives were accomplished by collaborating as a team, assigning tasks evenly to meet the deadlines and finding time for group meetings. Based on findings, the following implications were drawn. Primarily, it seems that the Benefits Information System is informed internally; thus, individuals mostly agreed in responses. Results indicate that the implementation of the system has indeed contributed to the organization's net benefits. However, it appears that customers hardly utilize the Benefits Information System and are not much satisfied or comfortable in using the system. In addition, it gives an impression that there is not much technical assistance when it comes to the system both internally and externally. Therefore, it affects the efficiency of the Benefits system and it appears that some of the users externally are not aware of the advantages of the system itself. Externally, users are not fully informed about the system and how it works. Moreover, individuals do not use complementary assets and lack motivation for use. When it comes to service, external users may not be guided for assistance.

Contributions & Limitations

Although there were some limitations, our contributions are highly obvious. The study can assist the organization to be more efficient in utilizing the Benefits Information System. It serves as a guide to present weaknesses and strengths of the system, and also open system developments in the longer run. Since the research is based on empirical evidence, it will be easier for the organization to make adjustments and strategic decisions. A limitation of the research may include the completion of questionnaires internally, because most employees were hesitant to answer due to the length of the questionnaire. Additionally, a drawback would be the lack of time as each member is enrolled in different courses, therefore find it difficult to balance tasks –especially when it comes to finding time to meet as a

group. Another limitation is that the sample size was limited; only 30 participants were willing to answer the questionnaire. This can lead to data misrepresentation. Since convenience sampling was used for external users, the sample population may not be generalized and can also lead to data misrepresentation.

Suggestions & Future Research

According to the research, it is found that customers are not making use of the Benefits System. Therefore, we would suggest that management urge customers to use the system as well as conduct practical training sessions. For the institution, we recommend that booths for registration be placed internally so that customers can service themselves. This would eventually be efficient because it would reduce manual labour and customers would not have to wait in lengthy lines. There should be an increased awareness of the Benefits System to expand customer knowledge and understanding on what the system is, when to use the system, why they should use the system and how it will benefit them. This can be done through different forms of communication including mass media, social media, conferences and much more to capture the attention of the audience. The Social Security Board's website is not fully utilized, therefore the business needs to spread the word out so that more customers access forms online. Overall, we recommend targeting consumers to use the system based on our study, as a source for action.

Focusing on a "MIS Solution", we suggest that the Social Security website is regularly updated so that the public has greater access to timely, relevant and accurate information and online services. The Social Security Board should also increase support and involvement from all levels of personnel. This will increase the awareness of citizens and businesses about accessible government services. Ultimately, we recommend service management for ensuring that IT services, such as information system support, are aligned with and actively support the business needs of the organization. We recommend future studies to be conducted for more concrete results that can add to the current study and further aid the Social Security Board in making strategic decisions. Future research should include Social Security customers throughout the country of Belize to further generalize the results. Future research should also focus on a larger sample size that will enable them to draw accurate conclusions. Majority of Belizeans are Social Security consumers, therefore such research will be beneficial for the country as the organization is widely common in Belize.

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Appendix

Questionnaire – "Measuring the Success of the Benefits Information System" (Internal Users)

Purpose

Our research is required for the CMPS3012 MIS course at University of Belize. This questionnaire asks for information about the productiveness and competence of the Benefits Information System. We would like to measure the use of the system and its effects on the organization's performance.

Please answer the questions in relation to your personal experience. Your individual responses to the questionnaire will be used solely for the purpose of this study.

Instructions

This is a survey, not a test; there are no right or wrong answers. Please tick the boxes to mark your answers.

1. Background Information	Answers:
Please indicate your gender:	Male ☐ Female ☐
Please indicate your age:	<25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ >55 ☐
Please indicate the number of years you have been working for this company:	5 years ☐ 6 to 10 years ☐ 11 to 15 years Over 15 years ☐
Please indicate highest education level attained:	PhD ☐ Masters ☐ Bachelors ☐ Associates ☐ High School ☐ Primary School ☐

Indicate your agreement with each statement by rating it from (1) strongly disagree to (7) strongly agree.

2. Information Quality	Disagree ----------Agree
The Benefits System provides information that is exactly what you need.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides information you need at the right time.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides information that is relevant to your job.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides sufficient information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides information that is easy to understand.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides up-to-date Information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
3. System Quality	**Disagree ----------Agree**
The Benefits System is easy to use.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System is user-friendly.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides high-speed information access.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides interactive features between users and system.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
4. Complementary Technology Quality	**Disagree ----------Agree**

The software on the device (desktop computer, laptop, mobile device) used to access the Benefits System is adequate.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The device hardware (desktop computer, laptop, mobile device) used to access the Benefits System is adequate.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The device (desktop computer, laptop, mobile device) used to access the Benefits System has an adequate internet connection in terms of speed and reliability.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
5. Computer Self-Efficacy Measure	**Disagree ----------Agree**
I COULD COMPLETE THE JOB USING THE BENEFITS SYSTEM...	
If there was no one around to tell me what to do as I go.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I had never used an information system like it before.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I had only the Benefits System manuals for reference.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I had seen someone else using the Benefits System before trying it myself.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I could call someone for help if I got stuck.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If someone else had helped me get started.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If l had a lot of time to complete the job.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I had just the built-in help facility for assistance.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If someone showed me how to do it first.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
If I had used similar information systems before this one to do the same job.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
6. Service quality	**Disagree ----------Agree**
The support staff keep the Benefits System software up to date.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
When users have a problem, the Benefits System support staff show a sincere interest in solving it.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System support staff respond promptly when users have a problem.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System support staff tell users exactly when services will be performed.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
7. User Satisfaction	**Disagree ----------Agree**
Most of the users bring a positive attitude or evaluation towards the Benefits System function.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You think that the perceived utility about the Benefits System is high.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System has met your expectations.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You are satisfied with the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
8. Use of the Information System	**Disagree ----------Agree**
The frequency of use with the Benefits System is high.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You depend upon the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

I was able to complete a task using the Benefits System even if there was no one around to tell me what to do as I go.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
I have the knowledge necessary to use the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
9. Perceived Net Benefits	**Disagree ----------Agree**
The Benefits System helps you improve your job performance.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System helps the organization save cost.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System helps the organization achieve its goal.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
Using the Benefits System improves the assessment and training.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
Using the Benefits System in job increases my productivity.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
Overall, using the Benefits System enhances recruitment and performance management.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

Please return this survey to the person who gave you the form.

Thank you for your participation.

Questionnaire – "Measuring the Success of the Benefits Information System" (External Users)

Purpose

Our research is required for the CMPS3012 MIS course at University of Belize. This questionnaire asks for information about the productiveness and competence of the Benefits Information System. We would like to measure the use of the system and its effects on the organization's performance.

Please answer the questions in relation to your personal experience. Your individual responses to the questionnaire will be used solely for the purpose of this study.

Instructions

This is a survey, not a test; there are no right or wrong answers. Please tick the boxes to mark your answers.

1. Background Information	Answers:
Please indicate your gender:	Male ☐ Female ☐
Please indicate your age:	<25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ >55 ☐
Please indicate the number of years you have been working for this company:	5 years ☐ 6 to 10 years ☐ 11 to 15 years Over 15 years ☐
Please indicate highest education level attained:	PhD ☐ Masters ☐ Bachelors ☐ Associates ☐ High School ☐ Primary School ☐

Indicate your agreement with each statement by rating it from (1) strongly disagree to (7) strongly agree.

2. Information Quality	Disagree ----------Agree
The Benefits System provides information that is exactly what you need.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides information you need at the right time.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides sufficient information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides information that is easy to understand.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides up-to-date Information.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
3. System Quality	**Disagree ----------Agree**
The Benefits System is easy to use.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System is user-friendly.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides high-speed information access.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System provides interactive features between users and system.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

4. Complementary Technology Quality	Disagree ----------Agree
The software on the device (desktop computer, laptop, mobile device) used to access the Benefits System is adequate.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The device hardware (desktop computer, laptop, mobile device) used to access the Benefits System is adequate.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

The device (desktop computer, laptop, mobile device) used to access the Benefits System has an adequate internet connection in terms of speed and reliability.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
5. Service quality	**Disagree ----------Agree**
The support staff keep the Benefits System software up to date.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
When users have a problem, the Benefits System support staff show a sincere interest in solving it.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System support staff respond promptly when users have a problem.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System support staff tell users exactly when services will be performed.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
6. User Satisfaction	**Disagree ----------Agree**
You have a positive attitude or evaluation towards the Benefits System function.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You think that the perceived utility about the Benefits System is high.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System has met your expectations.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You are satisfied with the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
7. Use of the Information System	**Disagree ----------Agree**
The frequency of use with the Benefits System is high.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
You depend upon the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
I was able to complete a task using the Benefits System even if there was no one around to tell me what to do as I go.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
I have the knowledge necessary to use the Benefits System.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
8. Perceived Net Benefits	**Disagree ----------Agree**
The Benefits System helps you improve your planning.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System helps you save time and cost.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
The Benefits System helps me achieve my goals.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
Using the Benefits System increases my productivity.	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

Please return this survey to the person who gave you the form.

Thank you for your participation.