

Analysis of Selected Factors Influencing Adoption of Information Technology in Small Business: An Exploratory Study on the Entrepreneurs

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Abstract: This paper examines some selected factors influencing the extent of information technology adoption among the businesses which fall in the category of small business such as Plastic industries, Mushroom production firms, Cane industries, Handicrafts manufacturer, Bakery industries etc. The purpose of this paper is to analyze the perception of entrepreneurs regarding IT (Information Technology) adoption in small business and to find out the factors that influence Information Technology adoption process. This study is based on descriptive research. Data were collected using a structured survey questionnaire of 40 entrepreneurs of small businesses in Sylhet, Bangladesh. The researcher conducted various statistical analyses such as- frequency distribution, descriptive statistics, correlation analysis and chi-square tests to analyze the survey responses and identified a number of key findings. The study reveals various factors including competitive advantage, better quality of services, productivity, IT (Information Technology) infrastructure, IT (Information Technology) training and cost maximization that affect Information Technology adoption in small businesses.

Keywords: *Information technology (IT), Small business, Frequency Distribution, Correlation Analysis, Chi-square Test, Productivity.*

I. INTRODUCTION

The growth of Small business is a significant variable for economic development of a developing country like Bangladesh. Information technology facilitates the small business through its computerized data processing system, data preparation appliances or various applications. Despite of these advantages, IT adoption by small business has remained relatively low. It is commonly accepted today that IT has significant effects on the productivity of firms. The aim of this research is to better understand the factors which affects IT adoption by the entrepreneurs based on their perceptions. This paper examines the extent of information technology adoption among the businesses which fall in the category of small business as defined by the BSCIC such as Plastic industries, Mushroom production firms, Cane industries, Handicrafts manufacturer, Bakery industries etc.

Objectives:

- =>To identify the factors that affects IT adoption by entrepreneurs.
- =>To determine the influence of both positive & negative factors on IT adoption.
- =>To establish relationship among a number of selected factors that positively or negatively effects IT adoption.

II. LITERATURE REVIEW

Information Technology can be defined as those technologies engaged in the operation, collection, transport, retrieving, storage, access presentation and transformation of information in all its forms (Boar, 1997). Small scale enterprise is a pivotal instrument for economic growth and development. Large organizations have enough resource to adopt information technology while small businesses have limited financial and human resources to adopt information technology. (Brynjolfsson, E and Hitt, L. M 2000). Ghobackhloo, Hong, Sabouriand and Zulkifli stated

(2011) in their paper titled ‘Strategies for successful Information Technology adoption in Small and Medium enterprise’ that, IT has been critically become an indispensable tool for the daily operations of organization. Heenigala, Armstrong (2010), discussed in the paper titled ‘ Potential impact of new technology on governance in small business’ that cost, lack of time, skill and knowledge, privacy issue are the common factors for not adopting IT in small business. Olusola, Oluwaseun (2013), in the paper titled that ‘An appraisal of the impact of Information Technology on small and medium enterprises performance’ conclude that information technology positively impact on the performance of SMEs operation and generally firms enter into business to make profit and IT does not only help in increasing productivity but also quality and make the way business operate less complicated, time saving and disclose the new trends of business and how business are suppose to address such change

III. RESEARCH METHODOLOGY

This study is a descriptive research. It followed a quantitative approach to achieve the objectives of the study which were descriptive in nature. The quantitative approach has used to investigate the factors that affects IT adoption in small business via several statistical techniques. The questionnaire was translated from English to Bengali and then translated to English again to make sure the meaning of each question does not change during translation. The questionnaire included a five-point likert scale to code the data used by respondents in indicating their response to each of the items asked. The questionnaire was divided into three parts:

Part-A included the demographic information of the respondents which consisted of eight questions concerning the respondent’s organization name, position, age, gender, level of education, type of organization, years of experience and use of information technology.

Part-B included respondent’s perception on positive factors that lead to IT adoption by entrepreneurs. The positive factors were- competitive advantage, growth, high productivity, better promotion and distribution, save time, effectiveness, customer satisfaction, profitability and better quality service.

Part-C included respondent’s perception on negative factors that discourages IT adoption by entrepreneurs. The negative factors were- troublesome, costly, lack of training, government support, lack of IT infrastructure, inadequate power supply and difficulty to learn.

Sample Size: In this study, nearly 75 questionnaires were distributed, 40 were returned representing an effective response rate. However 35 fields were discarded because the respondents have served either inconsistent information or missing data. So this study was based on 40 small

business entrepreneurs of Sylhet city includes male, female, different age group, positions, experiences and educational levels. The entrepreneurs are running organizations both from government and private ownerships. Most of the small businesses are includes- grocery shop, food & beverages, clothing & boutiques, beauty & healthcare, poultry & dairy firms, fisheries, library, travel agency etc.

IV. PLAN FOR ANALYSIS

The study uses different statistical methods like frequency distribution, descriptive statistics, correlation analysis and chi-square tests. Data analysis was carried out with the use of SPSS 17.0 version software.

Hypothesis

The following hypotheses are stated in a null form:

$H_01 = \text{There is no significant relationship between IT adoption and cost maximization}$

$H_02 = \text{There is no significant relationship between IT adoption and lack of IT infrastructure}$

$H_03 = \text{There is no significant effect of IT adoption on better quality service}$

$H_04 = \text{There is no significant effect of IT adoption on increase productivity}$

Selected Factors: The review of literature assists us to understand the factors which affect information technology adoption in small business. From the literature based proposition and journal based study, we developed an open ended questionnaire and collect data through field survey. From the interview of different entrepreneur of small business, we develop a model which demonstrates some positive factors (Competitive advantage, Increase productivity, efficiency, better promotion & distribution, Customer satisfaction etc.) that encourages entrepreneurs to adopt information technology in their business and also some negative factors (Costly, lack of employee training, unawareness, lack of government support, adjustment etc.) that prevents entrepreneurs to adopt information technology.

V. DATA ANALYSIS AND FINDINGS

Frequency Analysis: The findings are based on the survey. As different people provided different opinions regarding the questions so the frequency distribution of respondents in terms of gender, age, education, type of organization and job experience. Among the small businesses, 87.5% organizations are private ownership and 12.5% organizations are government ownership. The experience level of respondent has been measured in four levels. 40% of the respondents are having experience of 1-5 years, 27.5% are having experience of 6-10 years, 12.5% having experience of 11-15 years and remaining 20% respondents having experience of more than 15 years. Among the

respondents, 60% are using information technology in their organization and remaining 40% are not using information technology.

Descriptive statistics: From all the positive factors the highest mean value is 3.10 (Better quality of service) and the lowest mean value is 2.65 (Growth). That is better quality service is the factor which leads more entrepreneurs to adopt information technology in their business. Competitive advantages (3.08), High productivity (2.93), save time & cost (2.85), Customer satisfaction (2.93), Effectiveness (2.88), Profitability (2.72), Better promotion and distribution (2.75) are also showing higher mean values. The standard deviations are showing the appropriateness of the mean values. From all the negative factors the highest mean value is 2.82 (Lack of IT infrastructure) and the lowest mean value is 1.28 (Time consuming). That means Lack of IT infrastructure is the factor for which most of the entrepreneurs are unable to adopt information technology in their business. Troublesome in using (2.52), Costly (2.15), Inadequate power supply (2.70), Lack of training (2.10), Lack of government support (1.85) are also showing higher mean values. The standard deviations are showing the appropriateness of the mean values.

Correlation Analysis: From the Pearson correlation analysis of positive factors, the highest positive correlation is existed between high productivity and save time and cost (0.56). That means if productivity increases then organizations can save more time and cost. The internal association between better quality service and customer satisfaction is significantly correlated (0.54). That means customers can be satisfied if the organization provide better quality service. Profitability is significantly correlated with better quality service (0.43). That means if the organization provides better quality service then it will maximize its profitability. Other factors are also positively correlated. From the Pearson correlation analysis of negative factors , the highest correlation exist between Lack of IT training and time consuming (0.43). That means if the employees do not have proper IT training then it will take more time to complete the work. The internal association between lack of training and difficulty in use is also significantly correlated (0.42). That means it will difficult for employees to use IT without proper training. Lack of IT training and Lack of IT infrastructure is highly correlated (0.38). As there is lack of IT infrastructure so the entrepreneurs lacks IT training. Other factors are also correlated with one another.

Chi-Square tests: The findings of Chi-square tests are conducted to find out the statistical significance of the null hypotheses is given below:

$H_01 = \text{There is no significant relationship between IT adoption and cost maximization.}$

From the chi-square test result, the P value is .003 which is significant at 5% level of significance. So we can reject the null hypotheses (H_01) and can conclude that there is a significant relationship between IT adoption and cost maximization.

$H_02 = \text{There is no significant relationship between IT adoption and lack of IT infrastructure.}$

From the chi-square test result, the P value is .029 which is significant at 5% level of significance. So we can reject the null hypothesis (H_02) and can conclude that there is a significant relationship between IT adoption and lack of IT infrastructure.

$H_03 = \text{There is no significant effect of IT adoption on better quality service.}$

From the chi-square test result, the P value is .023 which is significant at 5% level of significance. So we can reject the null hypothesis (H_03) and can conclude that there is a significant relationship between IT adoption and better quality service.

$H_04 = \text{There is no significant effect of IT adoption on increase productivity.}$

From the chi-square test result, the P value is .034 which is significant at 5% level of significance. So we can reject the null hypothesis (H_04) and can conclude that there is a significant relationship between IT adoption and increase productivity.

VI. LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

The sample size was only 40 and this research identified the key factors that affect IT adoption by small businesses in Sylhet, Bangladesh. So, this study deals with the entrepreneurs of Sylhet region. The further study can consider for multiple region.. This study has not considered any specific field of business and there is an opportunity of conducting study on the specific field such as manufacturing, feeder, serving and ancillary industries.

VII. CONCLUSION

Technology is something without which we cannot think of leading a single day in this modern age. From the results and discussion, it is revealed that both positive and negative factors are influencing IT adoption by entrepreneurs. As positive factors competitive advantage, better quality of service, project's effectiveness are showing the significant values so as to ensure the better output the entrepreneurs should adopt information technology in small business. The government and other relevant authorities may help to build a proper IT infrastructure and make IT cost effective that motivates our entrepreneurs. The training facilities can enhance the competencies of the young entrepreneurs.

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