

Evaluating the Belize Health Information System's Success: A Developing Country's Perspective

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Abstract

This paper conducts a study on the IS Success of the Belize Health Information System used at Belize Council for the Visually Impaired (BCVI) specifically. BHIS is an IS used by BCVI and all other government healthcare facilities. An extended amount of research has been done globally, however, limited research can be found on information systems in developing countries, such as Belize. As a result, this paper aims to contribute to the body of knowledge and evaluate how well BHIS is being utilized at BCVI and its effectiveness. In doing so, a quantitative research approach was taken. The tool used to collect the necessary data was a survey and the framework used to analyze the data was the Delone and McLean model. This research was extended to understand Information systems not only in Belize, but also in other developing countries. Overall, the results showed that BHIS improves the productivity of the employees at BCVI and majority of them find themselves dependent on the IS to perform their duties.

Keywords: Information Systems, Information system success model, Belize Health Information System, developing countries, Belize.

Introduction

The Belize Health Care information System (BHIS) is an information system, dynamic and wide-ranging, that attempts to make healthcare services more operational, inexpensive and rapid. In a developing country like Belize this means enhancement of the overall quality of healthcare service provided to Belizean Citizens. The BHIS provides a fully cohesive information system that provides every client with an Electronic Health Record and thus provide accurate and appropriate support to both the individual and the public health authorities. The BHIS is a centralized healthcare system that captures information on patients in regional, national or local sectors and this connects information to the government with every citizen, hospital, clinic, pharmacy or lab within the country. The information system then facilitates the collection of data on common issues such the percentage of the population living with HIV and also

captures health trends, health outbreaks, supply usage and human resource. This then allows for a client's medical history to be readily available in all if not most clinics within the country.

Understanding the central transaction of the healthcare is between the provider of the healthcare and the client. The main objective of any information system is to improve operational excellence while still maintaining customer privacy. However, for the BHIS to be successful in Belize the government must ensure that the information system is not just utilized but utilized properly by trained staff. This information system offers from accounting to pharmacy the entire cross section of practical professionals that compromise of healthcare sector is put into action by the meeting of client and clinician. From the time the client steps in the clinic to receiving medication from pharmacy, the employees do their best to record every transaction.

BHIS has diverse modules such as the Electronic health record and admission discharge transfer that jointly are used to record the personal data of each client and the specifics of each encounter. The Clinician Order Entry module creates, dispenses, cancels and administers prescriptions. The Financial Module provides the cost and the prices of the supplies, service and medication of each encounter between healthcare provider and customer. The Maternal Child Health focuses on identifying high risk pregnancies. The Human Resource Module identifies jobs and job placement, employee performance and qualification. The BHIS include other modules such as HIV, laboratory testing and supply chains

Technology has impacted the world especially in the health sector, as presently it covers a wider range of clinics, medical issues and procedures. (Øvretveit, Scott, Rundall, Shortell & Brommels; 2006). Technology changes rapidly and makes it difficult for third world countries like Belize to compete with developed countries. (Porter and Millar; 1985). Technology has changed everything from the way businesses operate to education to the quality of healthcare provided. As Belize attempts to adapt to a changing world by installing new information systems to enhance healthcare the change will only be possible if the mannerism in which the employees within the organization and the attitude of customers towards information systems change.

Even institutions like Belize Council for the Visually Impaired (BCVI) make use of the BHIS healthcare system. The Belize Council for the Visually Impaired (BCVI) is a non-profit organization that aims to improve the quality of life for individuals with visual impairments and reduce the prevalence of blindness through appropriate eye care. However, the BHIS has not been studied enough to know how effective the information system is within BCVI. Although the information system is made available to institutions such as BCVI its success highly depends on the efficiency of the staff. The fact that BCVI is a non-profit organization and operating five different locations makes it more difficult for the staff and institution itself to quickly adapt to the technological changes and learn how to make use of the information this information system provides. The BHIS should enhance decision making but that's only if the information of every client is properly recorded and on how well the staff can make use of the information system's information. If all information is properly recorded then the results of clients should be able to be used for more future research. (Baxter, Wormald, Musa and Patel; 2014).

This research is essential since healthcare is vital to every Belizean citizen and if the information system is properly utilized then that will positively affect public health. The information system should improve decision making, decisions that affects the entire community either directly or indirectly as it relates to public health and well-being. Through such decisions made on the information gathered from the system it is that the different services and medications are supplied to meet immediate needs to combat any threatening health issue to the community. Thus the effects of the Information System (IS), users fulfilment and users ability to use the IS should be studied to analyse the effectiveness of the information system and identify methods and techniques that can be implemented to support the use of information systems.

Literature Review

BHIS is comprehensive Health Information System used by BCVI and many other health care facilities in Belize. Given its immense popularity and usage, this literature review seeks to establish the theoretical

foundation and conceptualization of BHIS success based on prior IS success studies, particularly Delone and Mclean IS success Model.

Indeed, IS success can be very diverse with the vast number of variables associate with it; however, after extensive analysis, Delone and Mclean (1992) has concluded that the dependent variable in MIS research is a particularly important measure. Without a well-defined dependent variable, much of IS research is purely speculative. More so, six major factors has embodied IS success, namely: System Quality (quality characteristics of the IS itself), Information quality (quality of the output of the IS), Use (consumption of the output of the IS), User satisfaction (IS user's response to the IS), Individual impact (effect of the IS on the behaviour of the user), and Organizational impact (the effect of the IS on organizational performance) (Delone and Mclean, 2003)

Evidently, the Delone and Mclean model uses information as the output of an IS. More so, their categorization is based on by Shannon and Weaver (1949) Communication Theory and Mason (1978) Influence theory. According to Shannon and Weaver, the effect of information on its users can be measured at three levels: The Technical (accuracy and efficiency of the communication systems), the Semantic (the success of the information in conveying the intended meaning) and Effectiveness (how the message affects the receiver's behaviour). Mason further explained Shannon and Weaver's theory by stating that the effectiveness level includes the influence on the user's behaviour. Therefore, the user's behaviour can change based on how the information is applied (Rai et al, 2002)

Indeed, Delone and Mclean's module added to this body of knowledge as their model's system quality is related to the technical level, information quality related to semantic level, and use, user satisfaction and individual impact related to effectiveness (influence) level of prior research.

Overall, the Delone and Mclean (1992) module has significantly impacted IS success. First, It has created a robust framework to summarize the various IS success measures. Secondly, It shows a temporal and causal interdependency between the various constructs. Thirdly, the module shows various organizational levels as it evaluates IS.

Amidst the many studies that have tested and supported Delone and Mclean IS Success Module, some research has suggested gaps in the model (Seddon, 1997; Garrity and Saunders, 1988; Balleantyne et al, 1996). The most prevalent gap existed because service quality was not a part of the variables. In response to this, Delone and Mclean revised their module in 2003 by adding service quality as a dimension and combining individual impact and organizational impact to form benefits. Surely then, module became stronger and more comprehensive, thus meeting universal needs.

According to Delone and Mclean (2003) when the system is used a lot, the net benefits and quality of the system should be considered as contributing factors. More so, the new dimension of service quality is the most vital success measure.

IS success Developing countries.

According to literature (Sife, Lwoga and Sanga, 2007) developing countries faced many constraints in implementing Information and Communication Technologies (ICTs). These constraints included: A lack of skilled and efficient work force as well as a lack of infrastructure necessary to operate the Information Systems. Given these limitations to ICT implementation, a digital divide was created which led to a gap between those people with access to the technologies and the ability to use them effectively, and those without (Walsham and Sahay, 2006)

Heeks (2002) also suggested other constraints of Information System Success in developing countries, namely: A lack of literature (until recently, studies on IS and developing countries were limited), Lack of evaluation (Those capable of evaluation often lack the will, resources or capacity), and Focus on case studies (Literature is dominated by case studies of individual IS projects)

Walsham and Sahay (2006) stated that ICT's in developing countries are given increased attention; this is evident in the growth of the IS research addressing the issue. For example, The Journal Information Society published a special issue on ICTs in developing countries in 2002 (Vol. 18, No. 2). Also, The International Federation of Information Processing had a conference in Athens in 2003 (Korpela,

Montealegre, & Poulymenakou, 2003) with working groups under the title, “Organizational Information Systems in the Context of Globalization.”

Health Information System in Developing Countries

The World Health Organization (2002) suggests that developing countries need to have appropriate information and health information systems to manage and strengthen their health system. In practicality, however, the development of HIS has proved to be a challenge because of the complexity on organizations, and uncoordinated nature of organizations having their own HIS (Jayasuriya 1999; Gladwin et al. 2003; Littlejohns, Wyatt et al. 2003)

Given the limitations mentioned, the obvious solution would be an integrated health information system (Braa et al, 2007). The framework of such system needs to be equipped with specific standards for information sharing between information systems, programs, and institutions.

Methodology of the Study

This research project tested the Information System (IS) qualities of the Belize Health Information System utilized at the Belize Council for the Visually Impaired (BCVI) and simultaneously evaluated the overall success of the IS. Through the IS Success Model implemented by Delone and McLean (1992), BHIS' success was tested, evaluating all six success variable categories: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact. The new dimensions of Service Quality and Intention to Use were added to the updated model and the original dimensions of Individual and Organizational Impact were merged into a new dimension of Net Benefits (Delone & McLean, 2003). Along with the dimensions in the updated IS success model, an additional category of complementary technology was also tested to examine its availability, reliability and overall efficiency. All six dimensions of the IS Success model are shown below, as well as the seventh measurable construct of complementary technology quality in Figure 1.

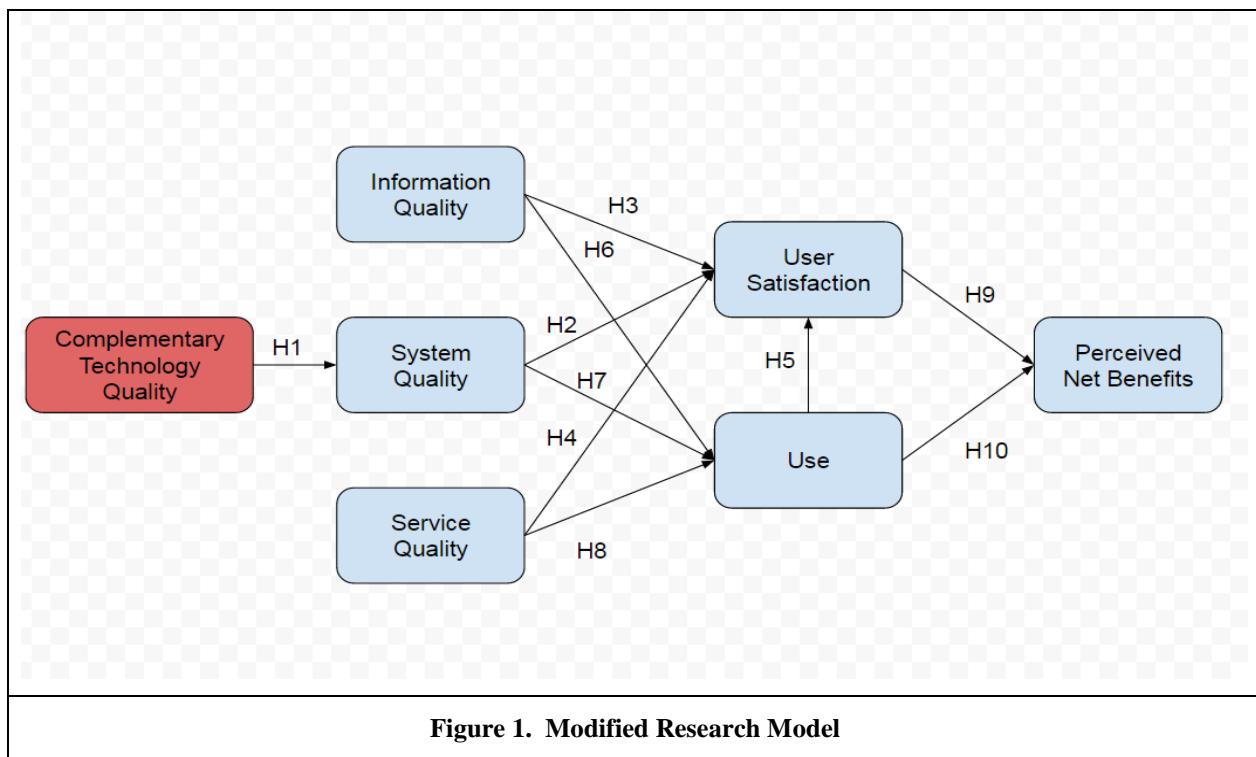


Figure 1 demonstrates the six success variable categories of the Delone and Mclean model, along with the additional construct, Complementary Technology Quality used to validate this research study.

The hypothesized relationship between the BHIS success variables are based on the theoretical and empirical work. Accordingly, this research paper attempted to extend the Delone and Mclean IS success model by adding an additional construct and hypothesis:

Hypotheses

- H1. Complementary technology quality will positively impact system quality.
- H2. System quality will positively impact user satisfaction.
- H3. Information quality will positively impact user satisfaction.
- H4. Service quality will positively impact user satisfaction.
- H5. Use will positively impact user satisfaction.
- H6. Information quality will positively impact use.
- H7. System quality will positively impact use.
- H8. Service quality will positively impact use.
- H9. User satisfaction will positively impact perceived net benefit.
- H10. Use will positively impact perceived net benefit.

Research Design

Due to the time constraint of this research, the quantitative approach was taken. To ensure the validity of the research information, the researchers utilized the Bailey and Person (1983) seven item scale with several adjustments to fit the context of BHIS. Bailey and Person's instrument is the standard instrument for data collection in the IS field, therefore it has been selected to conduct surveys (*See Appendix*). Each of the seven constructs were measured using the Likert Scale ranging from one (1) to seven (7), with one categorized as strongly disagree and seven as strongly agree. The seven constructs and their sources can be found below in Table 1.

Table 1. Constructs and sources	
Construct	Source
Information Quality	<i>Bailey and Person (1983)</i>
System Quality	<i>Alshibly, (2011)</i>
Services Quality	<i>Change et al., (2009)</i>
Complementary Technology Quality	<i>Teece, D. J. (1988).</i>
User Satisfaction	<i>Seddon and Yip (1992)</i>
Use	<i>Balaban et al., (2013); Rai et al., (2002)</i>
Perceived Net Benefit	<i>Alshibly,(2011); Tansley et al, (2001)</i>

Sampling & Data Collection

The data was collected from a sample of employees at BCVI from four (4) different branches: Orange Walk, Belmopan, Punta Gorda and Belize City. As a result, the method for this sampling is ‘random sampling’.

Due to the fact that the research study was done in Belize City, the surveys were sent electronically through Google Forms for those who worked in the other districts. A total of thirty six (36) surveys were distributed, in which thirty one (31) of them were returned, yielding a response rate of 86.1 percent. The characteristics of the respondents can be found below in Table 2.

Table 2. Characteristics of the respondents		
Characteristics	Number	Percentage
Gender		
Males	6	19.35%
Females	25	80.65%
Age		
<25 years	5	16.12%
25-35 years	10	32.26%
35-45 years	13	41.94%
45-55 years	3	9.68%
>55 years	0	0%
Computer Experiences		
<5 years	1	3.23%
5-10 years	15	48.39%
10-15 years	6	19.35%
>15	9	29.03%
Working Experiences		
<5 years	8	25.81%
5-10 years	9	29.03%
10-15 years	7	22.58%
>15	7	22.58%
Education Level		
Masters	1	3.23%
Bachelors	4	12.90%
Associates Degree	23	74.19%
High School or Less	3	9.68%
Position		
Manager	4	12.90%
Forman/Supervisor	4	12.90%
Non-Manager	23	74.19%

Data Analysis and Results

Due to the small sample size, hypotheses testing was impossible. Hence, data was analyzed using applied research techniques, and illustrated through the following figures. The histograms provided a more effective visual of the results for the constructs of the theoretical model.

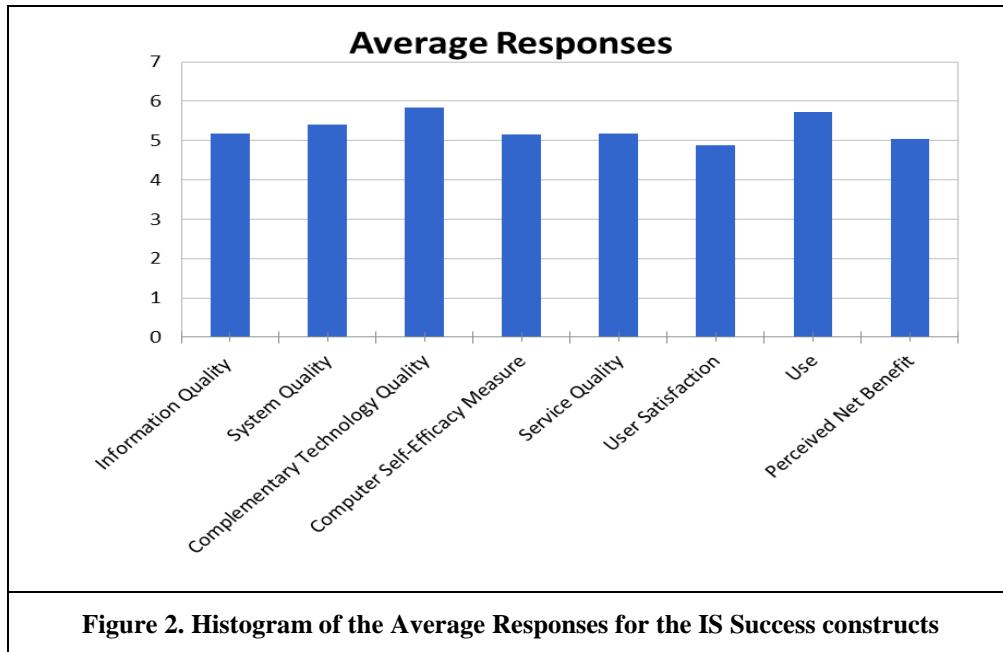


Figure 2 illustrates the average scores for the responses for each construct. The results showed that all responses are above average and Complementary Technology along with Use have the highest response scores.

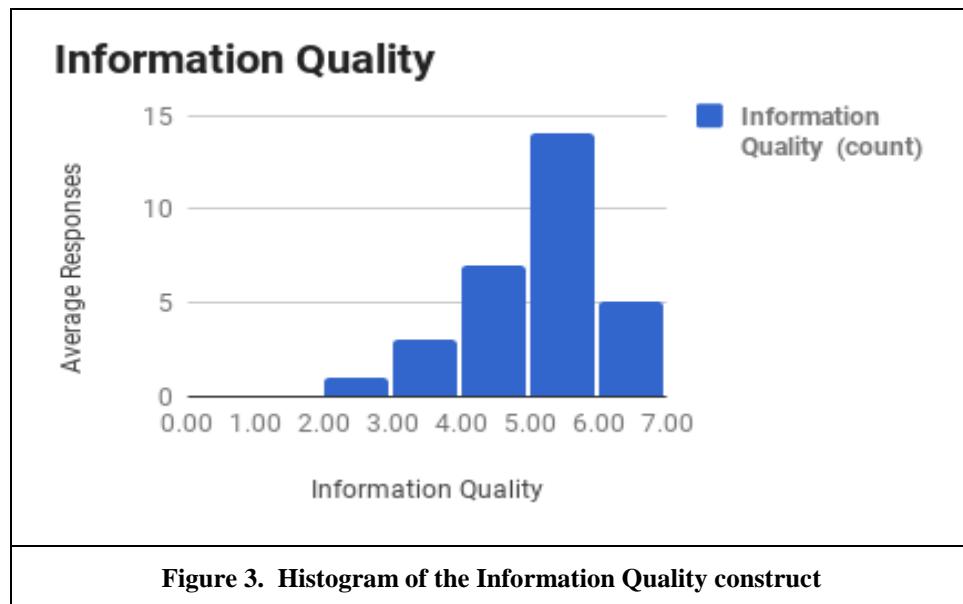


Figure 3. illustrates the average responses for Information Quality construct. The results showed that majority of the responses are above average, indicating that BHIS provides information that are up-to-date fairly well.

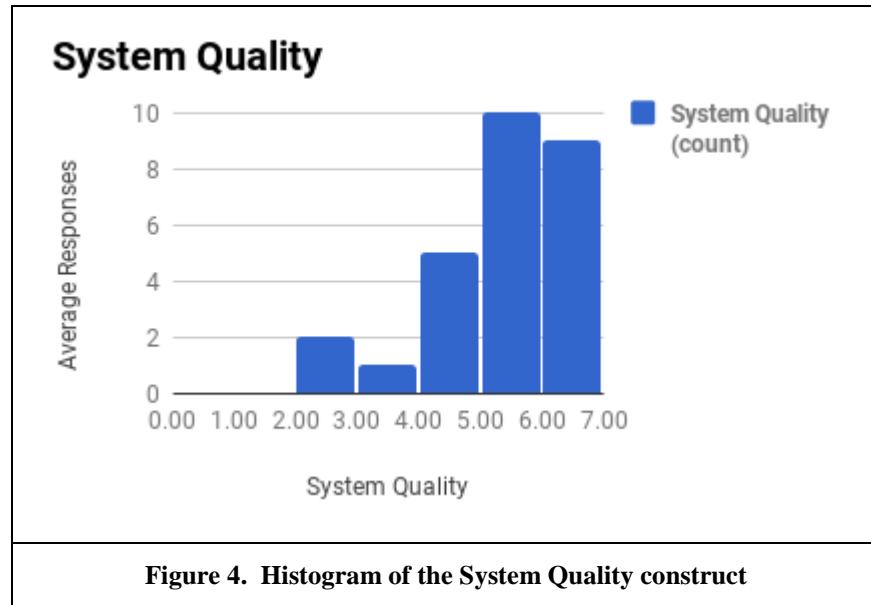


Figure 4. illustrates the average responses for the System Quality construct, showing that majority of the respondents agree that BHIS is easy to use and user friendly.

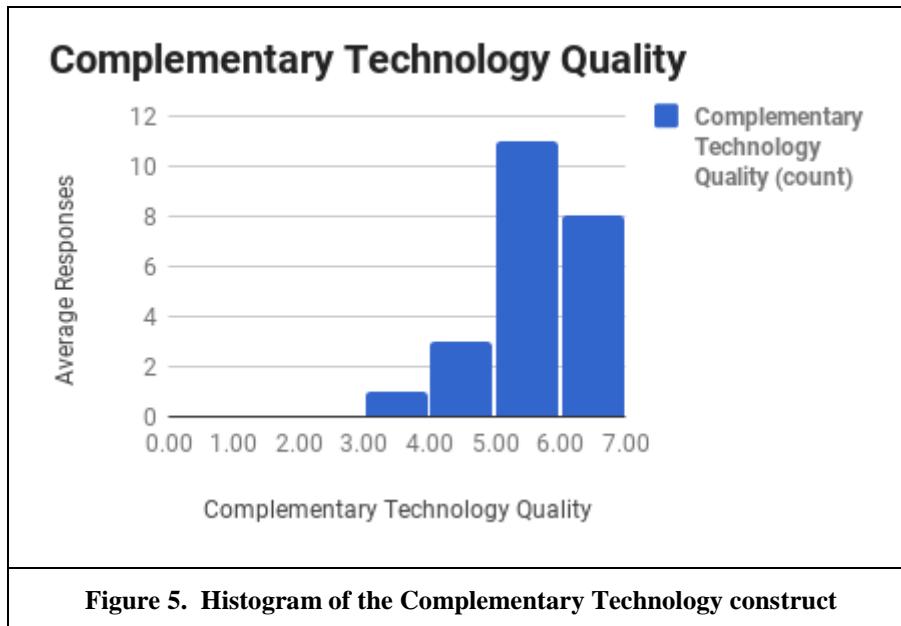


Figure 5. illustrates that most of the respondents agree that the devices being used are adequate and satisfy its functionality standards.

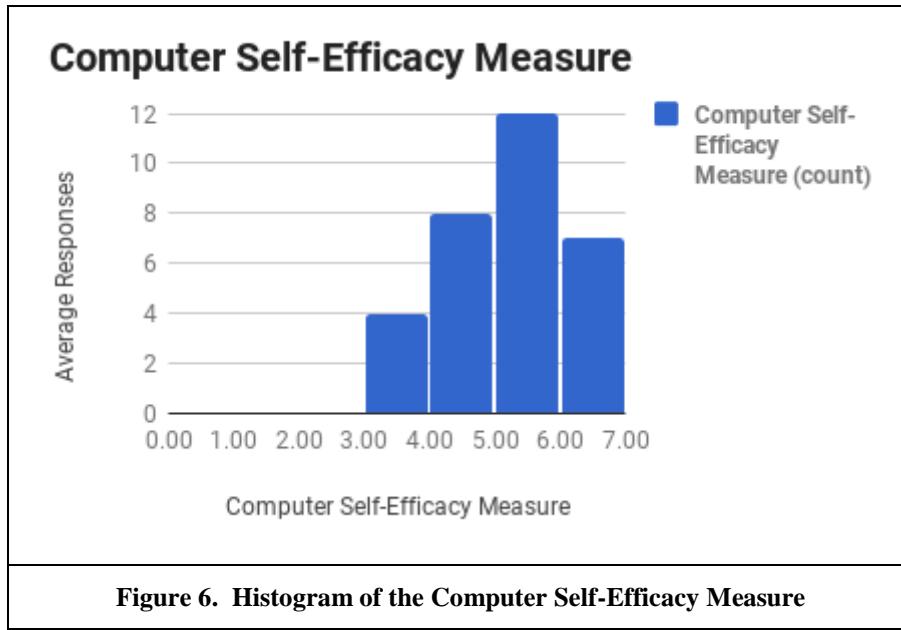


Figure 6. illustrates that majority of the response scores are above average, indicating that most of the respondents agree that they are able to complete their job using the BHIS without much assistance.

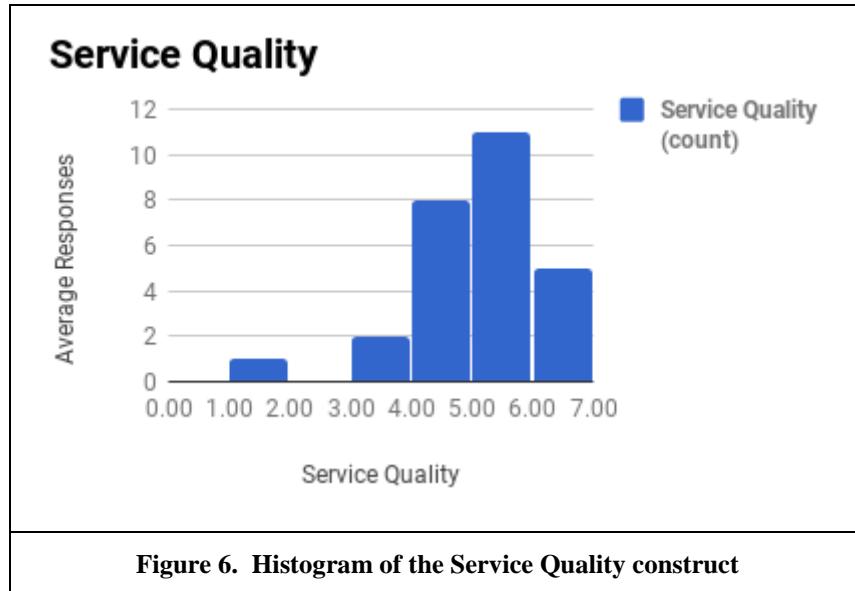


Figure 6. illustrates that the majority of the respondents are fairly satisfied with the service quality of BHIS. Only one respondent indicated a low score for this dimension, stating that the software support staff takes a while to solve the problem.

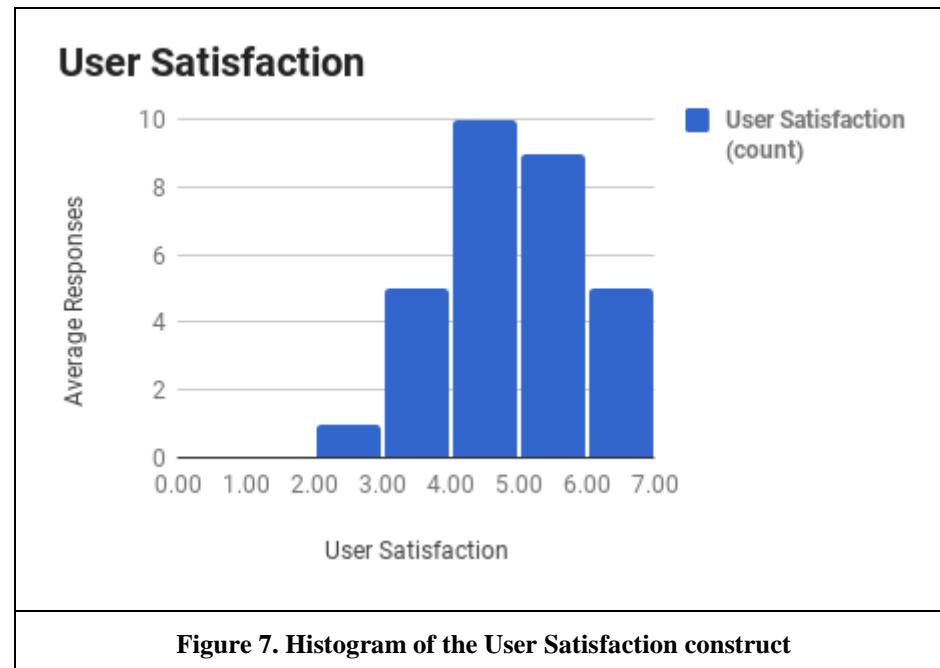


Figure 7. illustrates that most of the respondents agreed that BHIS has met their expectations and that they are satisfied with the IS.

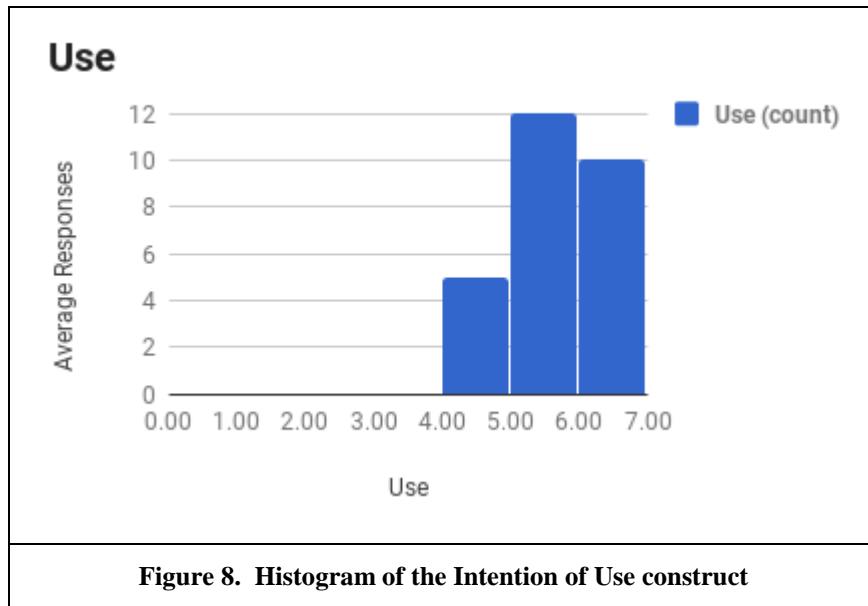


Figure 8. illustrates that all of the respondents scored this dimension above average. This indicated that the staff of BCVI are dependent upon the BHIS since the frequency of use is high, and they also have the knowledge necessary to use the IS.

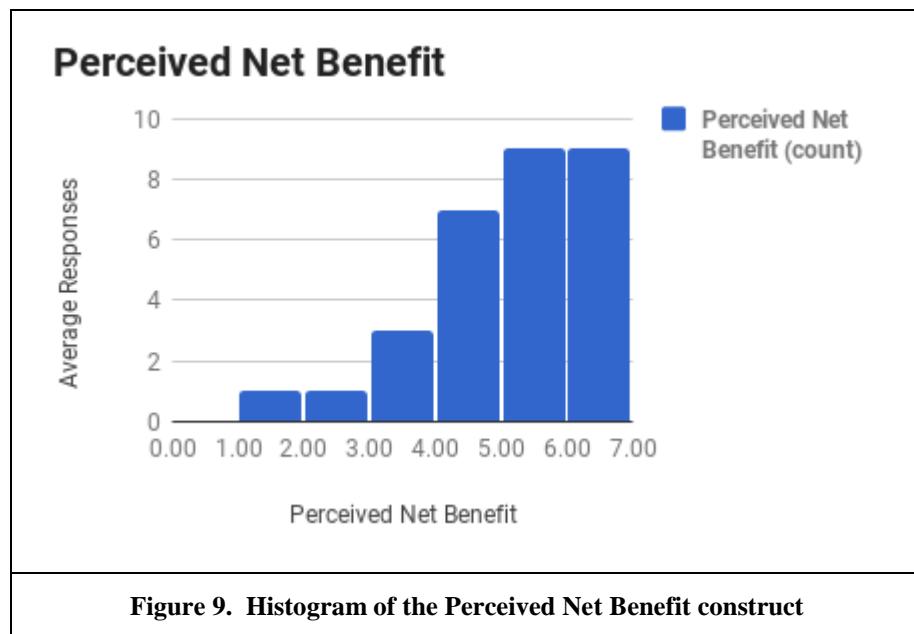


Figure 9. illustrates that more than half of the respondents agree that BHIS helps them improve their job performances, as well as their productivity. They agree that using BHIS enhances recruitment and performance management.

Additionally, the executive director at BCVI, Carla Ayres Musa, stated that management believes the system is quite rigid and does not allow for much adaptation to their needs. The system is owned by the Government of Belize, meaning BCVI must contact the Ministry of Health to consider any adjustments and problems.

Conclusion

This research is based upon Delone and Mclean (1992) Information System Success model. Its six major factors helped us identify the successes and failures of the Belize Health Information System (BHIS) at the Belize Council for the Visually Impaired (BCVI). Delone and Mclean's IS success model demonstrates that for an IS to be successful the perceived net benefit must be high, and for BCVI's BHIS, this was the case according to its employees. From the surveys collected, it is noted that the BHIS is deemed successful to BCVI employees.

All factors that were considered including: information quality, system quality, complementary technology quality, computer self-efficacy measure, service quality, user satisfaction all have a final result of satisfaction. These factors contribute to the perceived net benefit of the system which also resulted high. The system allows its users to retrieve the information in a timely manner and also provide them with the information needed to complete their job. However, 10 of 31 of BCVI's population involved in the survey are still neutral about the system's usage. This particular question is the lowest scored of all, partly due to the system not being able to update itself without internet connection, which was understood from IT manager's perspective (also a system maintainer) .

No interviews were conducted to understand BHIS's benefits to BCVI, however, one researcher is currently employed at the organization, and another is a past employee. This allowed the researchers to have a deeper insight into the true usage of the information system at the organization. As mentioned above, the IT manager's input was gained during a personal conversation. His particular concern was that the system is not able to update itself without internet connection. The internet connection to access this system is reliable, however, at some point, the internet connection will fail due to the internet provider.

This is outside of the organization's control. BCVI are not owners of this system, they simply use a part of the system that was created to suit the needs of the organization.

Limitations

The researchers encountered one limitation during the research process. BCVI has most of its employees out district that also use the information system on a daily basis. This caused the researchers to have to find a new way to get the surveys answered. The survey had to be digitized using Google Forms and emailed to these employees. Thirty-six surveys were issued and only thirty one were returned. Seven of these surveys were on paper from the Belize City branch and the other twenty-four were obtained through Google Forms.

Recommendations

Future researchers must consider using a mixed research approach to obtain more information from management's perspective of the system and the way they use it. Time management is also important; BCVI has five clinics throughout the country so researchers must find a convenient way to reach survey these employees. Also, a demonstration of how the system operates will allow the researchers to have a clearer view of employees' usage.

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Appendix

Survey Template

Questionnaire I – “Effectiveness of the Belize Health Information System” (All Employees)

Purpose

This questionnaire asks for information about yourself and how well the Belize Health Information System (BHIS) is being utilized and whether or not it is an asset to your business. Your company uses this Information System. We would like to measure the effectiveness of this Information System, as well as your ability to use this system efficiently.

Please answer the questions in relation to your company. Your individual responses to the questionnaire will be strictly confidential.

Instructions

This is a survey, not a test; there are no right or wrong answers. Please print in the spaces provided and tick the boxes to mark your answers. Your Survey ID number will be provided.

1. Background Information	Answers:
Please enter your age:	
Please enter amount of computer experience you have in years:	

Please indicate the number of years you have been working:	<input type="checkbox"/> Less than 5 years <input type="checkbox"/> 5~10years <input type="checkbox"/> 10~15 years <input type="checkbox"/>
	<input type="checkbox"/> More than 15 years <input type="checkbox"/>
Please indicate your gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/>
Please indicate highest education level attained:	<input type="checkbox"/> Masters <input type="checkbox"/> Bachelors <input type="checkbox"/> Associates <input type="checkbox"/> <input type="checkbox"/> High school or less <input type="checkbox"/>
Which of the following best describes your position in this company?	<input type="checkbox"/> Manager <input type="checkbox"/> Forman/Supervisor <input type="checkbox"/> Non-Manager <input type="checkbox"/>

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

2. Information Quality	Disagree ----- Agree
IQ1: BHIS (Belize Health Information System) provides information that is exactly what you need	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
IQ2: The BHIS provides information you need at the right time	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
IQ3: The BHIS provides information that is relevant to your job	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
IQ4: The BHIS provides sufficient information	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
IQ5: The BHIS system provides information that is easy to understand.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
IQ6: The BHIS system provides up-to-date information	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

3. System Quality	Disagree ----- Agree
SQ1: BHIS is easy to use.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SQ2: BHIS is user-friendly.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SQ3: BHIS provides high-speed information access.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SQ4: BHIS provides interactive features between users and system.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

4. Complementary Technology Quality	Disagree ----- Agree
CTQ1: The software on the device (desktop computer, laptop, mobile device) used to access the BHIS is adequate.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CTQ2: The device hardware (desktop computer, laptop, mobile device) used to access the BHIS is adequate.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CTQ 3: The speed of the Internet connection used to access the BHIS is adequate.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CTQ 4: The reliability of the Internet connection used to access the BHIS is adequate.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

5. Computer Self-Efficacy Measure	Disagree ----- Agree
I COULD COMPLETE THE JOB USING THE BELIZE HEALTH INFORMATION SYSTEM...	
CSE-1.... if there was no one around to tell me what to do as I go.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

CSE-2.... if I had never used an information system like it before	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-3.... if I had only the BHIS manuals for reference.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-4.... if I had seen someone else using BHIS before trying it myself.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-5.... if I could call someone for help if I got stuck.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-6.... if someone else had helped me get started.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-7.... if I had a lot of time to complete the job for which the BHIS was provided.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-8 if I had just the built-in help facility for assistance.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-9.... if someone showed me how to do it first.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
CSE-10... if I had used similar information systems before this one to do the same job.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
6. Service quality	Disagree ----- Agree
SV1: The support staff keep the BHIS software up to date.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SV2: When users have a problem, the BHIS support staff show a sincere interest in solving it.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SV3: The BHIS support staff respond promptly when users have a problem.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
SV4: The BHIS support staff tell users exactly when services will be performed.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
7. User satisfaction	Disagree ----- Agree
US1: Most of the users bring a positive attitude or evaluation towards the BHIS function.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
US2: You think that the perceived utility about the BHIS is high.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
US3: The BHIS has met your expectations.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
US4: You are satisfied with the BHIS.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
8. Use	Disagree ----- Agree
U1: The frequency of use with the BHIS is high.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
U2: You depend upon the BHIS.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
U3: I was able to complete a task using the BHIS even if there was no one around to tell me what to do as I go.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
U4: I have the knowledge necessary to use the BHIS.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
9. Perceived net benefits	Disagree ----- Agree
NB1: The BHIS helps you improve your job performance.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
NB2: The BHIS helps the organization save cost.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
NB3: The BHIS helps the organization achieve its goal.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
NB4: Using BHIS improves the assessment and training	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
NB5: Using BHIS in job increases my productivity.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

NB6: Overall, using the BHIS 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.