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# Impact of the Information Systems Service Quality on Performance of IT Sector Organizations in Sri Lanka

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***Abstract* — *The Information Systems (IS) function now includes a significant service component and it is not just a computer – based solution. However, commonly used measures of service effectiveness have focused on the manufacturing industry and IT industry has not been much focused so far. In local context, neither IS service quality nor functionality is highly focused and critically evaluated. Many instruments have developed such as SERVQUAL which had been used to measure the IS service quality in the marketing field can offer as possible measures of IS service quality.***

***Purpose of this research is to identify the relationship between IS service quality and perceived performance of Sri Lankan IT organizations.***

***The factors affecting IS service quality and perceived performance were identified from literature and the hypothetical model was developed. Research was conducted quantitatively in selected 5 IT companies. The data was analysed using Partial Least Square technique.***

***A strong relationship was revealed between IS service quality and perceived performance of the organizations and safe use, interaction, accuracy and functional coverage were the most impactful factors for IS service quality which drives the organizations' performance with financial viability, motivation and capacity.***

*Keywords*— **Information Systems service Quality, IT industry, Organization's performance**

## I. INTRODUCTION

Information Systems (IS) are being widely used in many organizations in different aspects. In other words, there are IS that range from hedonic; developed for pleasure and enjoyment, to utilitarian; developed to improve individual and organizational performance [9]. Organizations focus on developing, using, and evaluating utilitarian IS [24]. Many investments have been done to implement different ISs as it supports to increase the demand of the organization's quality and performance. Quality of an organization has been defined by [5] in terms of quality as excellence, quality as value, quality as conformity to specifications and quality as meeting customer expectations. Excellence in IS quality involves using state-of-the-art technology, following industry "best practice" software standards and delivering "error-free" performance [17]. The value of IS can be realized by improving profit margins for firm, providing easy-to-use and useful applications and designing easily maintainable software [17]. It is imperative that there is a relationship between IS service quality and performance of the organizations. However, literature stated that, although huge investments have been done on IS, the expected outcome of achieving higher organizational performance has not yet derived [6]. Therefore, investing on IS without measuring the service quality or the utilization, is a risky investment.

In the current business environment, when the development of new technologies combines with the toughening of competition, the investments made by companies in the field of IS experience an extremely significant growth. Consequently, an effective and efficient management of IS proves to be essential for companies. Mastering IS and understanding their impacts have become strategic stakes for organizations who must henceforth assure themselves of the performance of the IS that they use. If the evaluation of the performance of IS is a necessity for the managers, it also appears as a central problem in IS research [13].

In order to make sure the IS are performing as expected by helping to achieve the objectives of the company, the quality of the service which it delivers should be measured. As it provides information required by the managers at different levels to perform their managerial functions effectively and efficiently. IS is an essential computer based system for a company.

Performance of organizations cannot be directly measured along with the IS service quality. Specially, an IT company use IS and technologies in developing software applications for their customers. IS which are used by an IT company play a major role in converting the customer requirements to the end product. Therefore, the perceived value from these ISs can be measured [24]. Perceived performances almost reveal the performance of the organizations as shown in other studies [23]

The objective of this research is to measure the impact of IS service quality on the performance of the organizations in the IT sector in Sri Lanka. Generally, the functions of an IT company are doing business, development, testing, project management, support, documentation and etc. [10]. From the point of taking the customer requirements to the point of delivering the final product, many responsibilities should be fulfilled by a software development company. The company should make sure that they have the relevant technology and relevant information systems in order to perform well in the industry.

Different multidimensional instruments have been evaluated where some are well accepted and some are not. But all in all accepting doesn't mean that it can be used everywhere in every country with various social and cultural aspects. Sri Lanka, a country with a different social and cultural background, without being doing any specific researches addressing this issue, it is difficult to verify the applicability of the above said models. So this made the motivation to find what are the quality measurements which affect on the quality of the IS service and the link between the IS service quality and the organizations' performance from the point of perceived value. Perceived value is taken because, information quality is often not distinguished as a unique construct but is measured as a component of user satisfaction [3].

Identifying the relationship between these two factors will further lead the organizations to get more benefits as follows in different aspects.

From organizations point of view this will support the management to identify, the laggings which affect achieving the competitive advantage and the way IT companies can be up-to-date from technology and from ISs perspectives how to add value over the competitors. Organization is an entity where

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an interaction takes place between information systems / technology and organizational actors. These interactions are complex [13]. Therefore, organizations can be benefited, only if interactions are well identified.

With the mentioned background information, the researcher has continued the upcoming sections as per the following description. Description about the main points of the literature survey which support to have a recap on what earlier researchers have done on IS service quality, what are the measurements they have used, how the performance have been measured and how that knowledge can be used as a guide to this study is presented under the topic Related Work. Methods which used to analyse the data is presented on the methodology section and the analysed resulted is discussed under the results section. After the analysis, the finalized results, recommendation to organizations are discussed.

## II. RELATED WORK

Watson, R.T., Kavan, C.B. and Pitt, L.F. [20] have mentioned that the commonly used measures of IS effectiveness focus on products rather than services or software. Also the current IS success measures product and system quality, from the tangible end of the spectrum and they are strongly manufacturing product focused. According to Watson et. al., measuring Information System effectiveness in an IT company is critical and a complex concept that offers both conceptual challenges as well as implementation difficulties. Their paper pointed out that there is still a need to measure the quality of the IS in IT sector. It discussed more about the existing arguments related to measuring the IS quality on this sector.

The same paper further describes about the problem which can occur if the customer requirement is not correctly addressed. Because most of the IT related firms come up with IT solutions such as different applications, software solutions and if the firms are unable to deliver what they promised to the customer, it creates a negative effect. ISs which are maintained in the companies can create a major effect on this.

The paper by Pather and Usabuwera [23] discussed about the service quality in an online environment and stated that there is a need to identify suitable determinants of e-service quality. It further discussed about the need of measuring the quality of IS as the indicator of problems, strengths and weaknesses. Moreover, this paper has highlighted, though organizations do large investment on IS applications and e-commerce applications, they are very hard pressed to evaluate the success of the system. Therefore, the need of evaluating the quality of ISs is supported by this paper as well.

When the IS arc standardized, well maintained and qualified, organizations performance are affected in a positive way. As described at the introduction, measuring IS service quality will lead the management to make required decisions such as process changes [13]. Aurelie [13] further describes on how a company can gain the competitive advantage through quality ISs.

Watson, Pitt and Kavan [19] have shown descriptively why IS service quality need to be measured and also how IS can potentially increase client productivity in a number of ways. They further stated that clients' performance should not be hindered by unreliable, unresponsive IS. Upgrading IS service can be an effective mean of adding value to clients' activities and organizational productivity. How IS can add value by enhancing the service quality is also discussed. All these discussions, arguments are directed to one focus, which shows the need of measuring the IS service quality.

The same argument is supported by Watson, Pitt, Cunningham and Nel [21], by showing the gap which exists in IS terms due to requirements mismatch and misunderstanding of what user really needs. Following are the gaps which were identified by them.

- Gap 1 results from the misunderstanding by IS of what clients want
- Gap 2 arises when IS does not establish appropriate service standards
- Gap 3 is the distance between established service quality standards and what IS actually delivers
- Gap 4 occurs when IS creates expectations beyond what it actually delivers

IS is not just a computer system and it is beyond that. ISs can contribute to improve the organization's productivity which ultimately supports to increase the performance of the organizations, if the above said gaps are removed. Therefore, IS units need to be examined in a way that the quality can be increased and to give a better service to clients and consequently to the organization.

Considering organization's performance along with the IS service quality is controversial because there are many other factors affecting the performance as describe in section I. This is also supported by Petter, S., Delone, W. and McLean, E. [24] in their research by presenting comparisons of the IS success constructs and how each affect the organization's performance.

As mentioned previously, there are many factors that affect the performance of organizations. When an organization performs well, it is difficult to say it is solely because of the investments which have been done to implement IS or it is because of the quality of the ISs or whatever. Each factor affects up to some extent only. The idea of a direct and mechanical link between investments in IS and the performance of the organization has consequently been rejected [13]. The relationship differs according to the factors considered. It is argued that an understanding of these relationships is essential to effective management by [22].

Yoon and Guimaraes [29] have described some other measures of service quality of ISs and performances of organizations including skills, experience, and capabilities of the support staff.

With the growing popularity of outsourcing for systems development and support, service quality often involves an external provider. Gefen argue that responsiveness of the vendor affects the perception of how 'cooperative' that vendor will be and suggests that outsourcing should be added as a new factor which affects the performance of an IS [7].

Many studies have tried to identify the factors or the courses of action that positively contribute to system performance or the probability of successful implementation. Factors that influence the performance of an IS is user involvement in development and user training and education which have mentioned by Montazemi [2] on his paper, top management support is added as another factor by Cerullo [16] and other organizational contexts such as size, task characteristics were described by Ghani [11].These studies have found the direct effects of these influence factors on the successful implementation and performance of IS. The results of the studies, however, have been inconclusive and contradictory.

Ives, Olson and Baroudi [3] have further described in their study that performance is not directly connected with the IS quality, but due to various variables and dimensions there is a link between them. This is mainly connected to the perception of users or the employees. Further, it has mentioned information quality is often a key dimension of end-user satisfaction instruments. As a result, information quality is often not distinguished as a unique construct but is measured as

a component of user satisfaction. Therefore, measures in this dimension are problematic for IS success studies. That is why the organization performance cannot be measured directly along with the IS service quality.

With related to this, Aurelie [13] has come up with the following details in Table 1 which had been focused by different researches. All these factors create an impact on the performance of the organization so as the service quality.

| Dimensions | Definition | Authors |
|---|---|---|
| Quality of information Provided | Content, exactness, format and speed of obtaining the information | [3] [26] |
| Quality of the system | Reliability, accuracy, pertinence and confidence in the IS | [4] [26] |
| Ease of use | Judgment of efforts required to be able to use the IS | [27] |

Table 1: Dimensions and variables which have focused by other researchers

There are widely accepted instruments to measure the service quality such as Technology Acceptance Model (TAM) used in the Theory of Reasoned Action and Theory of Planned Behaviour [14] to explain why some IS are more readily accepted by users than others; SERVQUAL, SERVEPERF, Zones of Tolerance Approach [28] are there to basically measure the service quality of IT departments, as opposed to individual IT applications, by measuring and comparing user expectations and their perceptions of the IT department [24]; D and M model of IS success using six dimensions - system quality, information quality, service quality, use, user satisfaction, and net benefits was created by [24]; [8] have developed and validated a multi-dimensional IS success instrument for enterprise systems. This success instrument has been applied and tested in three separate studies. It consists of four dimensions – system quality, information quality, individual impact, and organizational impact and 27 item measures: nine measures of system quality, six measures of information quality, four measures of individual impact, and eight measures of organizational impact.

## III. METHODOLOGY

According to the literature, perceived performance can be used to measure organizations' performance [23]. Therefore, this study measure the impact of the perceived performance of the IT organizations over the IS service quality. The performance might be changing after introducing the IS to an organization. So these changes need to be measured to support the research. Also the quality of the ISs, how supportive they are to obtain the targets by addressing the customers' correct requirements; needs to be measured as how they are perceived by the users or the employees.

The methodology will be carried out in a way which it supports to collect the perceived performance of the organization with the support of ISs. Moreover, how the requirements are attained by improving the effectiveness of completing tasks. On the other hand, methodology critically evaluated the performance of the organization with the implementation of ISs. User involvement is very important and there is a close relationship between IS success and getting requirements from the users. In terms of user involvement, Olson and Ives [15] found an inconclusive relationship between user-involvement and IS success. However, in the studies of Kettinger and Lee [28] and Tait and Vessey [18], the moderating effect of task or system complexity on the relationship between user involvement and IS success was suggested. Task or system complexity as a moderating variable is related to the evolution level of IS [1].

Table 2 shows a summary of different dimensions which have been used for each model.

| Measurement | Dimensions |
|---|---|
| SERVQUAL | Tangibles, Reliability, Responsiveness, Assurance and Empathy |
| D & M | System quality, Information quality, Service quality, use. User satisfaction and Net benefits |
| SERPERF | Tangibles, Reliability, Responsiveness, Assurance and Empathy |
| Zeithamal's model | Desired service and adequate service |

Table 2: IS service quality related dimensions and its variables

Although these measurements were presented by the researchers, there are criticisms also against these models. When it comes to Zeithamal's model, it has mainly described about the desired service and adequate service and the gap between them [25]. This "desired" and "adequate" need to be well – defined. Otherwise it can make discrepancies when the gap is taken into account.

Table 3 and Table 4 show the model developed by the researcher. The information gained through the literature was considered as the base in developing the model.

The main dimensions which was focused under the IS service quality and the perceived performance of the organizations were further discussed on Table 3 and Table 4. The finalized model was developed with 5 main dimensions and each variable is listed together with the variable name which was used for the PLS model was described in Table 3. Table 4 further describes the 7 main dimensions which were developed by the researcher in measuring the performance and under each of them variables are listed with the variable name.

A 5 Likert scale questionnaire was designed to collect data from a survey which was sent to 5 selected IT companies in Sri Lanka. 20 responses from each company were planned. All those companies are engaging in developing applications to local and foreign customers and selling their customized application to customers by using different infrastructure such as share point, ERP and etc.

Pilot survey was carried out to a group of 25, to validate the questionnaire and to identify what amendments to be done to the questions before it is distributed to the exact sample. When this type of survey is carried out, it is essential to do a pilot survey in order to cross – validate the questionnaire itself. This methodology is described in the research paper by Kettinger and Lee [28].

The data analysis techniques depend on the data types. Since the research is quantitative and involves multiple dependent variables, a multivariate analysis method should be used. Multivariate analysis methods include factor analysis, multiple regressions, structural equation modelling and cluster analysis.

Structural Equation Modelling (SEM) techniques such as LISREL and Partial Least Squares (PLS) are second generation data analysis techniques that can be used to test for statistical conclusion validity. Researchers can find answers to a set of inter-related research questions in a single, systematic and comprehensive analysis. This is done by simultaneously modelling relationships among multiple independent and dependent constructs (latent variables). [7].

SEM allows for both theory testing and theory development which means confirmatory and exploratory modelling. Confirmatory modelling usually starts out with a hypothesi

t gets represented in a causal model. Out of the SEM hniques Partial Least Squares (PLS) is the well-established hnique for estimating path coefficients in structural models l has been widely used in various research studies [7]. erefore PLS has been selected for this research analysis ainst LISREL

COnce the PLS algorithm runs and if finds any missing values, re's a mechanism to replace those space with a value. In this search, PLS algorithm uses the Mean Value Replacement ption for missing value treatment. Although this data doesn't ve any missing value, still the same option is selected to run algorithm.

AAt the measurement model level, PLS estimates item dings and residual covariance. At the structural level, PLS imates path coefficients and correlations among the latent iables, together with the individual $R^2$ (Squared Multiple rrelation) and AVE (Average Variance Extracted) of each of latent constructs. T-values of both paths and loadings are n calculated using either a jackknife or a bootstrap method. rther, bootstrapping option produces information to asses the ttistical significance of path coefficients and indicator dings. Good model fit is established with significant path efficients, acceptably high $R^2$ and internal consistency nstruct reliability) being above .70 for each construct. [12]

TTo establish the validity of latent constructs, factorial idity is necessary. Two elements of factorial validity, nvergent validity and discriminant validity, must be mined in PLS. Convergent validity is shown when each measurement item correlates strongly with its assumed oretical construct, while discriminant validity is shown en each measurement item correlates weakly with all other nstructs except for the one to which it is theoretically ociated. [12]

| | Dimension | Variables | Description |
|---|---|---|---|
| R | Reliability | Recoverability ( REL5) | Systems support to recover problems when you are in trouble |
| | | Safe Use ( REL12) | How far the users are comfortable enough when using the system |
| | | Trust ( REL4) | Providing promised services |
| F | Functionality | Interoperability ( FUNC6) | Systems dependence on other systems / ability to work collaboratively with other systems |
| | | Suitability ( FUNC3) | Suitability of facilities available |
| | | Functional Coverage ( FUNC14) | Whether the system contains all the functionalities which user requires |
| P | Performance | Accuracy ( PERF7) | Whether the system provides error free records |
| | | Time Behaviour ( PERF8) | How speed the system is |
| | | Responsiveness ( PERF10) | How far the server supports to the users to get done the work without mentioning it is busy |
| U | Usability | Learnability | Easiness of |
| | | ( USA15) | learning about the system / building interest towards that |
| | | Understand ability ( USA16) | How easy it is to understand and remember the process of the system |
| | | Assistance ( USA17) | Whether the users are assisted enough to perform tasks / get decisions on the system options |
| | | Customizability ( USA13) | Whether the IS can keep information related to different party in an organized way |
| User Friendliness | | Availability of facilities ( UF1) | How the system facilitate with up – to – date options |
| | | Visual aids ( UF2) | How the system supports the users by providing a user friendly interface and all |
| | | Suitability ( UF11) | Whether the system motivate the user to use it |

Table 3: variable description of the research model (for is service quality)

| Dimension | Variables | Description |
|---|---|---|
| Organizational Effectiveness | Goals achievement (OE1) | Achieve goals on time |
| | Focus on strategic objectives (OE2) | How the focus of the company to the strategic objectives |
| Efficient Organization | Service Delivery (EFF3) | How far the company deliver its services as required |
| | Resource Utilization (EFF4) | Company's ability to utilize the resources and use without wasting |
| Relevant organization | Stakeholder satisfaction (RO5) | Whether the stakeholders are happy with the company's service delivery / stakeholders' ongoing requirement are addressed |
| | Respond for the emerging competition (RO6) | Whether the company identify the new market trends / emerging competition and address it accordingly |
| Financial Viability | Minimize unnecessary expenses (FV7) | The ability of the organization to generate finance and manage its resources in order to ensure its existence |
| Motivation | Organizational | Employees' |

| | Motivation (MO8) | motivation to work |
|---|---|---|
| Capacity | Programming Process management (CAP9) | Whether the company's processes are flowing smoothly |
| External Environment | Stakeholder Focus (EE10) | Whether the company build trust between the company and the stakeholders |

Table 4: Variable description of the research model (for organizations' performance)

## IV. RESULTS

Survey findings and the statistical findings are described in this chapter. The findings were generally evaluated first and then they have affected on the statistical results and the decisions which were retrieved at the end. As described on chapter III, the pilot survey was carried out and the response rate of it was 60% (15 out of 25). The response rate of the original sample was 76% as 76 responses were able to collect out of 100. The male female ratio was 7:3 as the responses came from 63 males and 23 females. Out of the sample, 23% had experience for more than 4 years, 38% had 2-4 years of experience and rest was less than 2 years. The sample revealed that most of the time systems are being upgraded annually. Further, the sample indicated that ISs are being used for more than 10 years with almost all the functions by limiting the manual operation.

The PLS model was developed to test the research model statistically. Information Systems Service Quality and Perceived Performance were the main constructs of the model. PLS model structure is shown in Fig 1.

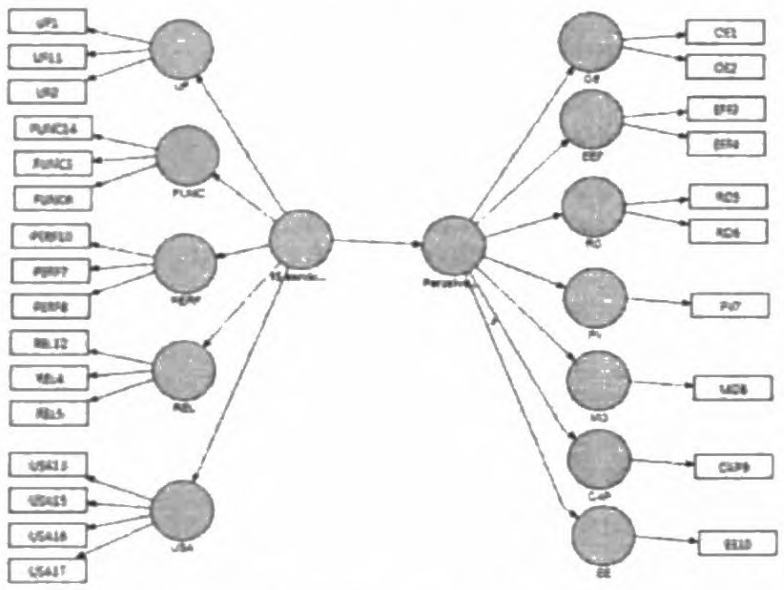

Figure 1: Partial Least Square (PLS) model

As mentioned on chapter III, the algorithms were run accordingly to retrieve the data. Apart from that Cronbach α coefficient approach was used to reliability assessment which ranges from 0 to 1. Cronbach's should be above .60 for exploratory research and above .70 for confirmatory research [12]. Therefore, in this research also it should be above 0.7 for IS service Quality and Perceived Performance. The values come as per the standard way by exceeding the threshold of 0.7 for both which are acceptable for capturing the dimensions as recommended by Nunnally [12].

| | Cronbach's Alpha | Communality | AVE | Composite Reliability | R Square |
|---|---|---|---|---|---|
| IS Service Quality | 0.88877 | 0.42934 | 0.42934 | 0.91083 | 0.00000 |
| Perceived Performance | 0.90622 | 0.54460 | 0.54460 | 0.92245 | 0.46869 |

Table 5: Scale reliability and composite reliability measurements

The composite reliability of IS Service Quality and Perceived Performance also have above 0.7 which is shown in Table 5. The $R^2$ values should be in a greater value. No official guidelines exist to mention $R^2$ need to be greater than this, but, clearly, the larger these values, the better. Table 5 indicates the $R^2$ value as 0.468, which can be considered as 0.5 once it is rounded to the first decimal which is in the acceptable region.

| | Outer loadings for IT companies | |
|---|---|---|
| | **IS Service Quality** | **Perceived Performance** |
| UF1 | 0.752928 | |
| UF2 | 0.653367 | |
| FUNC3 | **-0.16259** | |
| REL4 | 0.585748 | |
| REL5 | 0.589652 | |
| FUNC6 | **0.205903** | |
| PERF7 | 0.809475 | |
| PERF8 | 0.625402 | |
| PERF10 | **0.366014** | |
| REL12 | 0.830213 | |
| UF11 | 0.832002 | |
| USA13 | 0.76091 | |
| FUNC14 | 0.731294 | |
| USA15 | 0.681555 | |
| USA16 | 0.664465 | |
| USA17 | 0.731024 | |
| OE1 | | 0.763431 |
| OE2 | | 0.781477 |
| EFF3 | | 0.719795 |
| EFF4 | | 0.677857 |
| RO5 | | 0.611751 |
| RO6 | | 0.716523 |
| FV7 | | 0.781066 |
| MO8 | | 0.785191 |
| CAP9 | | 0.781441 |
| EE10 | | 0.741654 |

Table 6: Outer loadings for the sample

The outer loadings should be greater than 0.5 to be significant. According to the sample (Table 6) all the variables which measure IS service quality except FUNC3 (Suitability of facilities available), FUNC6 (Systems' dependence on other systems / ability to work collaboratively with other systems) and PERF10 (How far the system support the user to get the work done) are significant. For Perceived Performance all the variables have given a significant value. According to these results most of the variables are focusing to one direction while only some variables falling on to the rejection area.

By examining the cross-loading in Table 7, we can see whether the measurement items actually correlate with the constructs. All measurement items except FUNC 3 (Suitability of facilities available), have their cross-loading

values greater for its assigned construct, compared to any other construct.

| | Cross loadings for IT companies | |
|---|---|---|
| | **IS Service Quality** | **Perceived Performance** |
| UF1 | **0.752928** | 0.438087 |
| UF2 | **0.653367** | 0.328645 |
| FUNC3 | **-0.16259** | -0.07211 |
| REL4 | **0.585748** | 0.40239 |
| REL5 | **0.589652** | 0.587125 |
| FUNC6 | **0.205903** | 0.047658 |
| PERF7 | **0.809475** | 0.453982 |
| PERF8 | **0.625402** | 0.418197 |
| PERF10 | **0.366014** | 0.207935 |
| UF11 | **0.832002** | 0.661352 |
| REL12 | **0.830213** | 0.501235 |
| USA13 | **0.76091** | 0.482325 |
| FUNC14 | **0.731294** | 0.479475 |
| USA15 | **0.681555** | 0.53727 |
| USA16 | **0.664465** | 0.524236 |
| USA17 | **0.731024** | 0.598683 |
| OE1 | 0.543189 | **0.763431** |
| OE2 | 0.475533 | **0.781477** |
| EFF3 | 0.490681 | **0.719795** |
| EFF4 | 0.591545 | **0.677857** |
| RO5 | 0.409302 | **0.611751** |
| RO6 | 0.413922 | **0.716523** |
| FV7 | 0.542943 | **0.781066** |
| MO8 | 0.515631 | **0.785191** |
| CAP9 | 0.591547 | **0.781441** |
| EE10 | 0.460639 | **0.741654** |

Table 7: Cross loadings for the sample

The Fig. 2 shows the structural model calculated using Smart PLS. The values on the lines show the path coefficients for constructs and the loadings for the measurement items. The values inside the constructs (circles) show the $R^2$ values. Diagram also proves the less significance in FUNC 3, FUNC 6, and PERF 10 items.

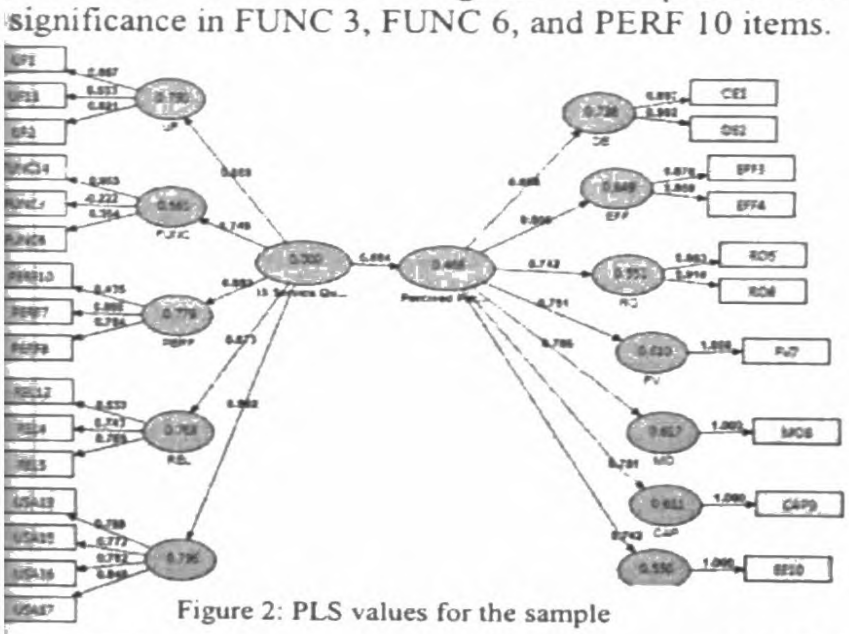

Figure 2: PLS values for the sample

hen cons ement items, own in Table 8, we can see that in the IS Service Quality and rceived Performance, all paths are statistically significant at 0.05 significance level. But the graph for T values (Fig. 3) ow a lessen value for FUNC3 which is less than 1.96 of significance value [12]. Therefore, the values which are higher than the significance value of 1.96 were considered to be in the acceptable region and the values lesser than 1.96 were considered to be in the rejection region.

| | T values for IT sector sample | |
|---|---|---|
| | **IS Service Quality** | **Perceived Performance** |
| UF1 | 43.31066 | |
| UF11 | 34.724 | |
| UF2 | 19.08059 | |
| FUNC14 | 37.64365 | |
| FUNC3 | 2.491052 | |
| FUNC6 | 3.472038 | |
| PERF10 | 6.426319 | |
| PERF7 | 44.2765 | |
| PERF8 | 21.19224 | |
| REL12 | 50.16468 | |
| REL4 | 13.28675 | |
| REL5 | 15.19823 | |
| USA13 | 30.51589 | |
| USA15 | 20.81713 | |
| USA16 | 17.95112 | |
| USA17 | 21.03685 | |
| OE1 | | 32.60327 |
| OE2 | | 31.11424 |
| EFF3 | | 23.11927 |
| EFF4 | | 22.82504 |
| RO5 | | 12.96341 |
| RO6 | | 23.52654 |
| FV7 | | 37.24097 |
| MO8 | | 39.41447 |
| CAP9 | | 30.78123 |
| EE10 | | 20.81229 |

Table 8: Outer model t - statistics

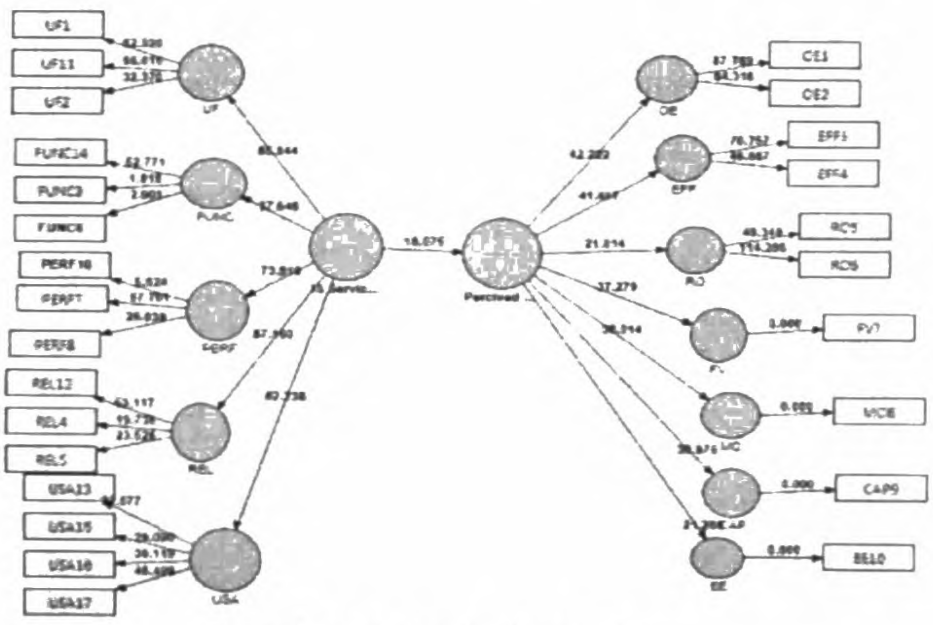

Figure 3: T statistics for the sample

## V. DISCUSSION

From the analysed data it can be concluded that the ISs service quality has a high impact on the perceived performance of organizations. After analysing the relationship from items to

latent variables and from variables to latent constructs, it was proved that the relationship between IS service Quality and Perceived Performance of the IT organization is strong. The significance of the relationship was further proved by the T values.

Item FUNC 3 (Suitability of the system functions), had its values rotating in between plus and minus which need to be considered and paid attention. It was not statistically significant most of the times.

Same as FUNC 6 (Dependability on other sub systems) and PERF10 (System's support to get done the work) was not significant in the outer loading calculation and in the PLS model.

Items FUNC 6 (Dependability on other sub systems) and PERF10 (System's support to get done the work) has also given values which are less than the significance level. Reason to reject FUNC 6 can be though interoperated systems are there, if employees can work with one system without waiting on any other system / sub modules to be fed data to get the work done they do not find this as very important. Same results have shown with PERF 10 (System's support to get done the work) as well. These might not be significant in organizations perspective.

After evaluating the results of the hypothetical model FUNC 3, FUNC 6, PERF 10 were removed from the model which has led to have minus or less values many times. The validated model was again tested using PLS. Fig. 4 shows the path coefficients, constructs, correlations of the validated model. All the outer loadings are greater than 0.5 and are therefore significant.

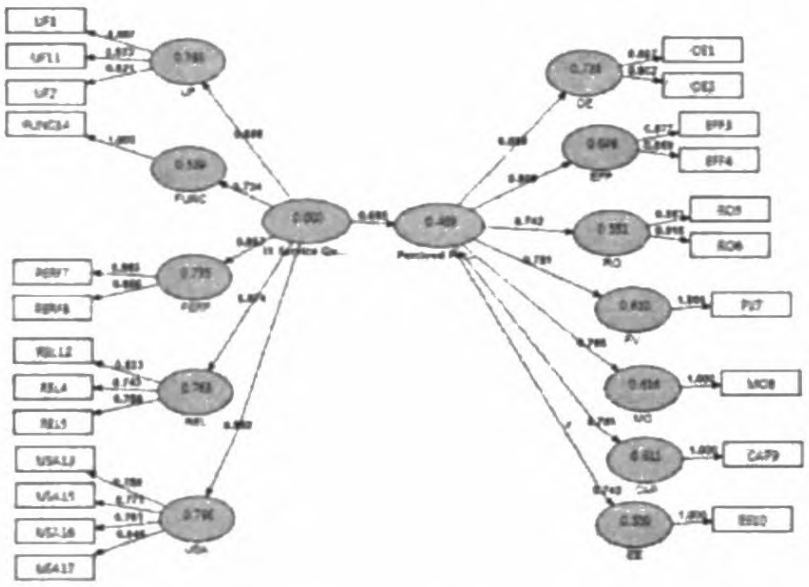

Figure 4: PLS graph for the validated model

Figure 5: T values for the validated model

After considering the T values in the validated model (Fig. 5); safety, availability, accurate service, functional coverage and interaction scored up to become the most considerable factors from IS service quality perspective. Organization's motivation to perform, ability of the organization to manage resources and ensure its existence, , programming and process management, achieving the mission, purpose and goals and focus on strategic objectives were the main performance related areas which affect the quality of the ISs. Therefore, management can pinpoint the specific areas that need higher attention when they have many focus areas. Organizations can pay attention on the prioritize set of variables which were derived with the analysis. The prioritization matrix is shown in table 9.

| Variable Name | Variable Code | Variable Name | Variable Code |
|---|---|---|---|
| Safety | REL12 | Organization's motivation to perform | MO8 |
| Availability | UF1 | Ability of the organization to manage resources and ensure its existence | FV7 |
| Accurate Service | PERF7 | Programming and Process management | CAP9 |
| Functional Coverage | FUNC14 | Achieving the mission , purpose and goals | OE1 |
| Interaction | UF11 | Focus on Strategic Objectives | OE2 |
| Customization | USA13 | Can respond to emerging competition | RO6 |
| Assistance | USA17 | Maximize resource usage | EFF4 |
| Learn ability | USA15 | Timeliness of service delivery | EFF3 |
| Time Behavior | PERF8 | Stakeholder focus | EE10 |
| Visual Aids | UF2 | Satisfies stakeholders requirements | RO5 |
| Understandability | USA16 | | |
| Recoverability | REL5 | | |
| Trust | REL4 | | |

Table 9: Prioritization Matrix

## VI. CONCLUSION

A broader objective of this research was to assess the IS quality of the Sri Lankan IT sector and identify the link between the perceived performance of the organization and ISs service quality. In other words it measures how far the IS service quality impact on the performance of the organization. Specifically, in this research, the hypothetical model was developed initially with the support of the literature and the developed model was validated and modifications were checked accordingly. It can be used as an instrument to determine how the IS service quality affect the perceived performance of organizations.

Major recommendations which can be derived from this research are that organizations should focus on ISs that are being used to support their operations and whether they provide a real service to gain the competitive advantage and higher performance.

One major limitation of the research is that the sample was limited only to Colombo area and the outstations were not

apped. Among the companies at Colombo, the research sample ncluded high level, major scaled companies only. It would ave given more descriptive results, if the sample included ompanies from different scales by representing different areas.

An analysis among different groups such as, different levels of the organizations, different departments of the organizations could not have been done as the sample size was not large enough to facilitate those areas.

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