

## How to Impact Information System Increase Efficiency of Small Business in Sri Lankan Rural City areas

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**Abstract :** *Businesses invest in developing information systems resources to gain increase efficiency of small business. Literature has demonstrated the requirement of strategic alignment in converting these information factors. The Data collecting, data distributing, information stores and information processing of information systems and its impact on small business efficiency will enable these businesses to fine tune their information systems applications in achieving required goals. This study describes a research study that focuses on the information systems and information orientation of small businesses with their perceived business efficiency. The organizational impact of adoption of the initial stages of electronic business development is also examined. The data were collected from small businesses on nine strategy area as well as data collection information stores and information distributing using as dimensions of information systems. These dimensions have significantly influenced their small business efficiency. This phenomenon is explained with a model named Linear Strategic Alignment Model. For the all these four dimensions remain significant in explaining their business efficiency.*

**Keywords:** *Information System, SME, impact*

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### I. Introduction

Information has become a basic resource in economic systems, especially in enterprises. In order to maintain enterprises to continue and survive, it is necessary to collect and store everything that helps them serve their activity, and from here, enterprises need to do their day to day work on collecting, processing, storing and transmitting such information through information systems. Small and Medium Enterprises have become a common factor in the growth of the economy, especially when implementing and applying information system methods in enterprises. Small business are defined in a variety of ways by various countries using such parameters such as number of persons employed, amount of capital invested, amount of capital invested, amount of turnover or nature of the business, etc. Not only different countries apply different definitions on the concept of Small business, even within countries, different regions and different institutions adopt varying definitions in this regard (gamage, 2003). In Sri Lanka, there is no clear definition for Small business. Different government agencies use different criteria to identify Small business. Among these criteria are the number of employees, the size of fixed investment, and the nature of the business and the sector. Formal or informal, in which the industry operates. There are different terms used in different documents to identify this sector. Small Enterprises, Micro Enterprises, Rural Enterprises, Small and medium activities, Cottage and Small Scale Industry, etc., are some of the terms frequently used (gamage, 2003). As well as Information plays an important role in the transfer of mankind from ancient times to the present, where this age is describe as information era because of the importance of information in conducting of people life especially economically. The small and business are affected by the changes in the business environment such as wide developments in information technology and communications systems. As traditional management and systems failed to make these small and medium-sized enterprises able to compete, grow and survive, the use of modern technologies and systems for contemporary management has become a necessity. Information Systems (IS) were introduced to assist in the growth and survival of small business with the aim of improving the processes within enterprises. Within the modern corporate world ever one can't leave from impact on globalization it is all so same for larger and small business. Globalization earn lack of data and information day by day there for small business want some process for collection and distribution data and information. Because of those reasons information system very important for small business as well as large business. Therefore, this study going to studies about "How to impact Information System increase small business". Following questions included in this research,

1. How to impact Information System increase efficiency of Small Business?
2. What kind of factors on Information system impact increase Small Business?

3. How do Information System influence the increase efficacy of Small Business?

Main Objective of the research is examination of factors that Impact of Information system increase efficiency of Small Business. And Hypothesis are as follows,

- H1: There is a significant impact of data collecting and increase efficiency of small business.
- H2: There is a significant impact of data processing and increase efficiency of small business.
- H3: There is a significant impact of information storing and increase efficiency of small business.
- H4: There is a significant impact of information distributing and increase efficiency of small business.

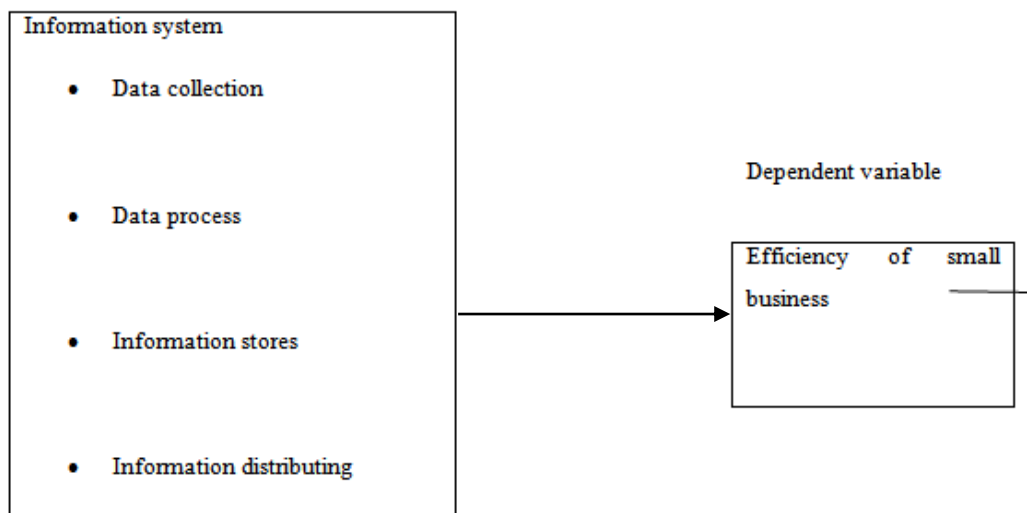
This study examines the small business on information system in Sri Lanka. Various researchers found the relationship between small business and information system regarding several industries and organizations. In these researches found relationship between two variables and importance which successfully for each organizations. Small business are very important for defense of our country and provide better contribute for development the country in every hand. That's why it is better investigation. What are the impact of the information system and increase small business? It can be seen there are some limitation of the study. According to this research area there is no any researches have been conducted. Researcher tries to conduct the research on the rural areas in Sri Lanka.

## II. Methodology

Using Simple random sampling, selected sample was 60 were owners of small business. A questionnaire was used to data collection in this research. The questionnaire method was chosen to collect data for number of reasons to the study. The Sample of the too large as 50 small businessmen and using questionnaire was easy to collect data from them. In this study most important part is data analysis and presentation because from this part researcher can get the real output of the study. To get that the analysis should be a scientific and accurate so to analyze the data gathered from the questioner can use statistical tool. As data presentation method this study supposes use bar charts, line charts, and other tables using SPSS. Organization are under a great deal with information system and small business. The conceptualization of the research issue or question indicates the concepts to be used, or the conceptual basis for the study, and represents a set of basic expectations about what you believe you will find (Martin et al., 2013).

### 3. 1: Conceptual Framework

#### Independent variable



#### 3.2.3.1 Dependent variable

The dependent variable is the variable of primary interest to the researcher. It depend on other independent variables. The dependent variable of the current study is increase small business. As a dependent variable increase of small business can be define as Small business are defined in a variety of ways by various countries using such parameters such as number of persons employed, amount of capital invested, amount of capital invested, amount of turnover or nature of the business, etc. Not only different countries apply different definitions on the concept of Small business, even within countries, different regions and different institutions adopt varying definitions in this regard (gamage, 2003)An independent variable is one that influences the

dependent variable in either a positive or negative way. Based on literature there are so many factors affecting on increase small business. Those factors are Capitalization, government police, training and development, Communication. In the current study researcher is analyzing impact of identified four factors on increase small business. Data collecting, data process and information stores, information distributing. These factors are the independent variables of the research. Data collection is the process of gathering and measuring information on targeted variables in an established systematic fashion, which then enables one to answer relevant questions and evaluate outcomes. (Wikipedia, 2014) Data processing is simply the conversion of raw data to meaningful information through a process. Data is manipulated to produce results that lead to a resolution of a problem or improvement of an existing situation. Similar to a production process, it follows a cycle where inputs (raw data) are fed to a process (computer systems, software, etc.) to produce output (information and insights). (French, 1996) Data stores is very imported part of information system because this is the process of store the data base in database. We use so many thing (data base, ram, rom.) Data distributions are used often in statistics. They are graphical methods of organizing and distributing useful information. There are several types of data distributions (dot plots, histograms, and tally charts) in this section, same major elements of research design have been presented. The elements so discussed were; research approach, type of study, nature of study, the study setting, unit of analysis and methodological choice. There were two types of research approaches as Deductive and inductive. This was whether research should use the deductive approach, in which you develop theory and hypotheses and designed a research strategy to test the hypotheses, or the inductive approach, in which you would collect data and develop theory as a result of data analysis in the research.

In this research it was most appropriate to use deductive approach. It involved the development of a theory that was subjected to a rigorous test. (Sekaran, 2007) Listed five sequential stages through which deductive research would progress;

- Deducing a hypothesis(a testable position about the relationship between two or more events or concepts) from the theory;
- Express the hypothesis in operational terms which propose a relationship between specific variables;
- Testing the operational hypothesis (this will involve an experiment or some other form of empirical inquiry)
- Examining the specific outcome of the inquiry

### III. Results

#### Reliability

Reliability of the items was verified by computing the Cranach’s Alpha. Questionnaire. Reliability of the scale the internal consistency was measured using Cranach’s Alpha value. The widely accepted minimum standard for internal consistency is 0.7. Table 1 mentioned the Cranach’s Alpha value for all variables.

**Table 1:** Cronbach’s Alpha value of the variables

Variable	Cronbach’s Alpha	No of items
Efficiency of small business	.828	05
Data collecting	.813	04
data processing	.856	03
Information stores	.708	04
Information distributing	.746	03

**Source:** Statistical data

According to the above Efficiency of small business reach are greater than 0.7 level expect. As the independent variables data collecting also greater than 0.7 level expect and data processing, information stores, information distribute used questionnaire had high degree of reliability, performance feedback also greater than level of expect. All variables had high degree of reliability because that all variables over 0.7 there for that variable’s Alpha value over 0.7 are enabling considered reliable in empirical studies. Thus, there is acceptable reliability for developed questionnaire therefore it used to measure impact of data collecting data process information stores and information distributing impact on efficiency of small business. Researcher executed the questionnaires among 60 small business at selected area. But it can be included 29 questionnaires from the employees. There were several unanswered and uncompleted questionnaires. Those unanswered and uncompleted questionnaires were rejected. However the researcher could obtain the sample of 50 small business for response rate 80%. Therefore the respondents’ rate of this study can be considered as acceptable.

**Table 2:** Summary of the final sample

Area	Distributed	Returned	Uncompleted	Usable
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Area 01	14	0	2	12
Area 02	36	0	8	28

The characteristics of small business and small business were discussed under this section. Researcher was using four demographic characteristics such as use IS, capitalize, in Anuradhapura district.

	Frequency	Percent
Yes	50	100%
No	00	00%
Total	50	100%

**Table 3:** distribution and percentage of the use of IS

**Source:** Data Analysis

According to the data in the sample, the majority of the respondents (50) were yes it was 100% of the sample. There were 00 business not use IS and it was 00% from the sample.

**Table 4:** Frequency distribution and percentage of the no of employees.

	Frequency	Percent
Bellow 10	17	34%
11-25	12	24%
26-49	21	24%
More than 50	0	0%
Total	50	100%

**Source:** Data Analysis

According to the data reported in table 4.2 majority of the employees were in bellow 10 in organization it was 17 from the sample and percent is 34%. Under 11-25 there were 12 employees are working in organization. In between 26-49 employees only 5 are working accordance with the sample. Percent value of those age categories 24%, 24% respectively. There was no any drivers more than 50 and 60 years or more age category

**Table 5:** Frequency distribution and percentage of the No of Years use IS.

	Frequency	Percent
Less than 1 year	01	34%
11-04 years	18	34%
26-09 years	31	32%
More than 10 years	0	0%
Total	50	100%

**Source:** Data Analysis

According to the data reported in table majority of the years start SM were in more than 10years it was 32 from the sample and percent is 64% Under less than 1 years there were 8 small business are working. In between 1-4 years only 09small business are working accordance with the sample. Percent value of those age categories 16%, 18% respectively. There was 11 small business 04-09 years doing 22% present category.

**Table 6:** Frequency distribution and percentage of the Type of IS.

	Frequency	Percent
My self	16	32%
Friends	14	28%
Relations	20	40%
Bank lone	0	0%
Total	50	100%

**Source:** Data Analysis

There are 20 owner complete their capital them self-according to data sheet it as 40% present. As well as 04 friends capitalize small business adoring data sheet it is 8% present of the sample. Relations all so given fund start the SMs according to data sheet it is 2 relations and it is 4% present of the sample. Majority owners supply them fund using bank loan it is 24of sample and 48% of majority souse. Data process, data process, information store, information distributing, and increase small business are the variables of this research study. Each variables was measured using questionnaire. The degree of agreement or disagreement of the respondents for each variable ranged from strongly disagrees to strongly agree with the assigned value of 5 to 1 respectively.

The level of existence of each variable was measured by using the descriptive statistical tools such as mean and standard deviation. The standard questionnaire that was used to measure the impact of data collecting, data processing information stores and information distributing on increase small business. The descriptive statistics computed for this variables was exhibit in the table

**Table 7:** descriptive statistics for the independent variables

	N statistics	Minimum statistics	Maximum statistics	Mean statistics	Std. deviation statistics
Data collecting	50	2.00	5.00	4.4200	0.66325
Data processing	50	1.67	5.00	4.4200	0.76190
Information stores	50	2.00	5.00	4.4200	0.66325
Information distributing	50	2.00	5.00	4.3600	0.68293

**Source:** statistical data

According to the statistics there was no significance different between mean scores of each independent variables. But information distributing reported slightly lower mean scores as 4.3600. The data collection data processing and information stores mean value 4.4200 as a same value of mean. Overall, 50 respondents in the sample indicated that they have impact from data collecting, data processing, information stores, information distributing on efficiency of small business because mean values of those variables are in between 4 and 5. However data process and information distributing represented the highest standard deviation of 0.76190 and 0.68293 respectively. The mean comparison of each variables. When researcher interviewed the questionnaire with small business they said that they have good information collecting, processing, store and distributing and they can work with a fresh mind in their organization and they understand importance of IS usage of their organization. Because of those reasons those factors highly impact to efficiency of small business. The standard questionnaire that was used to measure small business of development officers by considering.

**Table 8:** descriptive statistics for job efficiency of Small Business

	N statistics	Minimum statistics	Maximum statistics	Mean statistics
Efficiency of SM	50	2.20	5.00	4.4120

**Source:** statistical data

According to the findings calculated mean value falls indicating that the majority of have efficiency of small business. When researcher interviewed the drivers with the questionnaire they said that they have good and effective performance to achieve organizational goals. Under this session the correlation analysis was used to measure the importance and the direction of the relationship between the pairs of variables. Data collecting and data processing and information stores, information distributing and efficiency of small business. The hypothesis were tested using the business detail correlation. Coefficient (r) for test relationship between two variables also associated significant value for test the hypothesis.

**Table 9:** The correlation between efficiency of small business and data collection was measured using correlation coefficient.

		Increase small business	Data collecting
Increase small business	Pearson correlation	1	0.959
	Sin. (1-tailed)		0.01
	N		
Data collecting	Pearson correlation	0.959	1
	Sin. (1-tailed)	0.01	
	N	50	50

According to the results of the statistical test, Pearson correlation coefficient between two variables 0.959 it is indicated that there is strong positive relationship in between efficiency of small business and data collecting. That relationship is statistically significant as correlation is significant at 0.05 level (as sig. is 0.01 which is less than 0.05 level) therefore it is statistically mentioned that hypothesis was accepted

H1: there is a positive relationship in between data collecting and efficiency of small business.

**Table 10 :**The correlation between efficiency of small business and data processing was measured using correlation coefficient.

		Increase small business	Data processing
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Increase small business	Pearson correlation	1	0.934
	Sin. (1-tailed)		0.01
	N		
Data processing	Pearson correlation	0.934	1
	Sin. (1-tailed)	0.01	
	N	50	50

According to the results of the statistical test, Pearson correlation coefficient between two variables 0.934 it is indicated that there is strong positive relationship in between efficiency of small business and data presses. That relationship is statistically significant as correlation is significant at 0.05 level (as sig. is 0.01 which is less than 0.05 level) therefore it is statistically mentioned that hypothesis was accepted  
H2: there is a positive relationship in between data presses and efficiency of small business.

**Table 11:** The correlation between efficiency of small business and Information stores was measured using correlation coefficient.

Increase small business	Pearson correlation	1	0.959
	Sin. (1-tailed)		0.01
	N	50	50
Information stores	Pearson correlation	0.959	1
	Sin. (1-tailed)	0.01	

According to the results of the statistical test, Pearson correlation coefficient between two variables 0.959it is indicated that there is strong positive relationship in between efficiency of small business and information stores. That relationship is statistically significant as correlation is significant at 0.05 level (as sig. is 0.01 which is less than 0.05 level) therefore it is statistically mentioned that hypothesis was accepted  
H3: there is a positive relationship in between information stores and efficiency of small business

**Table 12:** The correlation between efficiency of small business and Information stores was measured using correlation coefficient.

Increase small business	Pearson correlation	1	0.952
	Sin. (1-tailed)		0.01
	N		
Information distributing	Pearson correlation	0.952	1
	Sin. (1-tailed)	0.01	
	N	50	50

According to the results of the statistical test, Pearson correlation coefficient between two variables 0.952it is indicated that there is strong positive relationship in between efficiency of small business and information distributing. That relationship is statistically significant as correlation is significant at 0.05 level (as sig. is 0.01 which is less than 0.05 level) therefore it is statistically mentioned that hypothesis was accepted.  
H4: there is a positive relationship in between information distributing and efficiency of small business.

**Regression analysis**

Under the regression analysis of this research study researcher was done linear regression and multiple regression. To identify the impact of identified factors on efficiency of small business researcher was done in linear regression.

**Table 13:** model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.968	0.938	0.933	0.15860

**Source:** statistical data.

According to the table value of R square is 96% and adjusted R square is 93% and it can be explain that impact efficiency of small business is explained by 96% through the identified factors.

**Table 14** coefficient

Model	Unstandardized Coefficient		Standardized coefficient	t	Sig.
	B	Std. error	Beta		
1 (constant)	0.543	0.158		3.437	0.001
Data process	0.149	0.095	0.184	1.547	0.129

Data stores	0.382	0.145	0.412	2.634	0.011
Information distributing	0.350	0.113	0.389	3.108	0.03

**Source:** statistical data

According to the statistical data the regression coefficient of data processing indicates that it has a positive impact on efficiency of small business (sig = 0.001,  $p < 0.05$ ). This results supports for the three hypothesis and dependent variable of the study. The regression coefficient of organizational data stores indicates was (sig = 0.011),  $p > 0.05$ ). Therefore it can be conclude that this result does support for the third hypothesis (H3) of the study.

The regression coefficient of information distributing indicates was (sig = 0.03),  $p > 0.05$ ). There for it all so have positive impact on employee performance. Therefore H3, H4 is supported of the study. But data processing dese not support to study because (sig = 0.129),  $p < 0.05$ ). There for it all so have not impact on employee small business. If we increase efficiency of small business information distributing the most significant dimension in this study (sig = 0.011),  $p > 0.05$ ).it is very impotent among those factors increase efficiency of small business.

#### **IV. Conclusion**

This study was carried out with the purpose of identify the impact of information system on efficiency of small business specially focus on small business in rural area in Sri Lanka the tested research model consist with as data collecting, data processing, information stores, information distributing independent variable efficiency of small business as dependent variable. The data are demonstrated according to the linear regression H1, H2, H3, H4 all are support for the hypothesis. There is a positive relationship between efficiency of small business and data collecting, data processing, information stores, information distributing independent variables. According to the result only one variable support to the hypothesis which is represent in the model. But there may be several factors which are influence on efficiency of small business therefore the organization should take in to their consideration to identify what are those factors and try to improve their efficiency.

#### **V. Recommendation**

When hiring information system analyzes for the organization administration should recruit well qualified IS analyzes to the organization give them a good training that supposed to get the advantages for the small business. Financial benefits is one of the most important motivational factor of the small business. Financial benefits that the gain from the organization. Basic salary, compensations and rewards. Therefore the amount of financial benefits should compared with the effort that the owners motivation. When making new schedule for the process of information administration must discuss with the system analysis and tend to make a strategic plane to origination. Government should give the full attention on establishing a good performance information system to evaluate small business's performance. When making important decisions regarding the employees and given a chance for them to idea how to increase efficiency of organization/small business. To improve efficiency of the small business's organization should establish a proper maintaining system for the information system.

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