Measuring the Success of Sage 500 ERP at Belize Natural Energy Ltd.

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Abstract

Is the implementation of Sage 500 ERP at Belize Natural Energy helping the organization to develop and work more efficiently? In some organizations, employees lack proper training and knowledge when it comes in implementing a new information system. If they implement a new information system, the company can achieve their goals, make better decisions, and produce the best quality of service to stakeholders. All these factors will be measured based on the knowledge and experience the employees have with the information system. With the Delone & McLean Success Model as our guide, data was collected from the employees in the Procurement, Accounts Payable, Accounts Receivable and the Finance Departments in the form of a quantitative survey. Responses were analyzed and the overall success of the system was measured and interpreted in the context of efficiency and productivity of the system to help to achieve the company's goals. The data shows BNE has had a high degree of success with its system implementation.

***Keywords**: Information System, ERP, Sage 500, Oil and Gas, BNE, Delone-Mclean, Efficiency, Goals, Productivity, measuring, implementing.*

Introduction

Belize Natural Energy Limited was founded on the vision that oil and gas would positively transform Belize its economy. BNE is known as a Belizean company with world-class standards. BNE signed a production sharing agreement with the Government of Belize. In 2005 oil was discovered at Mike Usher No.1 well in the Mennonite agricultural community of Spanish Lookout in Western Belize. Currently BNE produces approximately 2,000 barrels of crude oil per day, 1,800 gallons of Liquefied Petroleum Gas, and 160 thousand cubic feet per day of fuel gas for electricity generation (internal use).

The purpose of this research is to show how Information System (MIS) are used in different organizations. The information system that is used at BNE is known as SAGE 500. It by medium size organizations to increase operational efficiency. The purpose of this is system is for accounting. At BNE, SAGE 500 is used by four departments which are Procurement, Accounts Payable, Accounts Receivable and Finance. The features of SAGE 500 are to accommodate valuable information for each department.

SAGE 500 is a powerful financial tool that helps BNE to confidently manage their company's finances and to make sure it is accurate. Sage 500 ERP has fully integrated functions including financials, distribution, manufacturing, human resources, and customization suite. It also features powerful reporting tools and analytics that are highly customizable. SAGE 500 ERP helps businesses to be successful by presenting valuable and accurate financial information in an understandable format.

Therefore, our group will be analysing how efficient and successful this information system can be for Belize Natural Energy to accomplish their goals. This will be done by conducting a research on why BNE implemented this system and how it is making their operations easier. We will conduct quantitative research by using surveys to gather our information and run them through the Delone & Mclean success model to determine their level of success with the system.

Literature Review

Oil is a vital source of energy for the world and will likely remain so for many decades to come, even under the most optimistic assumptions about the growth in alternative energy sources. The demand for oil and gas is high, so companies are looking for more ways to become efficient, while also meeting industry-specific conditions. Belize Natural Energy Limited (BNE) was founded on the vision that oil and gas would positively transform Belize. Belize Natural Energy has established itself as a Belizean Company with world-class standards. Today Oil is one of the most important raw materials we have. Every day we use hundreds of things that are made from oil or gas. Our research topic is "Measuring Success of Sage 500 ERP at Belize Natural Energy." Sage 500 ERP is a flexible solutions for on-premise deployment. This ERP is built for large industries with focus on manufacturing and distribution but is flexible enough to serve small and medium businesses too. Sage 500 ERP has fully integrated functions including financials, distribution, manufacturing and human resources.

No industry is as unique as the oil and gas industry. Oil companies need an ideal business management solution where it delivers a comprehensive functionality to meet their needs. The sage 500 ERP is an integrated suite of robust business solutions that works to help managers maximize operational efficiency and increase productivity and profitability across

every aspect of their enterprise. These applications feature advanced capabilities that address the daily operational challenges faced while providing the management insights needed to secure the company's successful future. BNE being a mid size business would benefit from this ERP since it increases productivity and it is designed to run the business functions, it also provides insight necessary so the business can achieve their oriented goals.

According to an article "Trican Well Service Hits a Gusher With Sage 500 ERP" it states that 'oil and gas wells require expert maintenance for optimum productivity.' Trican Well Service invested in equipment and operating facilities and with this they enhanced their existing services. Trican began growing remarkably, thus it needed a powerful accounting solution. This article also mentioned the pros that Trican experienced when it established sage 500, "Trican struck oil when it discovered Sage 500 ERP. The end-to-end enterprise solution now handles all of Trican's accounting needs, in addition to providing sophisticated reports and analyses for management." The manager of Trican Mike Baldwin stated that "Sage 500 ERP allowed their finance team to catch up with the growth in their business. Now the company's accounting records are more up to date, capital asset records are more complete, and reports for fixed assets are under construction and significantly more accurate than they were before." The Sage 500 ERP greatly enhances a company's department whether it is management, finance or human resources, it also enables the manager to run the business the way that they want to, with a low cost of ownership and a high return on investment.

BNE is major contributor to the economy of Belize and establishing the sage 500 ERP will not only facilitate the industry but will also improve the oil and gas industry. BNE has long lived with turbulent markets and a challenging regulatory environment. BNE's software supports adaptability, focus and collective insight on issues that are currently trapped in information silos. It also enables leaders in all levels of the organization to view, process and deliver results via real-time snapshots of the entire operation. The sage 500 ERP offers a wide range of solutions that help the industry, these being: Financial Management, Supply Chain Management, Production Management, Enterprise Data Management, and Customer Relationship Management all being Key components to successful business.

A few researches done research on Sage ERP in the oil industry. There are other articles on oil and gas industries using a different ERP but some review/comments are negative about the systems being used.

Theoretical Foundation

Delone and Mclean IS Success Model, an Introduction

The Delone and Mclean Success Model, named after its creators William H. Delone and Ephraim R. Mclean, was published in 1992 after several years of thorough research on existing theoretical and empirical IS research from the 1970s and 80s. The D and M IS model proved to be effective in determining the success of an information system and as a result soared in popularity. As with any material, people always try to improve where they can, and in 2003, a newer version of the D and M IS model was published. The following paragraphs will discuss the differences the updated version of the D and M IS success model, its effectiveness and most importantly, analyse the success of SAGE 500 ERP at Belize Natural Energy Limited using the D and M IS success model.

Original Model 1992

The D and M IS Success Model has six components: System Quality, Information Quality, Use, User Satisfaction, Individual Impact and Organizational Impact.

- System Quality - System quality measures technical success.
- Information Quality - Measures semantic success.
- Use - Measures effectiveness success.
- User Satisfaction - Measures effectiveness success.
- Individual Impact - Measures effectiveness success.
- Organizational Impact - Measures effectiveness success.

Defining Success:

1. Technical success can be defined as the accuracy and efficiency of the communication system that produces information (Shannon and Weaver).
2. Semantic success can be defined as – the success of the information in conveying the intended meaning.
3. The effectiveness success is defined as – the effect of the information on the receiver.

It was later concluded that these six dimensions of success are rather interrelated than independent. For example, when a category such as individual impact failed, it crippled the organizational impact tremendously. An Information system is first created, which has several features that influences information quality. Furthermore, users and managers make use of those features, and can either be satisfied or dissatisfied with the system and its final information products. The use of an information system and its products has a direct impact on the individual user in the conduct of their work. These behaviours in turn impact the organization as a whole. For instance, if an Information System is tedious or the information product produced is unreliable, it can exhaust an employee and in turn they will not be as efficient as they can. They can be slower on the job, and less enthusiastic. This can be detrimental to an organization.

Updated Version of D and M success Model

The updated version of the original D and M success Model is based on the conclusion that all constructs are interrelated. The previous model did not expand on this fact, but scarcely takes into consideration their relationships with each other. In the updated version (Figure 1), various studies concluded that these relationships are very important. To understand all the modifications made and improved definitions of the constructs, below are explanations of the important relationships starting from the most important.

1.) System Use and Individual Impacts – The system use was found to be voluntary and instead was measured as a frequency of use, number of accesses, time of use, dependency and usage pattern. The individual impact however, was measured in terms of job performance and decision making.

2.) System Quality and Individual Impacts – Here the system quality was measured in terms of "ease of use", functionality, reliability, flexibility, data quality, portability, integration and significance (importance). This differs from the original measurement of system quality. It no

longer only focuses only on the technical success. Here the individual impacts were measured in terms of the quality of work environment and job performance.

3.) Information Quality and Individual Impacts – Information quality was measured in terms of accuracy, timeliness, completeness, relevance and consistency. The individual impact was measured as a combination of the above two, job performance, quality of work and lastly decision making.

This understanding can still be applied to the old model. It does go more in depth with other aspects that were generalized in the first model. Nevertheless, the updated model as shown below (figure 1) has added extensions. These are Service Quality and Net Benefits.

Service Quality – Below is the criteria that ensures system quality is optimal.

- IS has up to date hardware and software (tangible)
- IS is dependable (reliable)
- IS employees give prompt service to users (responsiveness)
- IS employees have the knowledge to do their jobs (assurance)
- IS has users best interest at heart (empathy)

Net Benefits – A combination of the last two constructs of the original model. Information Systems no longer only impacts the immediate user but also groups, inter-organizations, the industry, consumer, and society.
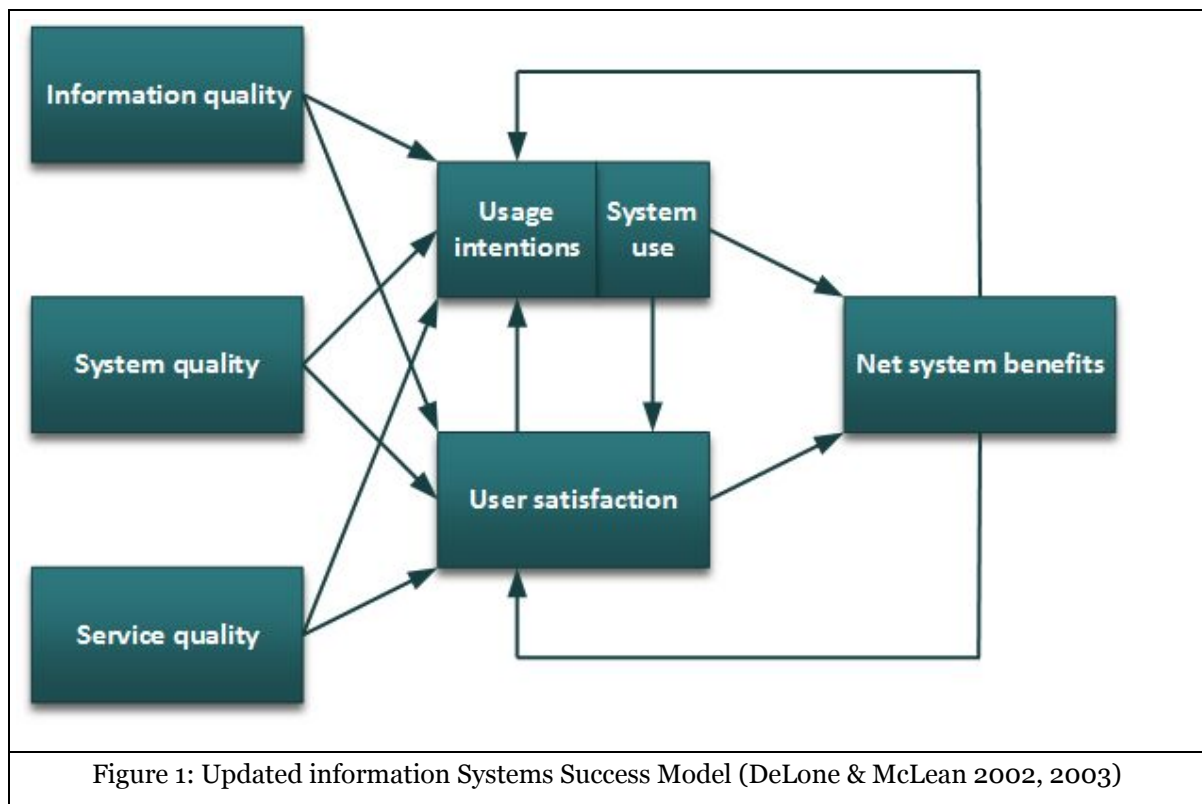

Figure 1: Updated information Systems Success Model (DeLone & McLean 2002, 2003)

Application of Model for SAGE 500 ERP at Belize Natural Energy

       The data analysis goes into further explanation of how they survey revealed if the Information System was successful and beneficial to Belize Natural Energy. The survey questions were created with to reveal how relevant each of the following was.

System Quality · Adaptability · Availability · Reliability · Response Time · Usability	Information Quality · Completeness · Ease of Understanding · Personalization · Relevance · Security	Service Quality · Assurance · Empathy · Responsiveness
Use · Nature of use · Navigation Patterns · Number of site visits · Number of transactions executed	User Satisfaction · Repeat purchases · Repeat Visits · User Surveys	Net Benefits · Cost Savings · Expanded Markets · Incremental Additional Sales · Reduced Search costs · Time Savings
Table 1: Detailed Dimensions of Measurement for Survey Questions		

Methodology

Instrument

       The nature of the research is quantitative. The researchers will seek to determine the impact ERP Sage 500 in the working environment of Belize Natural Energy. The instrument being used to collect data from the targeted population is self-administered questionnaires.

       The questionnaire consists of forty seven (47) close ended questions divided into two (2) sections. Section one consists of five (5) questions used to other demographic information such as: gender, age, education level, years of work experience and description of post. Section two consists of forty two (42) questions subdivided into eight (8) categories of the Sage MAS 500 ERP system which are: information quality about MAS 500, system quality, complementary technology quality of MAS 500, computer self-efficacy measure, service quality, user satisfaction, how often the MAS 500 is used, and perceived net benefits. Each of the sub-divided categories in section two (2) varies in the amount of statement being asked in each category and a Likert Scale that measures the opinions of the respondents by allowing them to express how much they agree and disagree with questions asked. An ordinal scale was used to rank from one (1) to seven (7) as follows: one (1) Disagree and seven (7) Agree. Notably, the neutral option was excluded from this scale in order to prompt respondents to thoroughly contemplate on their

attitude towards each statement instead of simply taking a neutral position so as to complete the questionnaire in less time.
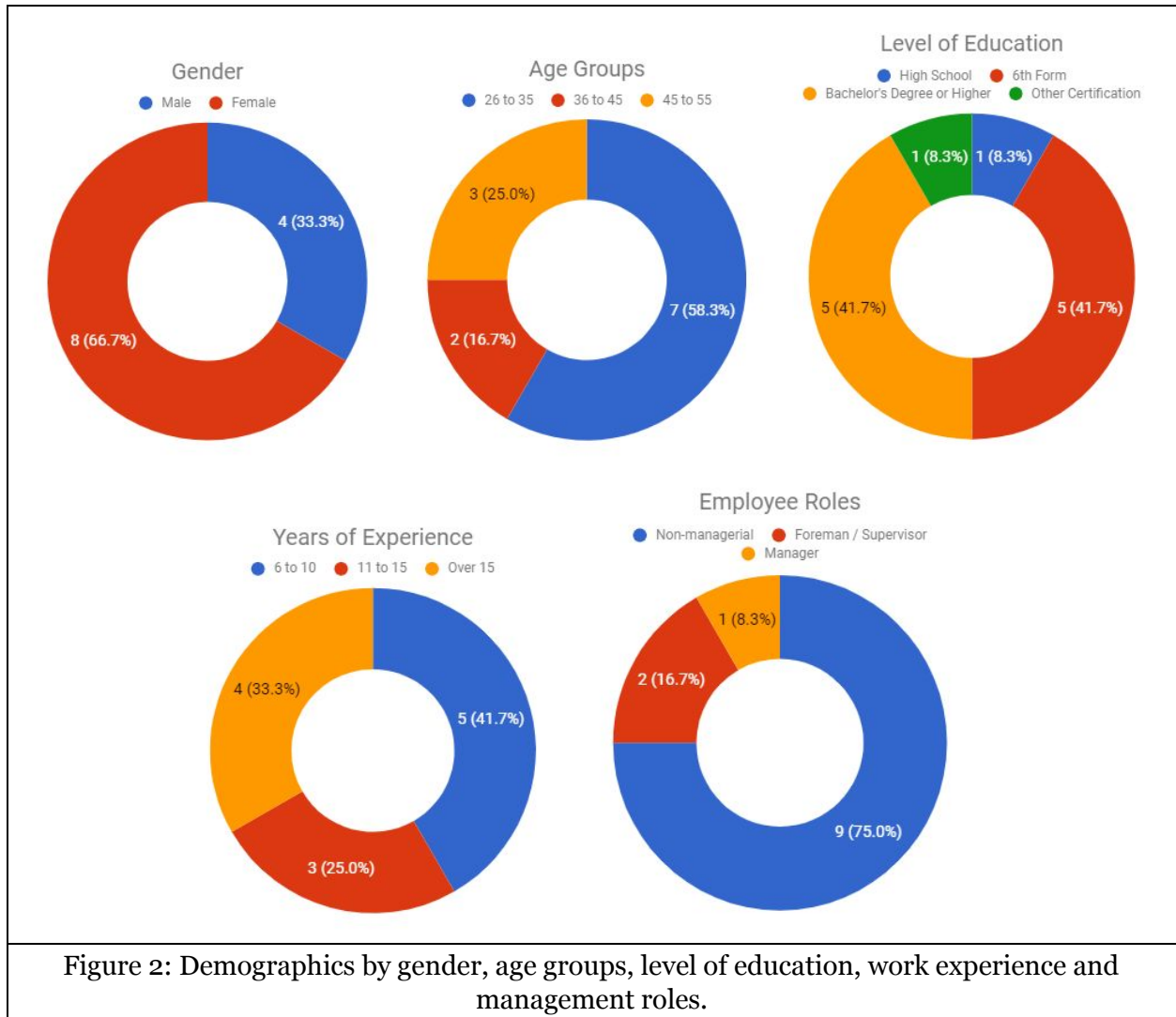
Sampling Procedure

This research utilized the convenience sampling. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher. This sampling method was chosen because of the respondents ease to be reached and decision to freely volunteer in participating in answering the questionnaires. However, it was also chosen because of the limitations that they were not enough participants. To ensure that the respondents understood the questions as intended, the questionnaires were pre-tested by five (5) accountants that were randomly chosen from a private sector. This was done in order to see if there were any corrections needed or ambiguity in the instrument. Based on the feedback from respondents, a few questions were restructured or replaced so as to be more relevant to the research topic. After the pilot test was completed, the researchers directed that the business that would be participating in the study would be Belize Natural Energy, after choosing the organization, the researchers visited the organization and sought permission from managers/supervisors to distribute the questionnaires. Then, a list of all employees who were employed under the relevant departments was being asked by the researchers if they are willing to participate. Using this as a sample frame, convenience sampling was used to select the participants. A brief introduction was given to participants, in which they were informed on the purpose of the research and they were also assured confidentiality and anonymous participation in the study. The researchers then distributed the questionnaires via Google Forms for giving the participants the assurance of anonymity and it was found as an innovative method to introduce.

Procedure for Data Analysis

This research uses only two measurement levels to classify the variables in the instrument. A nominal scale will be used mainly for the demographic variables that contains classifications or descriptions while an ordinal scale will be used for the determining the effect of the Sage MAS 500 ERP (Likert scale). The questionnaires had a eighty percent (80) percent response rate and were all fully completed by participants. All the responses on the questionnaires by the participants were coded and were inputted into the Statistical Package for Social Sciences (SPSS v18) software to be analysed and graphically depicted. Using these results, inferences were drawn to make conclusions.

Population Demographics

Sampling and Data Collection: The data was collected from BNE Sage 500 ERP ssers. These employees are in the Procurement, Warehouse, Accounts Payable, Accounts Receivable and Finance Departments with a total population of 15. All 15 users were asked to fill the questionnaire. Only 12 responded. The following is a summary of the demographics.

Figure 2: Demographics by gender, age groups, level of education, work experience and management roles.

From the donut charts in figure 2, we can see that most employees are females between the ages of 26 to 35 with a 6th form education and higher. The majority of respondents have at least 5 years experience (many of them having BNE as the only place they have worked in) in non-managerial positions.

The survey contained 42 questions divided into 8 sections that measure the critical dimensions of success along which information system are evaluated (Delone Mclean). Statements were made and respondents were asked to agree from 1 (totally disagree), 4 (neutral) and 7 (highly agree) with more levels in between. See appendix for sample questionnaire.

Data Analysis

Questions: 6   Total Responses: 72   Mean: 6.1   Standard Deviation: 0.8

Figure 3: Histogram of Information Quality Responses
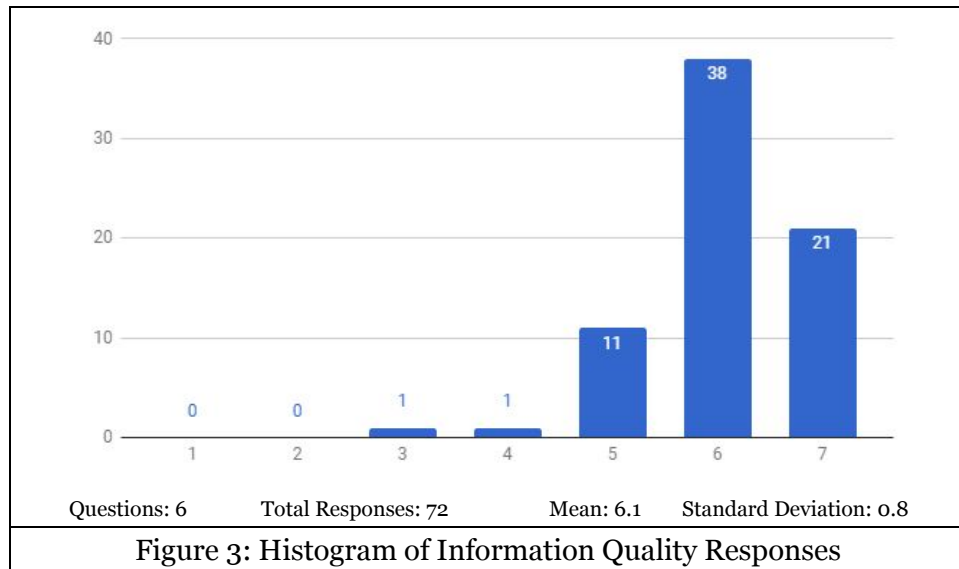
Figure 3 shows the measures of the quality of the information processed by Sage 500. The total 72 responses to the 6 questions of the section with a mean value of 6.1 (agree). This means that most users agree (σ=0.8) that information processed by Sage 500 is relevant to their work, is sufficient and updated, easy to understand and available at the right time.

Questions: 4   Total Responses: 48   Mean: 5.5   Standard Deviation: 1.2

Figure 4: Histogram of System Quality Responses
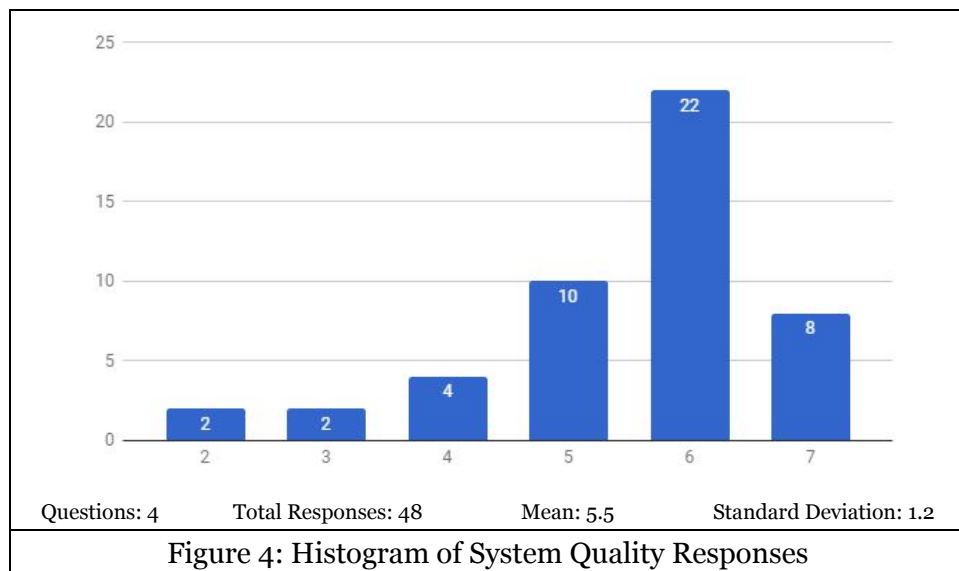
The quality of the application in terms of their user experience is shown in Figure 4. This section has 4 questions with a total response of 48 and a mean value of 5.5 (slightly agree). This mean that only users slightly agree (σ=1.2) the ERP is user friendly, fast and interactive.

Figure 5: Histogram of Complementary Technology Quality Responses
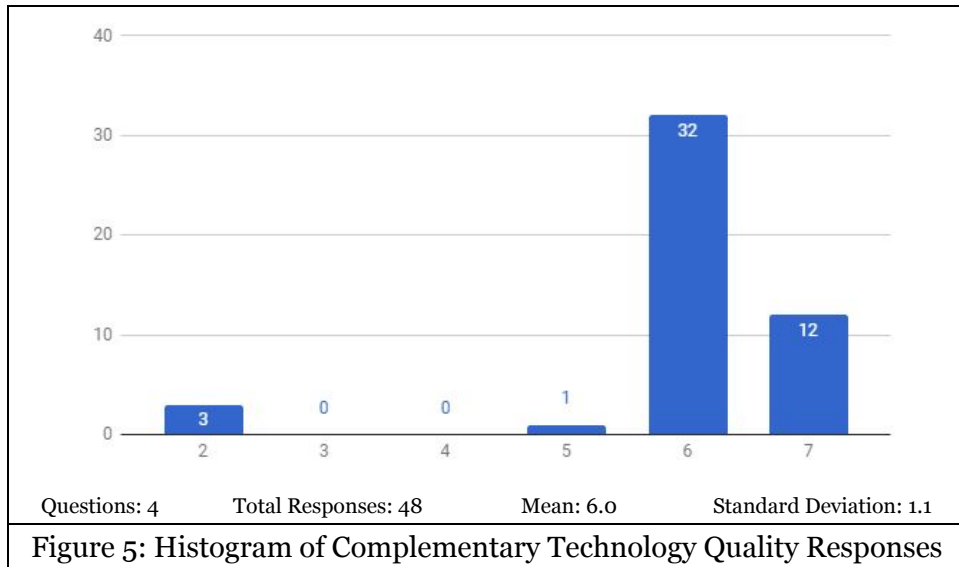
Figure 5 shows measures of quality of complementary assets that go into making the ERP a success. A total of 4 questions yield 48 responses with a mean of 6.0 (high degree of agreement). This means respondents agree (σ=1.1) that the equipment and networks used are adequate for use with the ERP. It is important to note that although we can see from the graph that most responses concentrate around 6, there are some outliers.

Figure 6: Histogram of Computer Self-Efficacy Measure Responses
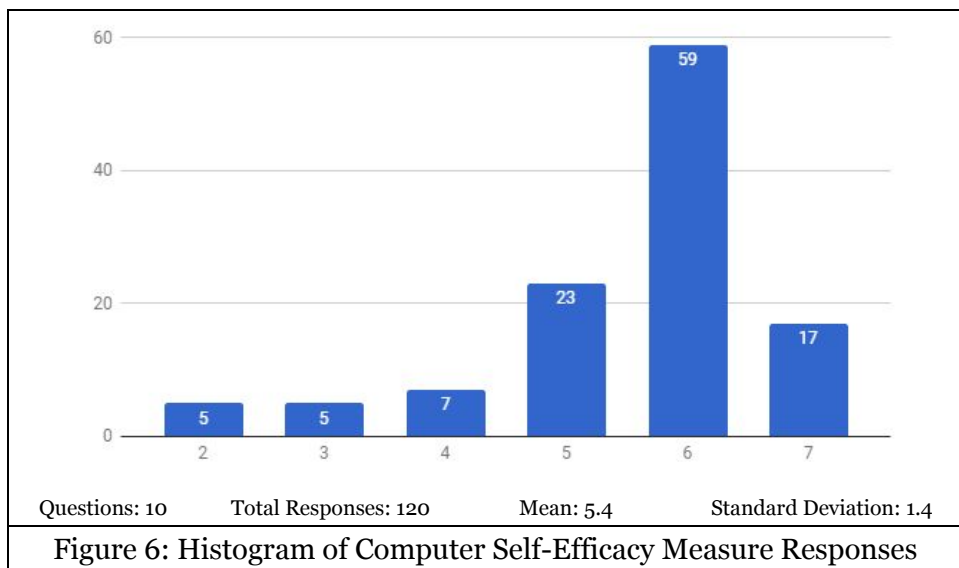
Figure 6 shows responses of how competent with computers the system users perceive themselves. A total of 10 questions yielded 120 individual responses with a mean of 5.4 (slightly agree). It is important to note that of all sections, this one is where responses are most divided (σ=1.4) it also has the lowest mean value. This means that we have a high range of computer literacy and learning skills under various conditions. Some users might not be able to learn from manuals, or at all by themselves.

| Questions: 4 | Total Responses: 48 | Mean: 6.2 | Standard Deviation: 1.0 |

Figure 7: Histogram of Service Quality Responses
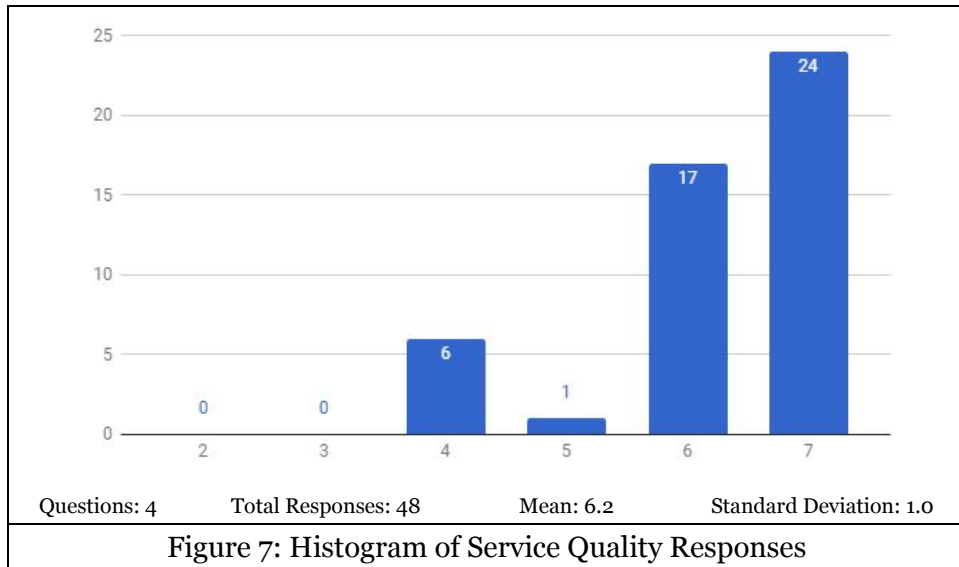
Figure 7 shows responses how well does IT and other maintenance staff take care of the system. The 4 questions yielded 48 responses with the mean of 6.2 (agree), higher than any other section. This means users agree (σ=1.0) that the IT staff keeps software up-to-date and keeps them informed about changes and planned maintenance. They also promptly fix issues and show genuine interest in helping them.

| Questions: 4 | Total Responses: 48 | Mean: 5.8 | Standard Deviation: 0.9 |

Figure 8: Histogram of User Satisfaction Responses
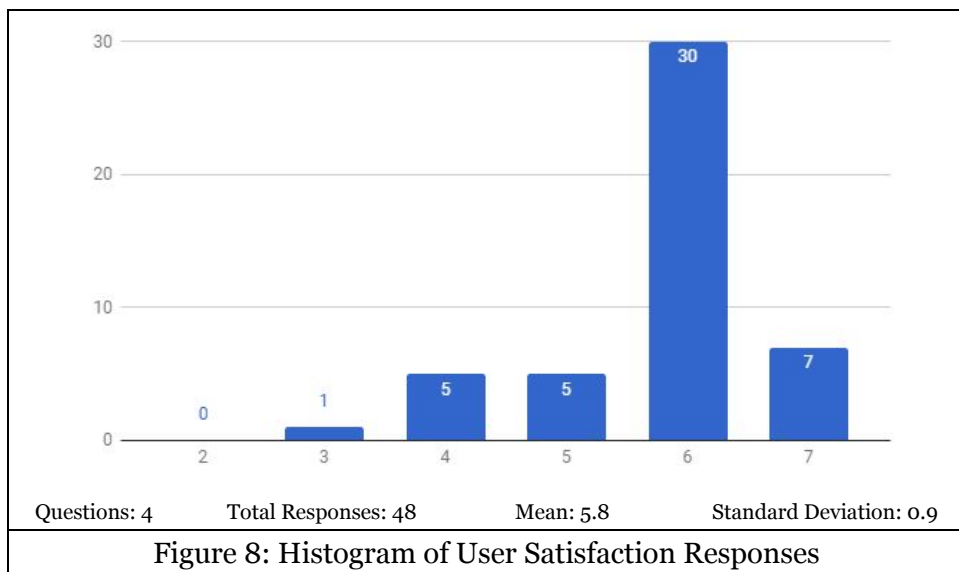
Figure 8 shows responses for user satisfaction with the system. A total of 4 questions yielded 48 individual responses with a mean of 5.8 (agree). This means users agree (σ=0.9) that they have a positive attitude toward the system, they are satisfied with its usefulness and it has met their expectations.

Figure 9: Histogram of Regular Use Responses
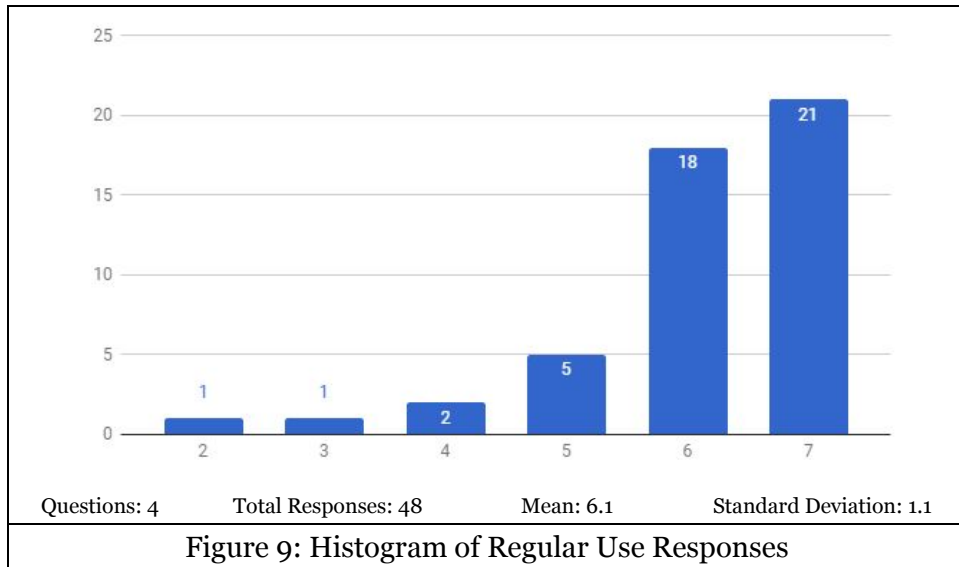
The responses of how regular respondents use the system are shown in figure 9. A total of 4 questions yield 48 responses with a mean of 6.1 (agree). This means that users agree (σ=1.1) that they use the ERP constantly and depend on it. They also claim that they have knowledge necessary to use it although they might not be able to do some tasks on their own.
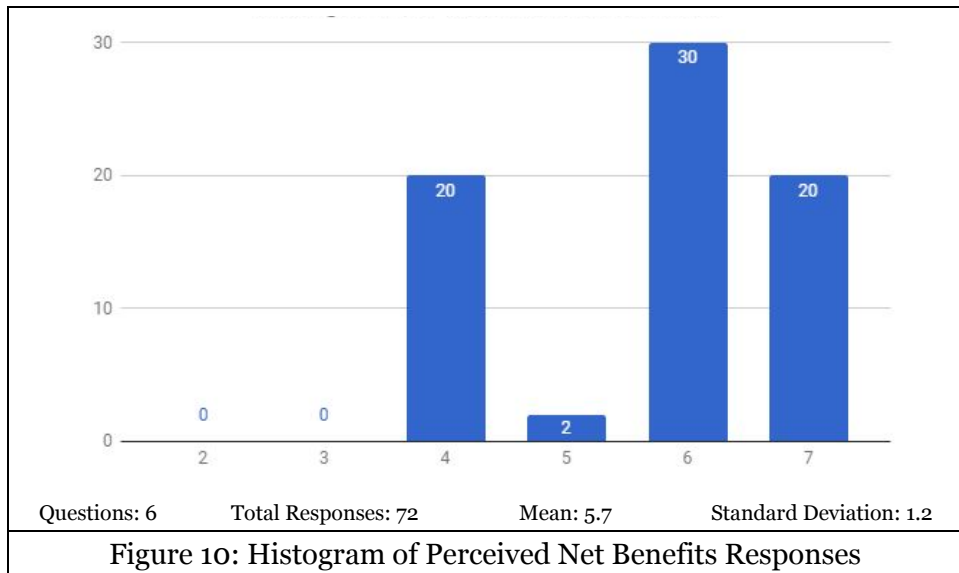

Figure 10: Histogram of Perceived Net Benefits Responses

Figure 10 shows responses for perceived net benefits of the system. A total of 6 questions yielded 72 responses with a mean value of 5.7 (agree). This means that users agree (σ=1.2) that the system helps improve job performance, save costs, achieve goals and increase productivity. It is important to note that this is the only section that had a high number of Neutral responses. This accounts for the slightly higher standard deviation indicating there is some disagreement on the benefits.

Questions: 42   Total Responses: 504   Mean: 5.8   Standard Deviation: 1.2

Figure 11: Response Average by Survey Sections
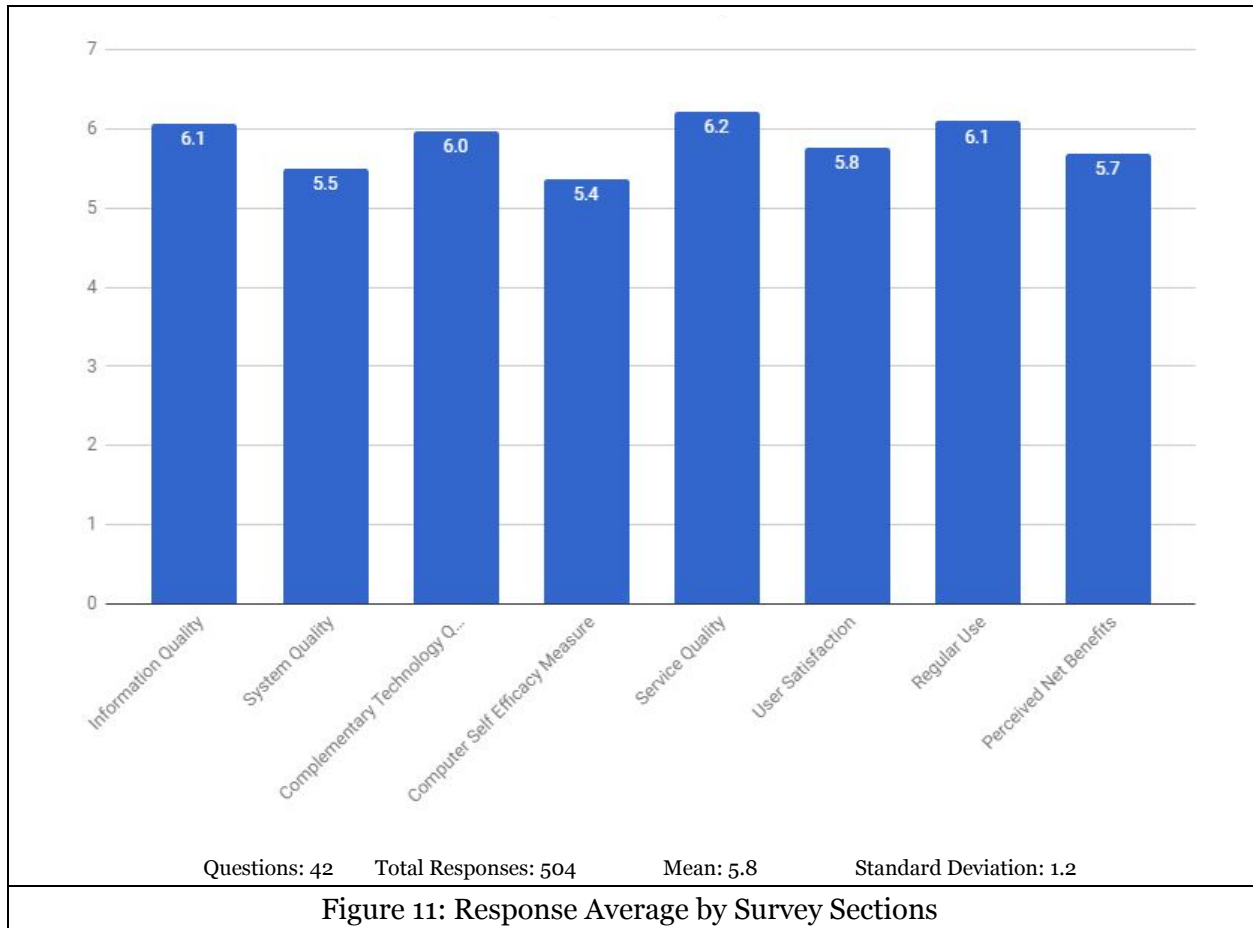
We can see in the histogram of figure 11, the average obtained for each section. Most score a 5 (slightly agree) and a 6 (agree). A total of 42 questions to 12 respondents yielded 504 responses with a mean value of 5.8 (between slightly agree and agree). This indicates that there has been some degree of success in implementing this ERP system. A low standard deviation of 1.2 also indicates that answers are consistent and almost unanimous.

Conclusion

The system has a high degree of information quality. Users agree Sag 500 provides the information users need at the right time. The information is wholesome and current and the high score obtained might be due to the fact that accounting is precision work. In terms of system quality, the interface of the application is not very user-friendly and is one of the poorest performing sections although users admitted it provides high-speed access to information and is interactive . The area of computer self-efficacy was the lowest (5.4/7). This low score could be correlated with users not finding the system user-friendly but more research would be needed to reach this conclusion. The complementary assets such network and computing devices provided are adequate for working with Sage 500. Users almost unanimously agreed that the support staff keeps the system up to date with version updates and patches and that they communicate planned maintenance to users and show genuine interest in getting issues solved. Service quality obtained the highest score in the implementation of the system (6.1/7).

Users are satisfied with the system having met their expectations as is evident by their positive attitudes toward the system. Users agree that Sage 500 improves job performance, and organizational costs, helps achieve goals and increase productivity. It is interesting to note that the overall score of the system (5.8/7) is close to the score (5.7/7) for perceived net benefits alone. By any average measure of success (Technical, Semantic and Effective), the implementation of Sage 500 ERP at Belize Natural energy is a great example of how an ERP system can improve a business.

Limitations

One of the main limitation that we faced was only 12 employees decided to fill out the questionnaire this sample size was very small. Too small a sample may prevent the findings from being extrapolated Small sample size also prevents us from properly estimating and modelling the populations we sample from. As a consequence, small n stops us from answering a fundamental, yet often ignored empirical question: Outlier handling is important for many models, but can be lived with if proportion of outliers is small. This is obviously not the case with small data since even few outliers will form large proportion and significantly alter the mode.

Recommendations

A recommendation for another researcher who will conduct a similar research in this specific field would be advisable to conduct the research with a larger oil Company. This will provide adequate information for the results to be more reliable.

A recommendation for the company would be to invest more training of users to increase the general computer literacy and ERP skills of the users. Another recommendation is to seek customization of the application and involve users in the process to determine what would work better for them.

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Appendix 1: Evaluating the **Success of Sage 500 ERP** at Belize Natural Energy

Purpose: This survey uses the information systems success model by measuring critical dimensions of success along which information systems are evaluated. The system in identified for evaluation is Sage MAS 500 ERP v2014. As a user, you have been selected to give your input about your experience with the system.

Instructions: Please answer the 42 multiple choice survey questions to the best of your ability. All responses are confidential. This is a survey, not a test; there are no right or wrong answers. Please tick the boxes to mark your answers.

Background Information	Options
You Gender	Male ☐ Female ☐
Age Group	< 25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ >55 ☐
Education Level	High School ☐ 6th Form ☐ Bachelor's or Higher ☐ Other Certification ☐
Total Years of Work Experience	< 5 ☐ 6-10 ☐ 11-15 ☐ >15 ☐
Which best describes your post?	Non-managerial ☐ Foreman/Supervisor ☐ Manager ☐

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

Information Quality about MAS500 (1/8)	Disagree Agree
IQ1: It provides information that is exactly what you need	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
IQ2: It provides information you need at the right time	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
IQ3: It provides information that is relevant to your job	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
IQ4: It provides sufficient information	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
IQ5: It provides information that is easy to understand	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
IQ6: It provides up-to-date Information	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

System Quality of MAS500 (2/8)	Disagree Agree
SQ1: It is easy to use.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SQ2: It is user-friendly.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SQ3: It provides high-speed information access.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SQ4: It provides interactive features between users and system.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Complementary Technology Quality of MAS500 (3/8)	Disagree Agree
CTQ1: The software on the desktop computer used for MAS500 is adequate.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CTQ2: The desktop computer used to access MAS500 is adequate.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CTQ3: The speed of the network used to access MAS500 is adequate.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CTQ4: The reliability of the network used to access MAS500 is adequate.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Computer Self-Efficacy Measure (4/8). I could complete the job using MAS500 if...	Disagree Agree
CSE-1 if there was no one around to tell me what to do as I go.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-2 if I had never used an system like it before.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-3 if I had only the manuals for reference.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-4 if I had seen someone else use the system before trying it myself.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

CSE-5 if I could call someone for help if I got stuck.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-6 if someone else had helped me get started.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-7 if l had a lot of time to complete the job for which the system was provided.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-8 if I had just the built-in help facility for assistance.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-9 if someone showed me how to do it first.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
CSE-10 if I had used similar systems before this one to do the same job.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Service Quality (5/8)	Disagree Agree
SV1: The support staff keeps MAS 500 system software up to date.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SV2: the MAS 500 support staff show a sincere interest in solving problems.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SV3: The MAS 500 support staff responds promptly when users have a problem.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
SV4: The MAS 500 support staff announce planned maintenance	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

User Satisfaction (6/8)	Disagree Agree
US1: Most of the users bring a positive attitude towards the system function.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
US2: You think that the perceived utility about MAS500 is high.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
US3: MAS500 has met your expectations.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
US4: You are satisfied with MAS 500.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Regular Use (7/8)	Disagree Agree
U1: The frequency of use with MAS 500 system is high.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
U2: You depend upon MAS500.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
U3: I was able to complete tasks even if there was no one around to guide me.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
U4: I have the knowledge necessary to use MAS500.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Perceived net benefits (8/8)	Disagree Agree
NB1: MAS500 helps you improve your job performance.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
NB2: MAS500 helps the organization save cost.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
NB3: MAS500 helps the organization achieve its goal.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
NB4: MAS500 improves the assessment and training.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
NB5: Using MAS500 in job increases my productivity.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐
NB6: Overall, ERP enhances recruitment and performance management.	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐

Thank you for your participation

Appendix 2: Responses

Demographics					Information Quality						System Quality				Comp Tech Quality				Comp Self Efficacy Measure										Service Quality				User Satisfaction				Regular Use				Perceived Net Benefits					
Gender	Age	Education	Experience	Post	IQ1	IQ2	IQ3	IQ4	IQ5	IQ6	SQ1	SQ2	SQ3	SQ4	CTQ1	CTQ2	CTQ3	CTQ4	CSE1	CSE2	CSE3	CSE4	CSE5	CSE6	CSE7	CSE8	CSE9	CSE10	SV1	SV2	SV3	SV4	US1	US2	US3	US4	U1	U2	U3	U4	NB1	NB2	NB3	NB4	NB5	NB6
Female	26 to 35	Bachelor's Degree or Higher	11 to 15	Foreman / Supervisor	6	6	6	6	6	6	4	5	6	6	6	6	6	6	3	2	4	6	6	6	5	6	6	6	6	6	6	6	6	6	6	7	5	6	6	6	6	6	4
Female	26 to 35	6th Form	6 to 10	Non-managerial	5	6	6	6	6	6	6	6	6	6	6	6	6	6	2	5	6	6	6	6	5	6	6	7	7	7	6	3	6	6	6	6	5	6	7	6	6	6	7
Female	36 to 45	6th Form	Over 15	Non-managerial	6	6	6	6	5	6	4	5	5	3	6	6	6	6	6	6	6	7	7	6	6	6	7	7	7	7	5	6	6	6	6	6	6	6	6	6	6	7
Female	45 to 55	6th Form	Over 15	Foreman / Supervisor	6	6	7	6	6	7	5	5	6	6	7	7	7	7	5	6	6	7	7	6	6	5	7	7	7	7	7	6	6	6	6	5	6	6	6	6	7
Male	26 to 35	Bachelor's Degree or Higher	6 to 10	Non-managerial	7	7	7	6	6	6	6	6	6	6	6	6	7	7	5	4	6	6	6	6	5	6	6	5	7	7	6	6	6	7	6	6	7	6	4	7	6
Female	26 to 35	High School	6 to 10	Non-managerial	6	6	6	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	4	4	4	6	6	6	6	3	6	7	6	6	4	6
Female	26 to 35	6th Form	6 to 10	Non-managerial	6	6	6	6	6	6	6	6	3	6	6	6	6	6	4	6	6	7	6	6	6	5	6	4	4	5	6	6	4	6	6	6	6	5	4	6	6
Female	45 to 55	6th Form	Over 15	Non-managerial	6	5	5	5	6	6	2	2	6	6	6	6	6	2	5	3	6	6	6	6	6	4	6	6	7	6	5	5	6	6	6	6	6	4	4	4	6
Male	26 to 35	6th Form	Over 15	Non-managerial	6	6	6	6	6	6	2	4	4	6	6	6	6	4	1	4	6	6	6	6	4	4	6	6	4	4	4	4	6	7	6	7	7	4	4	6	4
Female	45 to 55	6th Form	Over 15	Non-managerial	6	5	5	4	3	6	2	2	4	5	6	6	2	2	1	1	4	6	7	6	4	4	4	6	4	4	6	6	7	6	6	6	7	4	4	6	6
Male	26 to 35	Bachelor's Degree or Higher	11 to 15	Non-managerial	5	5	6	6	6	6	6	5	5	5	6	6	7	7	2	5	6	6	7	6	7	5	6	6	6	6	6	5	6	6	7	5	2	6	6	4	4
Female	26 to 35	Bachelor's Degree or Higher	6 to 10	Non-managerial	7	5	7	7	7	7	7	7	4	6	6	7	7	7	6	6	6	3	6	7	6	5	7	7	7	7	4	6	6	6	7	7	7	7	7	7	7
Female	36 to 45	6th Form	Over 15	Non-managerial	7	6	6	6	6	6	7	7	6	6	6	7	6	6	6	5	6	6	6	6	5	6	6	5	6	6	6	6	6	7	7	7	6	4	4	6	7
Female	26 to 35	Bachelor's Degree or Higher	11 to 15	Non-managerial	6	6	6	6	6	6	6	5	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6	7	6	6	7	6	6	6	5	7	7	4	4	7	7
Male	45 to 55	Other Certification	Over 15	Manager	7	7	7	7	6	6	6	6	7	6	6	6	6	6	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	6	6	6	6