A study on the success of Abacus at Independence Junior College, Stann Creek

Crystal Peters
Faculty of Management and Social Sciences
University of Belize
2009118293@ubstudents.edu.bz

Simeon Coc
Faculty of Management and Social Sciences
University of Belize
2018118023@ubstudents.edu.bz

Zulma Aguirre
Faculty of Management and Social Sciences
University of Belize
2018118118@ubstudents.edu.bz

Abstract

Measuring and monitoring the success of information systems is important for any administration. Many researchers indicated that user satisfaction, system use and performance are factors of information system success. This research provides an analysis on the adaptation of De Lone and McLean's IS success model in the framework of Abacus JC information system. The model consists of seven dimensions: information quality, system quality, service quality, use, user satisfaction, and perceived net benefit. Abacus JC is a web based system that is used by students to keep up to date with their grades and their class attendance. The research aim is to determine the success level of Abacus system used at Independence Junior College (IJC). Questionnaires were given to 30 participants to determine the net benefit the Abacus student information systems provides to the students at Independence Junior College. This research established results, which should be concentrated in future research.

Keywords: Abacus, Student Information System, Administration, Net Benefit

Introduction

Regardless of whether the economy is flourishing or breaking, organizations want to ensure that their investments in information systems (IS) are successful. Managers make these investments to address a business need or opportunity, so it is important to identify whether the systems meet the organization's goals. There is always a challenge faced by researchers when evaluating the "success" of information systems. The pressure on developing information systems continues to grow, it is necessary to monitor costs and investments that are put into these activities. The managers of information systems of organizations deal with this issue, they must be able to measure the effectiveness of information systems in the company. New conditions which are changing quite rapidly in the turbulent environment of information systems require new methods and applications. Since most organizations today are dependent on their information systems, measuring performance and efficiency in computer science increasingly gains significance.

The purpose of this study is to determine whether students at Independence Junior College believe that Abacus JC is useful and reliable to allow them to monitor their grades as well as ways in which the system can be improved to increase the perceived net benefits to the students attending Independence Junior College. In the working environment the use of Information System has become significant in every business process. Since Information Systems has a measurable impact in the working environment performance, management policies have adjusted to keep up with the growth of these systems. Independence Junior College has also adjusted its policies to help increased student satisfaction. There are several positive aspects to information systems, and it is useful to examine its impact on the efficiency of organization and its productivity.

The main goal of this research is to analyze how efficient and successful this system is and find ways on how to improve it at IJC. A basic research method was used with the development of questionnaires to gather information from the students attending IJC, Stann Creek. The analysis of the data collected is represented via tables, chart and other formats to display our findings.

Literature Review

Information systems (IS) are seen to have the potential to make a significant contribution to the teaching, learning and administration in schools of developing countries. There have been large amount of investment in the introduction of information and communication technology (ICT) in schools, including hardware, software, networking and personnel development. This initiative will be considered worthwhile if there is evidence that it has had a corresponding impact on school performance and efficiency (Condie et al., 2007).

The Abacus student information system incorporated at the Independence Junior College, is one of the many investments on student information systems (SIS). SIS has been developed and designed to introduce a conducive and structured information exchange environment for integrating students, parents, teachers and the administration of a school or college (Learning, 2018). The Abacus is used to keep a count of student-related activities such as keeping records of tests or examinations conducted, attendance, appraisal on performance including details of marks scored, particulars of everyday school detentions and merits, and all other institution-related activities. According to (Bisaso & Visscher, 2005), Information technology (IT) in educational administrations is a fairly new field that not only needs in-depth studies on systems utilization in schools of developing countries but also on their effects on the school processes and maybe outcomes. These studies can better assist schools within developing countries such as Belize to understand the use and need of IS to better engage students, parent and teachers in a long lasting academic journey of success. After conducting a study in Uganda on the use of IS within school administration, (Bisaso & Visscher, 2005) found that almost half of the schools surveyed (38%) declared themselves non-users of IS perpetuating the notion that developing countries like Belize are progressing at a slower pace in regards to the use of Information Systems.

Similarly, Anakwe, et al. (1999) stated that many studies on IS implementation success have been undertaken but few have concentrated on least developed countries. Interestingly, studies found that of the SIS being used across these developing countries, are locally developed either by commercial software vendors, school staff, or individuals with knowledge in computer programming (Bisaso & Visscher, 2005). Abacus is a locally developed SIS created by Maurice Rogers whose vision was to engage activity from students, parents and teachers not only at Independence Junior College but currently serves the same purpose of tracking academic performance to over thirteen other schools within Belize (Rogers, 2018).

Demir (2006) further supports this argument stating that although there are many studies on the role of information systems on class and teaching, few studies have been done on the use of them in educational administration and their effects on the educational management. A review of the literature depicts that despite the constraints on research regarding the use of IS in developing countries, the importance and benefits of IS to society and to future prospects is clear within the educational literature. This research project will therefore attempt to bridge the gap in the literature between the Information System utilization and IS success factors for its use in a university context of developing countries such as Belize.

Methodology

Many Students at the Independence Junior college use Abacus JC to view their performance within the semester to assist them in improving. To collect the data we conducted a stratified sampling amongst the students attending Independence Junior College, whereby we gave out 30 questionnaires randomly within the students of two faculties. We collected the questionnaire the same day we distributed them. With the questions asked, it can help students test and see how well Abacus JC has helped or will be able to assist them more. A sample of the survey using these instruments were based on information quality, system quality, complementary technology quality, computer self efficacy, service quality, user satisfaction, use and the perceived net benefits.

Hypothesis:

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.

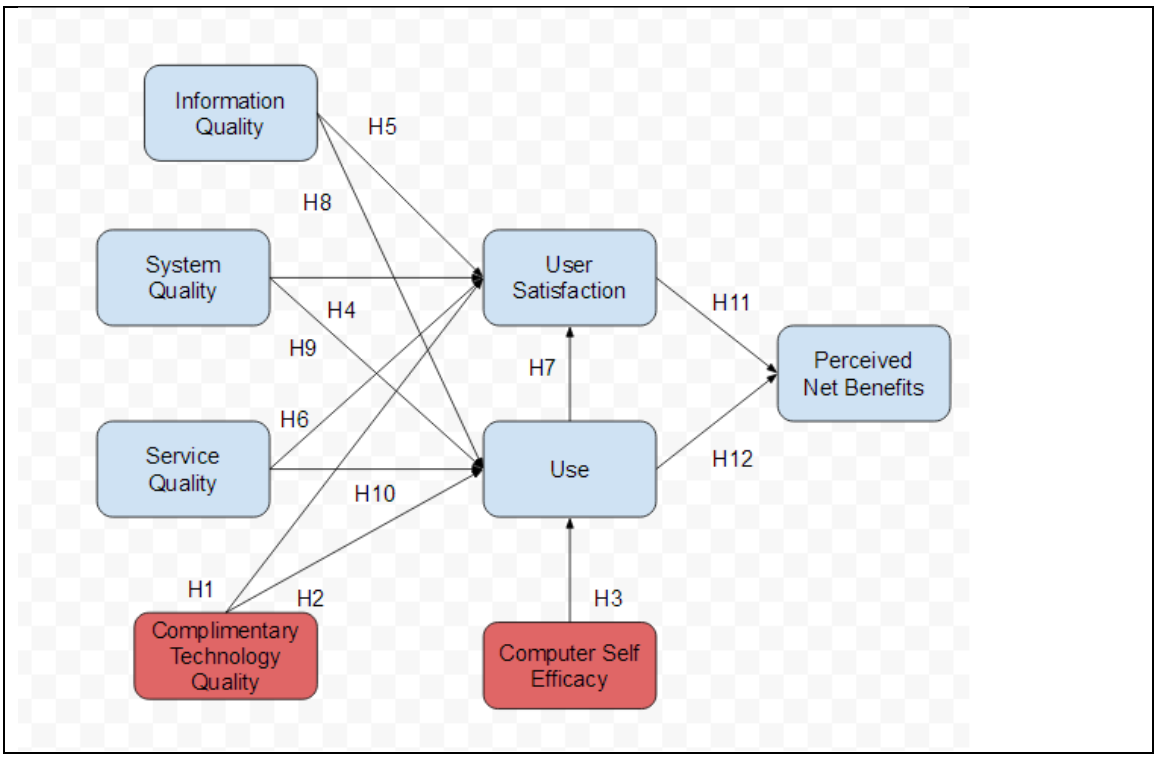


Figure 1: Modified Research Model for Developing Countries

This is a hypothesized relationship between the Abacus JC system and how successful it is using the success dimension, it will only be based on theoretical work reported by DeLone and McLean (2003). As they suggest, the success model needs further development and validation before it could serve as a basis for the selection of appropriate IS measures. According to the study of the hypothesis it showed these eight were tested:

Description of Participants

The participants are students enrolled at the Independence Junior College, they are approximately a little over two hundred (200) students enrolled. Research data will be collected from students enrolled in the Faculty of Business Management and Social Science (ABMGT) and Faculty of Science (AMTH,ABIO).

Sample Size and data collection

To conduct this research, we decided to issue questionnaires to students via a simple random sample method. We issue 30 questionnaires to students from both faculties and was successful at retrieving all 30, thus giving us a 100% response rate.

Construct Measurement

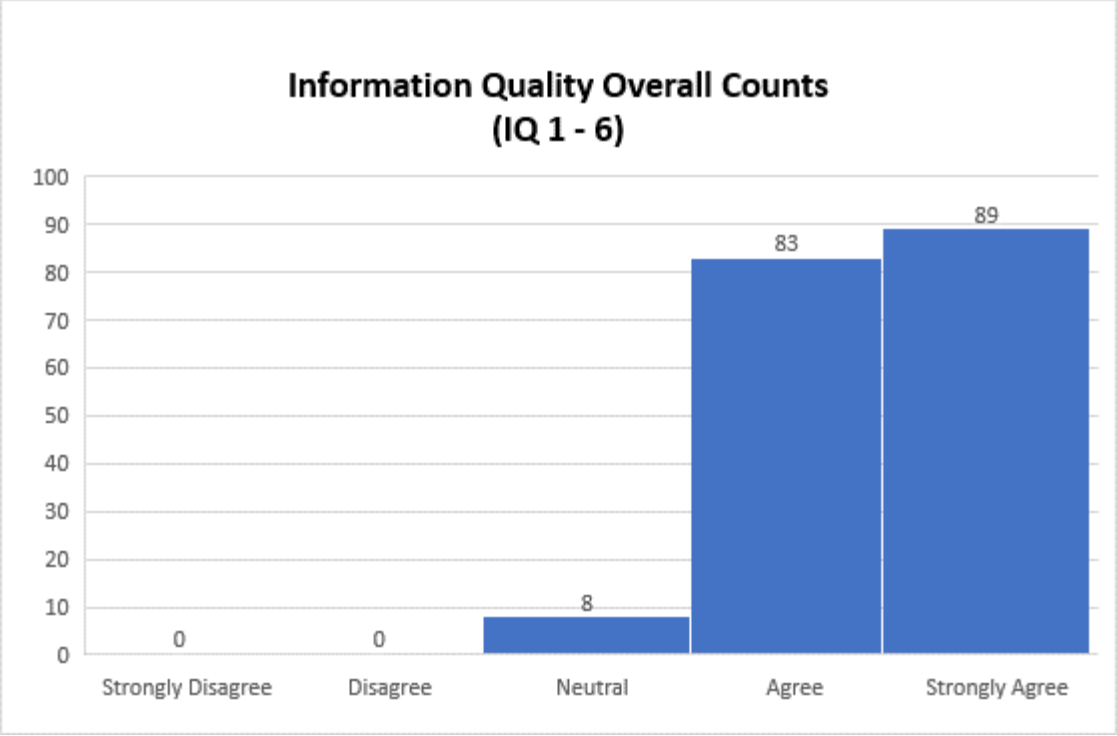
To ensure research validity and reliability, the researcher used the measurement scales for the quantitative data collection of the eight (8) constructs from Bailey and Person (1983), which was modified to the context of Abacus JC. All the items were measured using a 7-point Likert Scale with anchors ranging from strongly agree (7) to strongly disagree (1). As seen in appendix A. All survey questions in the instruments have been validated in previous studies. Thus, the study focuses on the Independence Junior College students by using the seven IS successes which are: service quality, complementary quality, system quality, system use, perceived net benefits, user satisfaction and information quality.

Characteristics	**Amount**	**Percentage**
Gender		
Male	16	53%
Female	14	47%
Age		
Less Than 16	0	0%
From 17	5	17%
From 18 to 20	10	33%
From 21 to 25	15	50%
Education		
Associates	30	100%

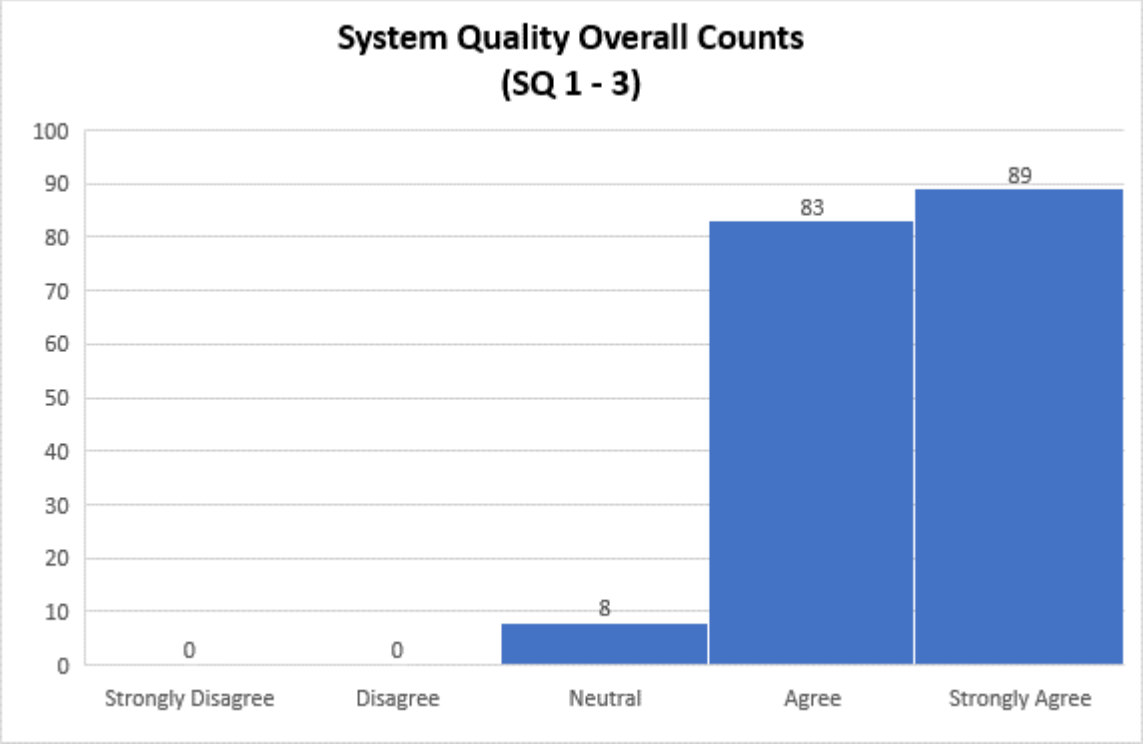
Computer experience		
Less than 1 year	0	0%
1 to 2 years	2	7%
3 years	3	10%
More than 3 years	25	83%

Data Analysis and Results

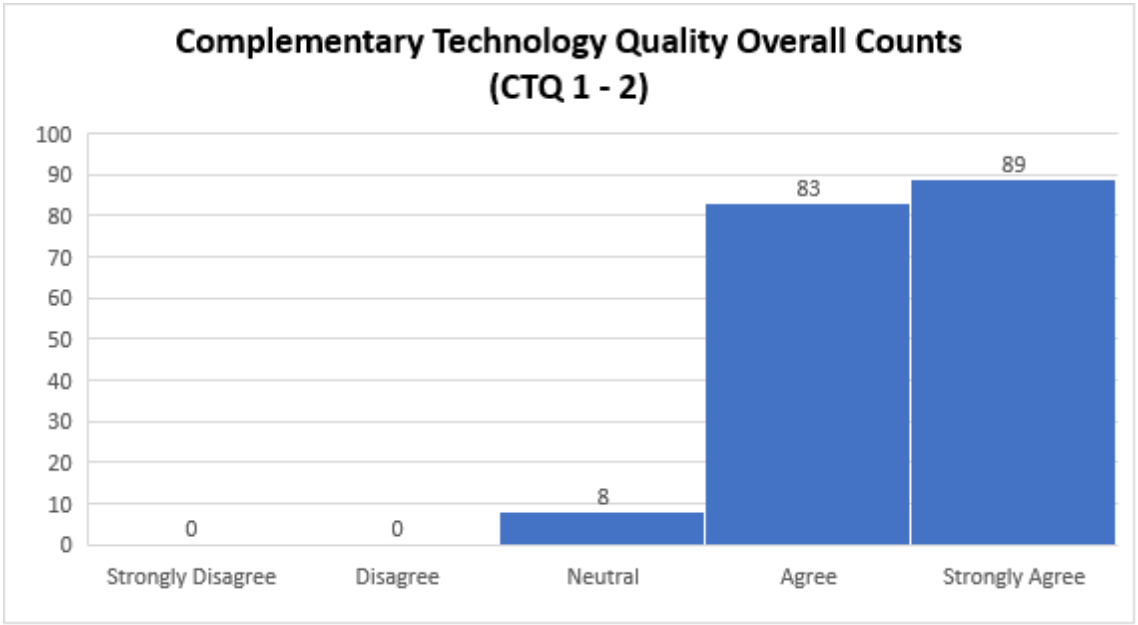
The data was gathered from 30 students of Independence Junior College. We did not assess the Model, nor did we test the hypothesis. Therefore, we are using the applied research methodology. We will present 8 histograms and an average of the histograms. The responses vary from 1 which is strongly disagree to 5 which is strongly agree.



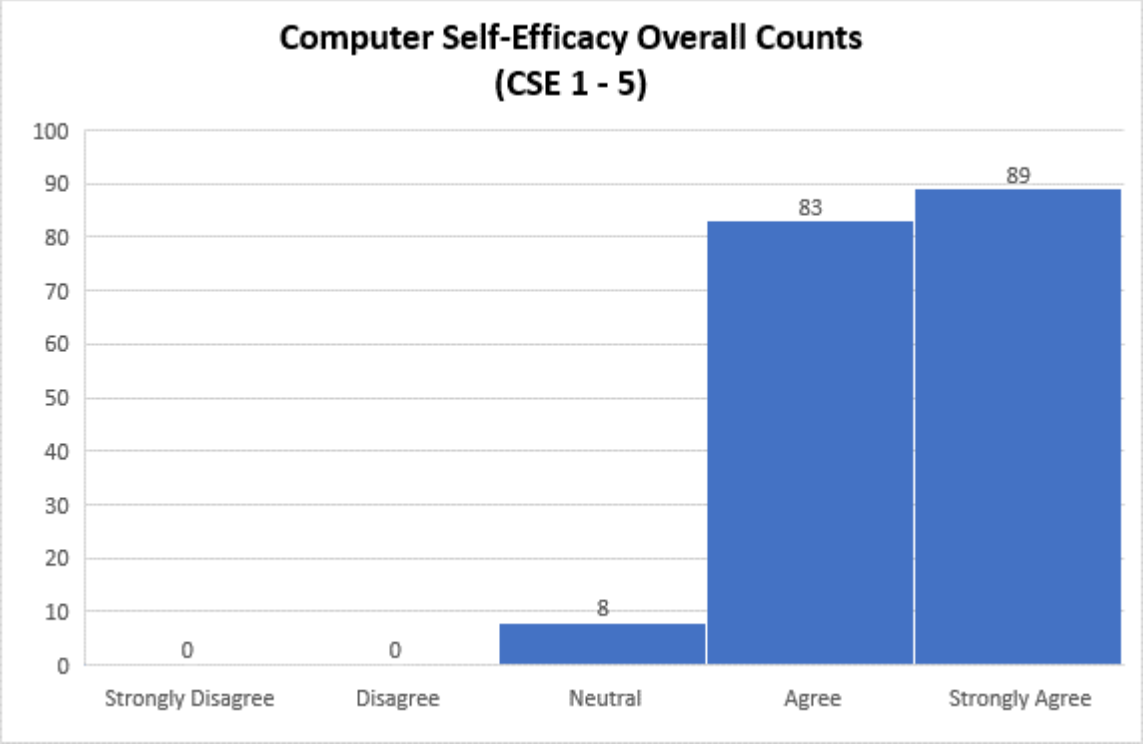
Based on the graph above, it is evident that the service quality of Abacus JC is up to par. The majority of respondents are in strong agreement that Abacus JC service has improved a lot with only a few respondents disagreeing. Overall, users satisfies their needs as an online communication tool.



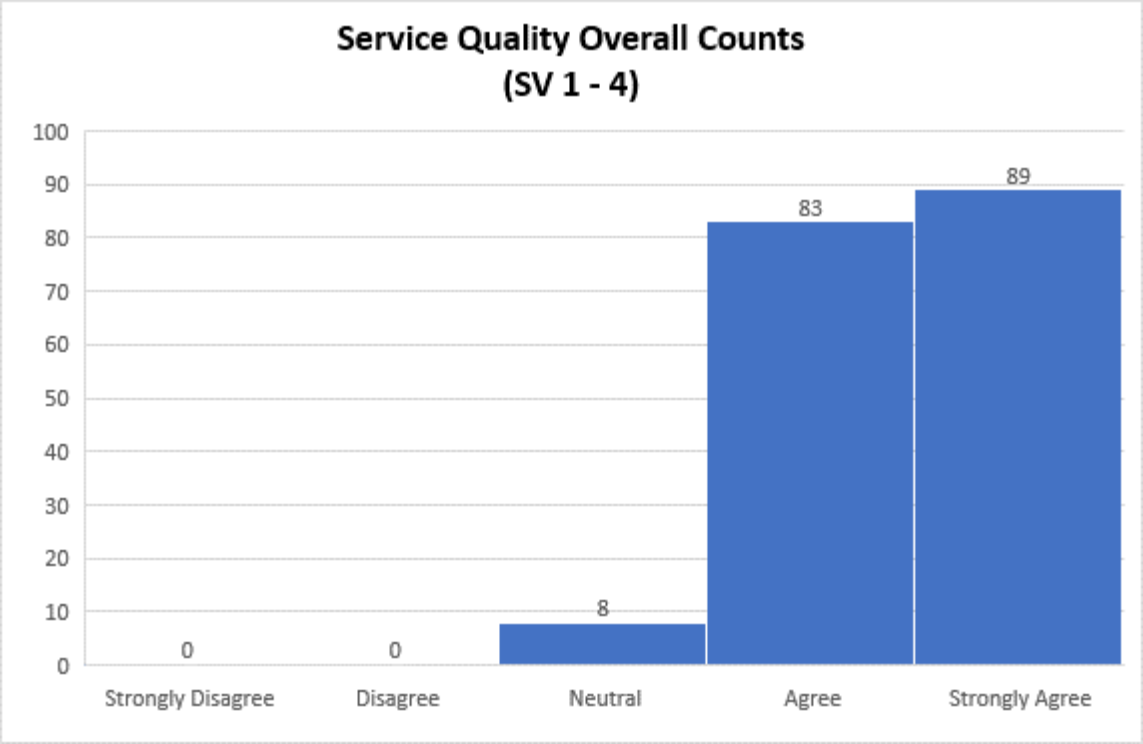
Most users agreed that the system quality of Abacus JC is great. Users also agree that Abacus JC lacks additional features. Moreover, users agree that Abacus JC provides sufficient information and is user friendly.



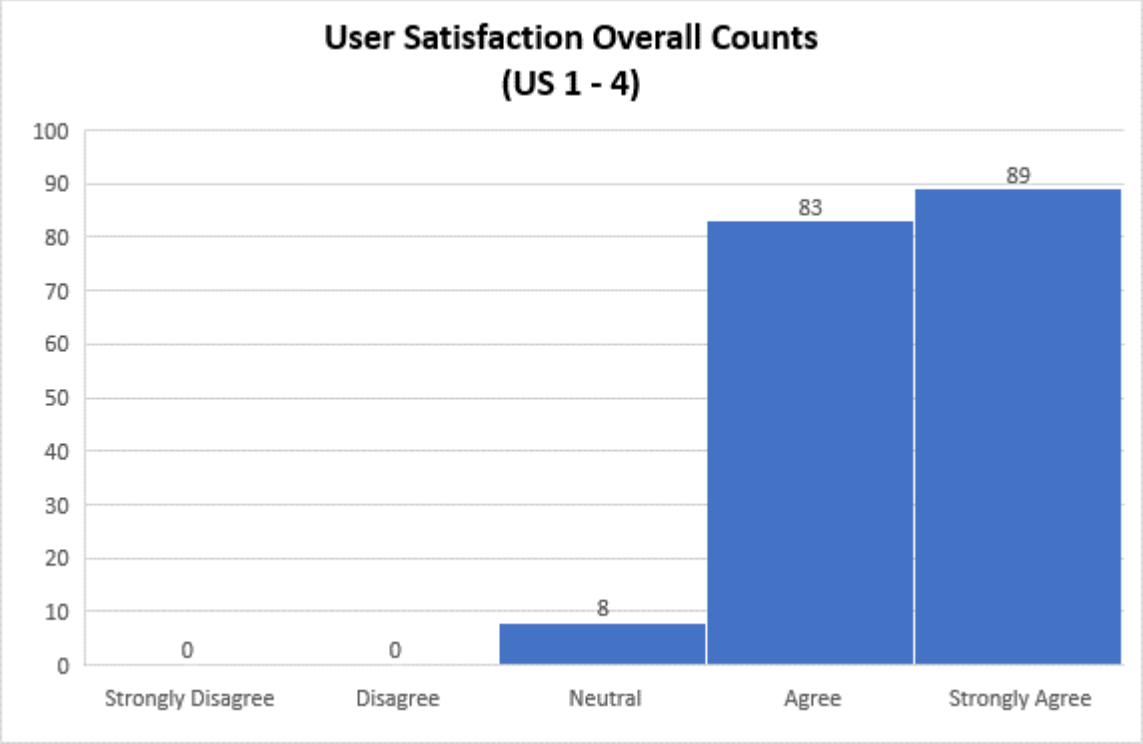
The score count for the complementary technology quality has a wide variance, however most users agree that the quality is average. Users agree that the complementary technology needs improvement especially in areas such as reliability and speed in accessing Abacus JC.



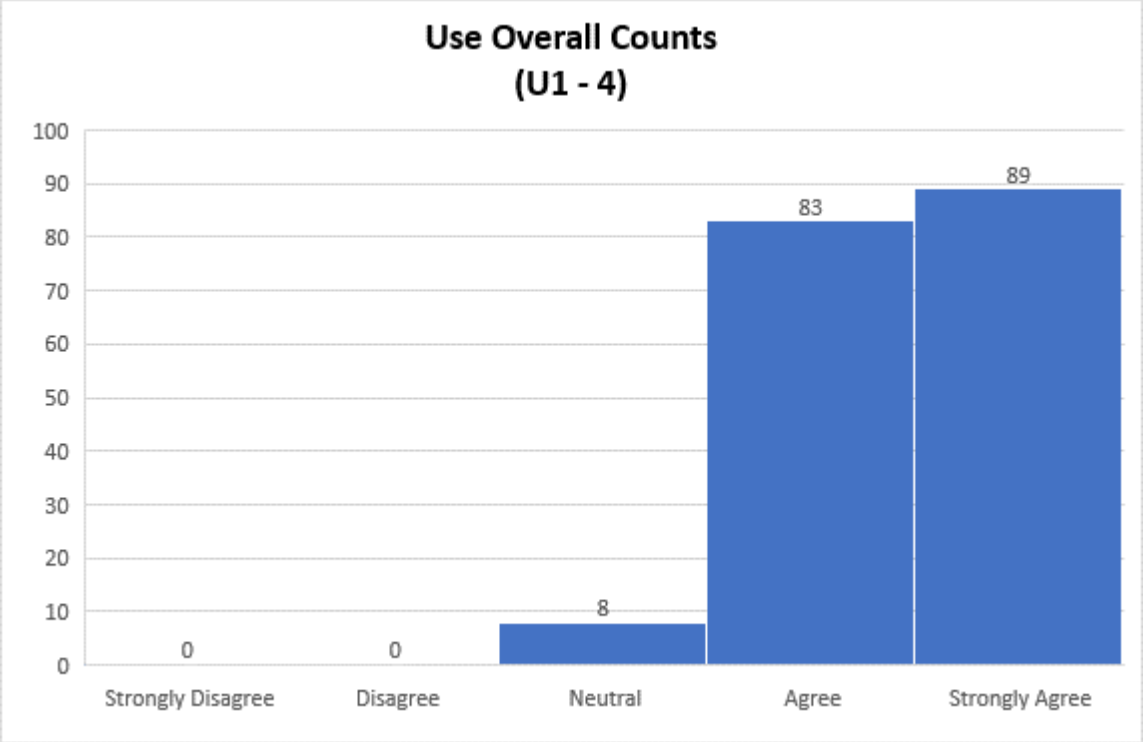
Users agrees that if they need assistance with Abacus JC, they were able to seek from accessible support staff. Also, users believe that they would perform better if there were properly trained to use the software from the beginning. Overall, users agreed that Abacus JC needs to provide support to better assist them.



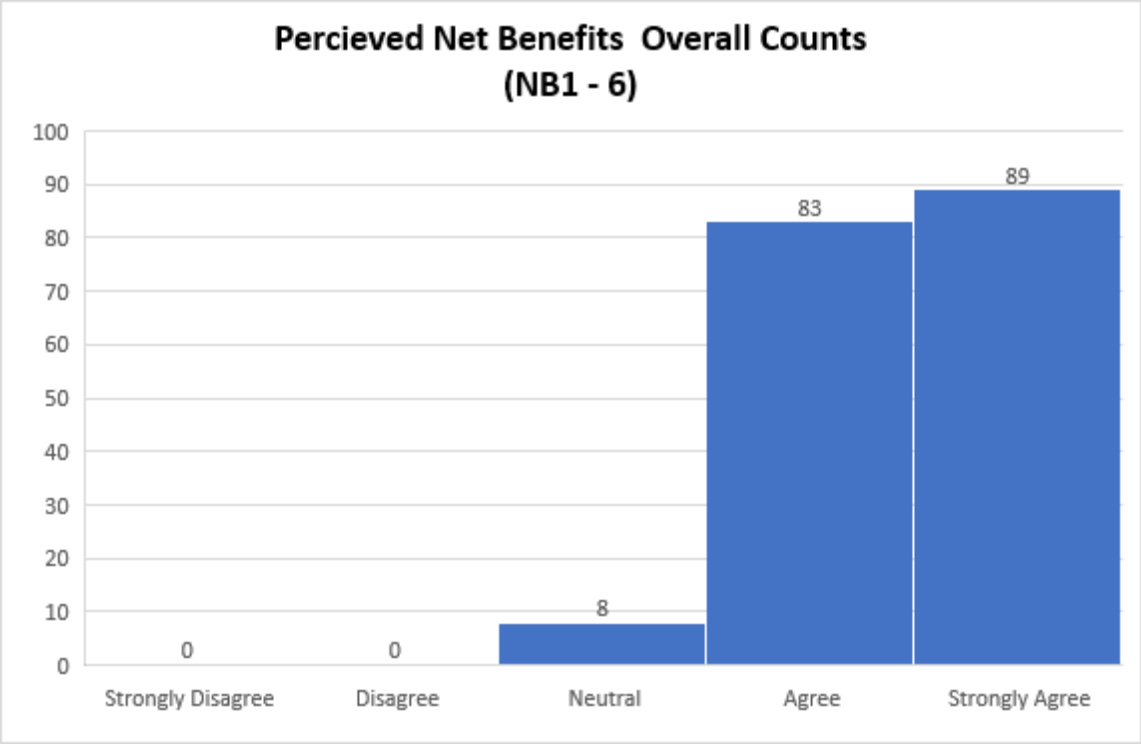
Based on the service quality graph, it is evident that Abacus JC has a good service quality. The majority of users agreed that it needs improvement and only a few users disagree which makes it almost excellent.



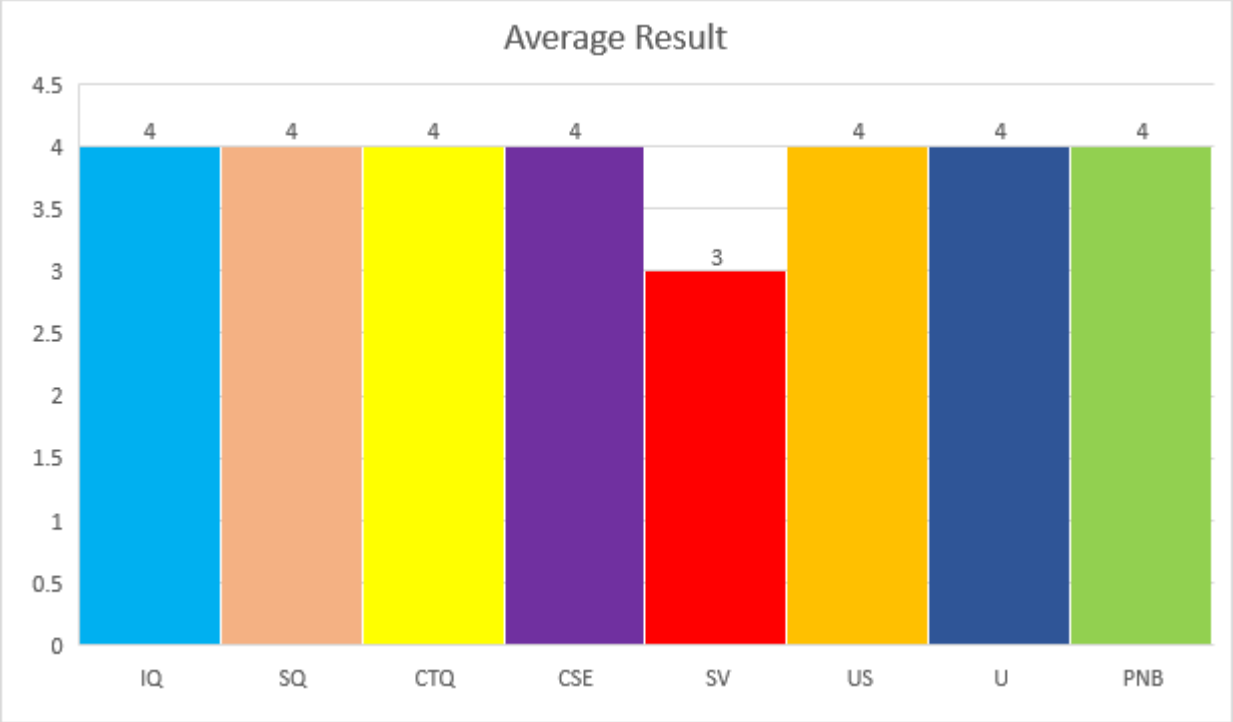
The satisfaction rate with Abacus JC is very high. The majority of respondents revealed that Abacus JC meet their expectations and only few disagree with using Abacus JC.



The chart above displays a high use of Abacus JC. In addition, the majority of respondents strongly agree that they have high dependency for Abacus JC. Also users seem to be able to complete their task on Abacus JC without assistance.



Respondents strongly agree that Abacus JC helps the organization achieves its goal. However, very few find it neutral that Abacus has helped with academic performance as well as helping IJC to be efficient and effective. Majority of the respondents strongly agree that Abacus JC has assisted them in increasing their academics performance and productivity.



This chart represents all the participants of the survey responses and its averages.It also represents the results of the data collected. All the responses were neutral, except for service quality which was little below average. This is said that most students believe the perceived net benefits of Abacus JC is helpful in many cases. The information quality was strongly agreed, and all respondents were satisfied with the service the IS offers. The system quality was rated by most participants as strongly agreed. The complementary technology quality is said to be good and it would mean that many students believe that the internet connection were reliable at times. The service quality can be said to be constant by the respondents, this means that most of the time students found Abacus JC to be effective when solving a problem. User satisfaction and the perceived net benefits is said to be strongly agree by the respondents.

Conclusion and Recommendation

The main purpose of this research was to ascertain if the student information system for Independence Junior College lead to user satisfaction and in what ways could the system be improved. A Sample of 30 Students from the Independence Junior College was surveyed. The main findings of this study was that the system being used helps students improve their grades and it made information easier to access, kept information confidential and also every user had their own personal security to access their information. However, many of the respondents stated that the system needed improvement with consistency and being able to learn how to use the system quickly and effectively. Based on remarks from students, it is believed that most students will be able to increase their school progress if the system is updated with information and speed.

Furthermore, this research contributes to the testing of the Abacus JC IS Success Model. By using an established IS theory, our study is an attempt to apply severe research to a practical, highly relevant problem. In order to increase user perceived net benefit, the Independence Junior College must update their information system with better information quality, system quality, and service quality, which, in turn, will increase user system usage and satisfaction evaluation, and the corresponding perceived net benefit.

Limitations

Limitations for this research includes limited resources, we did not have authority to use the system and view how it works to see how improvement can be done. Another limitation is the fact that the samples gathered may not represent the entire population of the students. Lastly, the location of Independence Junior College was out of reach and researcher found it challenging to distribute and collect the questionnaires.

Despite these limitations, the present study provides valuable insights into the study, it provided a structure for understanding the Abacus JC and its quality on user satisfaction, and perceived net benefit. This provides a foundation for future research. For future research we recommend researchers to test the hypothesis and include a greater portion of the population.

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