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AN ANALYSIS OF THE FACTORS AFFECTING THE ADOPTION AND DIFFUSION OF ELECTRONIC BUSINESS BY ZIMBABWEAN TEA ESTATES: A CASE OF TANGANDA TEA ESTATES

Godfrey Sithole¹ and Noreen Sarai^{1*}

*Corresponding Author: **Noreen Sarai** ✉ noreyn@gmail.com

The study is an analysis of factors affecting the adoption and diffusion of electronic business at Tanganda Tea Estates. The study was furnished through the following objectives; to establish the current use of e-business at Tanganda Tea Estates, to identify factors that can affect the adoption of e-business by Tanganda Tea Estates, to identify benefits that can be derived from the adoption and diffusion of e-business by Tanganda Tea Estates and to make recommendations. The study was done at Tanganda Tea Estates where 50 respondents were selected for the study. Primary data was collected using structured questionnaires. The sample which comprised executive management right down to general workers ensured adequate representation of the population. Purposive sampling was used to select management respondents while simple random sampling was used for general workers. Data collected was analyzed with the aid of Statistical Package for Social Sciences (SPSS). The major factors that affected the adoption and diffusion of e-business at Tanganda Tea Estates were found to be management commitment, computer literacy and staff training. These factors were found to be poor thereby adversely affecting the adoption and diffusion of e-business at Tanganda Tea Estates.

Keywords: e-business, Technological diffusion, Computer resource, Variance

INTRODUCTION

Tea is the most popular manufactured drink in the world and three billion cups of tea are believed to be consumed daily. Its consumption equals all other manufactured drinks in the world including coffee, chocolate, soft drinks and alcohol put together as suggested by Marcfarlane (2004). Tanganda Tea Company, Zimbabwe's largest tea

company has a history of over 100 years in the tea business with plantations in the Chipinge district of the Eastern Highlands of Zimbabwe (www.tanganda.co.zw).

The growth of the company has been highly attributed to the high appeal of the Tanganda brand in the market both locally and internationally. Rising labor costs, price volatility on world

¹ School of Information Sciences and Technology, Harare Institute of Technology, Harare, Zimbabwe.

markets and production outpacing exports have been found to be some of the major challenges in the tea industry in Africa as suggested by Odingo (2013) and Tanganda Tea Estates has not been spared. An informal enquiry made at Tanganda Tea Estates claim that the company has not fully embraced the use of electronic business in its operations. Africa Outlook (2014) reported a huge demand for tea but the low prices on the world market impacted negatively on the company's fortunes. In order to sustain its operations, remain highly competitive both locally and internationally, the company has to fully embrace Information and Communication Technology (ICT) as an integral part of business as is the trend with other big companies on the international scene.

STATEMENT OF THE PROBLEM

With Zimbabwe being ranked 14 among the world's top producers of tea and the global market failing to keep pace with supply of tea products (FAO, 2007), there is need to innovate and become more competitive and viable. With the current challenges faced at Tanganda Tea Estates, as identified by FAO (2007), it is believed that e-business can be solution to such. A sustainable solution is required to address the challenges facing tea producers such as rising labor costs, price volatility on world markets and production outpacing export demand as cited (Odingo, 2013).

RESEARCH OBJECTIVES

The specific objectives are:

- To establish the current use of e-business at Tanganda Tea Estates.

- To identify factors that can affect the adoption of e-business by Tanganda Tea Estates.
- To identify benefits that can be derived from the adoption and diffusion of e-business by Tanganda Tea Estates.

RESEARCH QUESTIONS

- What is the current use of e-business at Tanganda Tea Estates?
- What are the factors that affect the adoption of e-business by Tanganda Tea Estates?
- What benefits can be derived from the adoption and diffusion e-business by Tanganda Tea Estates?

SIGNIFICANCE OF THE STUDY

Cost reduction, improved product quality, increased reach to markets and suppliers are some of the benefits of e-business to organizations today as suggested by Saffu *et al.* (2007). With the potential value of e-business in mind, it is important to find out about the factors that affect the adoption and diffusion of electronic business at Tanganda Tea Estates. Findings of the study can be generalized for other organizations for example in the manufacturing and agricultural sector whose organizations will find them useful if they are concerned about doing business effectively and efficiently at the lowest costs. Such focus presents opportunities for the firms to gain competitive advantage through cost leadership, greater access to markets, customer satisfaction, improved human resource and financial management and which has direct implication on the firms' returns.

SCOPE OF THE RESEARCH

The study was carried out at Tanganda Tea

Estates, Chipinge and three other catchment offices in Harare, Zimbabwe. Respondents of the study were drawn from the whole company with all departments equally represented. Respondents including low level management up to executive management were drawn from the following departments; Human Resources, Finance, Information Technology, Audit, Public Relations, Research, Planning, Quality Assurance, Commercial, Business development, Loss Control, Design and Construction and Water Supplies and General workers as well.

LITERATURE REVIEW

Theoretical Review

Bertalanffy (1956) developed the System's theory input-output model adapted for this study. The theory, according to Koontz *et al.* (2003) postulate that an organized enterprise does not exist in a vacuum; it is dependent on the environment in which it is has originated. The inputs from the environment are received by the organization, which then transforms them into outputs. Corporate image, cost, and use of internet, training and equipment are some of the few factors that have a direct impact on the performance of the organization activities.

The Concept of Technological Adoption

According to Rogerson and Fairweather (2003), technology adoption means different things to different people. Viewing technology adoption as a consistent process is the key to enabling hesitant users to successfully adopt and use technology. Technology adoption is important because it is the vehicle that allows most people at Tanganda Tea Estates to participate in a rapidly changing world where technology has become central to enhance products and services.

Companies who won't or can't adopt increasingly limit their ability to participate fully in the financial and convenience benefits associated with technology. Understanding the factors influencing technology adoption helps us predict and manage who adopts, when, and under what conditions as suggested by Benamati and Lederer (2001).

The Concept of Technological Diffusion

Diffusion means the spread of electronic business at Tanganda Tea Estates. The theory of innovation diffusion has been incorporated in an organization to improve efficiency of products and services (Al-Shehry *et al.*, 2006). According to Drew and AlGhamdi (2011), diffusion is simply defined as the process by which an innovation is adopted and gains acceptance by members of an organization. A number of factors interact to influence the diffusion of an innovation. The main major factors that influences the diffusion process are the innovation itself, how information about the innovation is communicated, time, and the nature of the company into which the innovation is being introduced as sited by Rogers (1995). Diffusion research, in its simplest form, investigates how these major factors, and a multitude of other factors, interact to facilitate or impede the adoption of a specific product or practice among members of a particular adopter group.

The Concept of e-Business

Chaffey (2007) suggests that, there exists no generally accepted definition of e-business in the electronic community literature. The term is defined in many ways by many authors and there is little mutual understanding to the attributes of e-business. According Chen (2001), e-business is nothing else than an architecture of a firm and its network of partners for a marketing and

delivering value and relationships capital to one or several segment customers in order to generate profitable and sustainable revenue streams. Kekale and Kekale (1996) defined e-business as description of the connection relationship between a business enterprise and the products and or services it produces to the market.

CONCEPTUAL FRAMEWORK

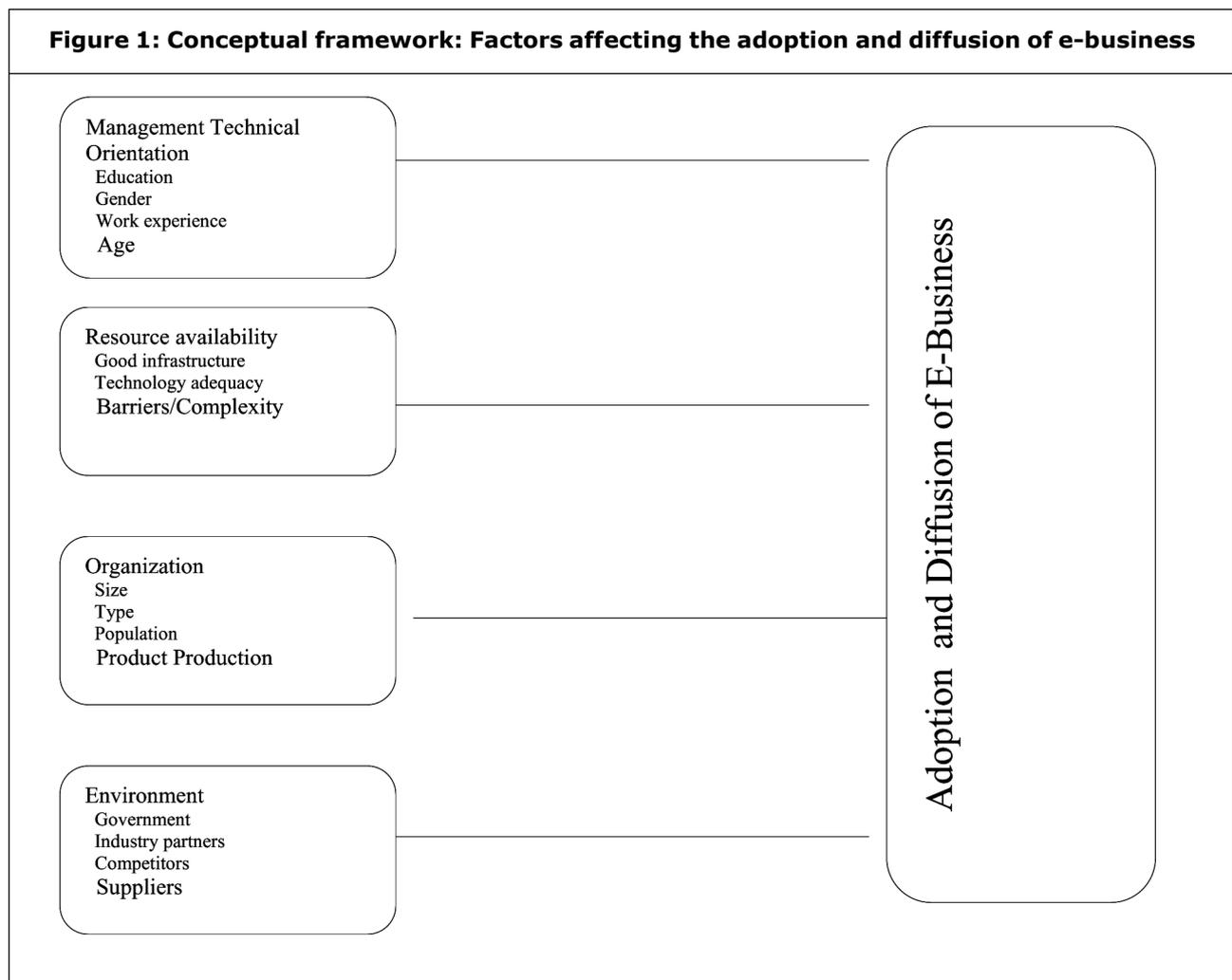
This section develops a conceptual framework within which the concepts, the factors that affect the adoption and diffusion of electronic business at Tanganda Tea Estates.

Figure 1 shows the relationship between different factors that affect the adoption and diffusion of e-business at Tanganda Tea Estates.

RESEARCH METHODOLOGY

Research Philosophy

A mixed methodological approach was adopted. The study made use of both quantitative and qualitative methods to collect data. The positivist approach is a scientific approach that allows the researcher to pay attention to factual aspects of the study and break down a phenomenon to its simplest elements which would make it easy for the researcher to measure and understand



concepts as suggested by Polit *et al.* (2001). The use of both methods is important to counteract the weakness of one and capitalize on the strength both resulting in increased reliability and validity of data. The approach takes advantage of the strength of the other two approaches and obviates weaknesses of a single approach.

Research Design

A survey design was adopted for the case study of Tanganda Tea Estates. A survey is appropriate as it is descriptive research method as it allows the observation of sampled elements without making any attempts to manipulate them Leedy (1980).

Population and Sample

The population 1000 employees made up of 10 executive managers, 65 managers (low level to senior level) and more than 800 employees from Head Office and the three catchment offices based in Harare, Zimbabwe. This is the body of people under consideration in the study as defined by Hussey *et al.* (1997).

Sampling Procedure

A sample of 50 was used for this study comprising 15 managers and 35 employees. Purposive sampling was employed to select those in management respondents. In purposive sampling, group participants are preselected because of a special character necessary for research as suggested by Cooper and Schindler (2006). The managers were purposively selected as they are key informants in the respective departments of interest. Fifteen Line managers selected were from Human Resources, Finance, Information Technology, Audit, Public Relations, Research, Planning, Quality Assurance, Commercial, Business development, Loss

Control, Design and Construction and Water Supplies. Simple random sampling was used in selecting employee respondents of the research. It involves selecting the sample at random from the sampling frame using random number tables. Each possible sample in different units has an equal chance of being selected. A total number of 35 employees were randomly selected.

Research Instruments

Questionnaires were used to collect primary data for the research. Closed questions used in the study help the respondent to make quick decisions in answering as well as help the researcher to easily code responses for analysis and interpretation as supported by Trochim (2006). In order to avoid ambiguity, the researcher constructed the questionnaire with clear instructions and careful worded questions. In as much as a wide range of views was required, the researcher minimized open-ended questions so as to make the questionnaires motivating to complete in a short period of time. The researcher also used secondary data obtained from documentary sources, namely the Strategic Plan and the Business Plan.

Data Collection Procedure

The first stage of the research involved a review of secondary data already available from journals, business, text case studies and internet and published books relevant to the subject matter. Questionnaires were self administered by the researcher to all respondents. Appointments were first made over the telephone and questionnaires were dropped to the respondents for completion at their own time. This reduced bias by the researcher. A 5 point Likert scale was used to collect individual responses on the factors affecting the adoption of e-business.

Table 1: Plan for data collection and handling

Date	Activity	Verification
29/03/14	Writing to management requesting for permission to carry out the study.	Written letters, replies response letters
07/04/14	Presenting the research proposal to management	A hardy copy presented to management
10/04/14	Distributing questionnaires to respondents	Questionnaires distributed

RELIABILITY

The researcher ensured data reliability by clearly defining the population of Tanganda Tea Estate as 1000 and a sample of 50. The questionnaires were carefully constructed and data was collected by questionnaire designed under direction of the supervisor and also secondary data was obtained from published reports such as annual reports and other company publications. The questionnaire was constantly revised in order to capture other arising issues necessary for the study.

VALIDITY

Souranta (2003) argues that questionnaire design has a huge effect on validity and reliability of the responses obtained. All areas of instruments analyzed and corrected to ensure they measured what they intended to measure. Questionnaires were designed in a manner that allows the

researcher to determine attitudes and opinions of respondents. Issues developed from conceptual framework were evaluated against issues obtained from questionnaires so as to ensure construct validity.

DATA ANALYSIS PROCEDURE

Frequency graphs were used in presentation; mean scores, variances and standard deviation were calculated to analyze data collected upon which interpretation and discussion was made. Collected data was coded, categorized and summarized on the master data sheet. The researcher used statistical tests to analyze data to produce diagrammatic presentations in the form of charts, tables and graphs with the aid of Statistical Package for Social Sciences (SPSS). The obtained information was coded and qualified consequently presented on graphs, tables, bar charts and pie charts.

Table 2: Plan for data processing of analysis

Date	Activity	Means of verification
	Data handling and sorting	Completed forms, questionnaires, interviews, checklists, observation, checklist sorted according to sample.
	Classification and safe keeping of data quality control check	Reports of completed techniques used
	Data processing	Master sheet results computed results on tables and charts
	Interpreting the results	Tables, graphs and charts
	Conclusions/finding	Recommendations
	Feedback of research findings to managements of Tanganda Tea Estates and contractors	Proposed recommendations

The researcher checked all questionnaires and other collection tools as a quality control procedure.

RESULTS AND DISCUSSION

Overall Response Rate

Out of the (50) fifty questionnaires sent to Tanganda Tea Estates staff in Chipinge, 40 completed the questionnaires indicating a 80% return rate as the other branches were not allowed by their management personnel to reveal company information concerning e-business activities All planned fifteen interviews were successful. Frequencies of the respondents received are as presented in tables. Percentages, variances and standard deviations were calculated using SPSS statistical package.

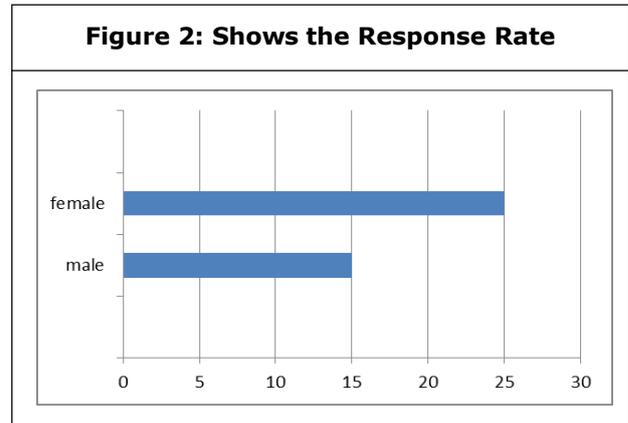
Gender

Figure 2 shows that the majority of the respondents were women constituting 62.5% of the respondents, indicating the majority of the workers at Tanganda Tea Estates are women.

Figure 3 indicates that the respondents were

Table 3: Response rate by gender

Gender	Response rate	Percentage
Male	15	37.5
Female	25	62.5



aware of the e-business benefits with environmental friendly paperless transactions; improved marketing through cheap and real time advertising mentioned by the majority of the respondents, followed by cost savings and improved operational efficiency and effectiveness.

From the interviews conducted Tanganda tea

Table 4: Benefits of e-business

Benefit (Likert scale)	1	2	3	4	5
24 hour service to customers.	31	5	1	3	
Increased visibility to markets	12	3	15	5	5
Easy access to information	18	8	4	4	6
Environmental friendly paperless transactions.	8	26			6
Speedy real time communication with customers and suppliers.	35	3	2		
Improved marketing through cheap and real time advertising	15	18	1		6
Cost savings		21		5	14
Improved operational efficiency and effectiveness.	4	30	1		5
Convenience to customers	22	7	10		1
Increased business activity and profitability		13	15	12	3

Figure 3: Benefits of e-business



Estates workers also pointed that the benefits of e-business also include 24 h service to customers, increased visibility to markets and easy access to information.

It is therefore important to note that Tanganda Tea Estates workers have a very good appreciation of the benefits of the e-business, as it eases and facilitates quicker adoption and diffusion of new technologies.

What benefits can be derived from the adoption and diffusion of e-business by Tanganda Tea Estates?

On the questionnaire and the interview respondents were asked the benefits of e-business.

Benefits of e-Business

From the findings quality of products and services was identified as number one benefit (4.75), 75% of the respondents indicated it has very substantial benefits and 25% that it had substantial benefits.

Of the top five perceived benefits were

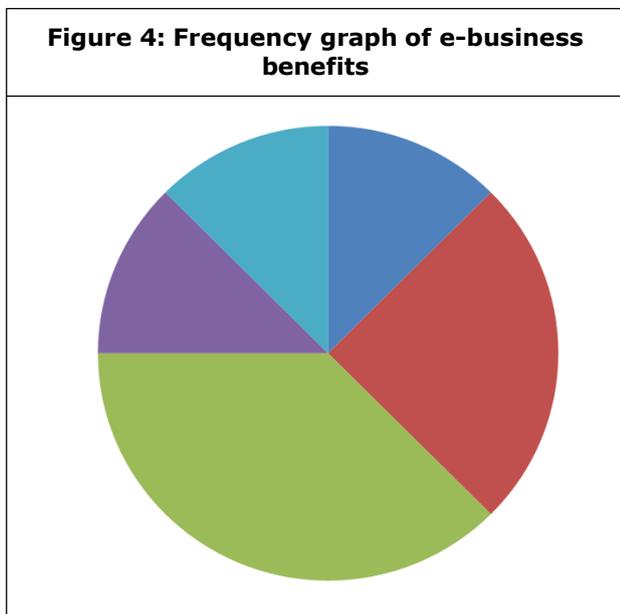
improved internal procedures (4.3) , maintained profit margin (4.075), cost reduction (3.22) and increased productivity (3.8). The results indicate that the most substantial benefits of internal nature which increases the core competencies of the organizations is the ultimate objective of making the organization world class service provider to win a competitive edge in the global market. Other benefits were, increased export market share and increased customer’s satisfaction which are of external nature.

A total of 75% of the respondents stated that substantial benefits would be received at the company. 20% indicated very substantial benefits would be received as internal benefits and 5% benefits to workers at the company. The results were consistent with earlier findings by many past researchers (Hair, 2001) which viewed e-business as a tool for being competitive on the domestic and international market. This means adding value to the organizational processes and improving quality and performance. The e-business implementation was viewed as a means

Table 5: Benefits of e-business

Perceived benefits	1	2	3	4	5	Mean
Quality improvement				10(0.25%)	30(0.75%)	4.75
Improved internal procedures			8(0.2%)	12(0.3%)	20(0.5%)	4.3
Increased profit margin			15(0.375%)	7(0.175%)	18(0.45%)	4.075
Cost reduction			10(0.25%)	21(0.525%)	9(0.225%)	3.225
Increased productivity			13(0.325%)	22(0.55%)	5(0.125%)	3.8
Increased export market share		10(0.25%)	12(0.3%)	9(0.225%)	9(0.225%)	3.425
Increased customer satisfaction			27(0.675%)	13(0.325%)		3.325
Increased on time delivery		8(0.2%)	9(0.225%)	10(0.25%)	13(0.325%)	3.7
Increased domestic market share		7(0.175%)	17(0.425%)	16(0.4%)		3.225
Environmental improvement		14(0.35%)	6(0.15%)	7(0.175%)	13(0.325%)	3.475
Improved employee morale		15(0.375%)	12(0.3%)	8(0.2%)	5(0.125%)	3.075
Improved relations with authority	6(20%)	10(26.7%)	7(10%)	15(36.7%)	2(10%)	2.975
Improved relations with communities		15(56%)	5(10%)	16(16.7%)	4(16.7%)	3.225

Note: 1=No benefits 2 =Minor benefits 3 = Moderate benefits 4= Substantial benefits 5 = very substantial benefits



to satisfy only minimum necessary requirements that assure certification to company organizational goals. The explanations for this

argument could be that the past surveys were based on the same e-business technology. The versions did not incorporate the process approach, value addition and continuous improvement which the latest e-business technology version has.

Value of zero (sig) means that there is a strong

Table 6: Ratings summary e-business benefits

Model		Squares	df	Mean Square	F	Sig.
1	Regression	.267	1	.267	.902	.347 ^b
	Residual	14.233	48	.297		
	Total	14.500	49			
2	Regression	.362	2	.181	.601	.552 ^c
	Residual	14.138	47	.301		
	Total	14.500	49			

a. Dependent Variable: manual
 b. Predictors: (Constant), image
 c. Predictors: (Constant), image, cost

relationship and one means no relationship. From Table 4.1, it shows that there is a strong relationship between corporate image of the company and the manual approach to conducting business.

Data from Table 4.2 (sig) shows that there is a strong relationship with the manual approach such that there is a need to implement the use of electronic business at Tanganda Tea Estates. The relationship with manual approach affects the production of services and products at Tanganda Tea Estates.

Table 7: Ratings Summary of the coefficient table e- business benefits

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.198	.327		3.667	.001
	image	.107	.113	.136	.950	.347
2	(Constant)	.961	.536		1.792	.080
	image	.109	.114	.139	.962	.341
	cost	.089	.158	.081	.560	.578

a. Dependent Variable: manual

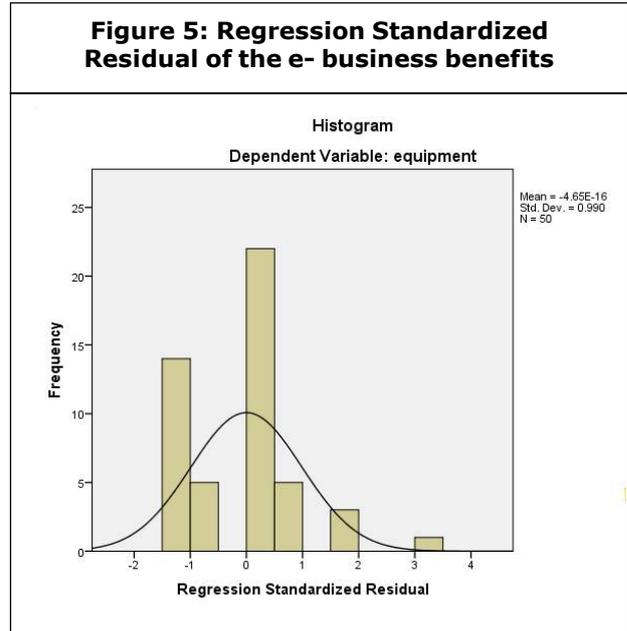
From Table 4.3, R square and adjusted R square shows that there is a weak relationship of competitors and equipment, so equipment does not affect the behavior of the competitors.

Table 8: Ratings Summary and the Model Summary of the e- business benefits

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.152 ^a	.023	.003	.670

a. Predictors: (Constant), competitors
b. Dependent Variable: equipment

Figure 4.4 shows that there is a weak relationship between frequency and the regression standardized residual since standard deviation is 0.990.



Benefits of e-Business

The objective was to identify benefits that can be derived from the adoption and diffusion of electronic business at Tanganda Tea Estates industries in Zimbabwe. The presented findings show that the most significant e-business benefit for Zimbabwean Tea Estates industry was marketing improvement using electronic business (mean 4.825), 80% indicated it as extremely important. The second highest ranked e-business was quality of products and services (4.8). Third was cost reduction (4.4), the fourth was corporate image (4.25) and lastly many competitors were already e-business certified (3.2). The results were consistent with earlier findings by Cooper and Zmud (1990) in the UK and many other studies which ranked the same factors as very important. In this study it was placed as number two indicating Zimbabweans were much worried about e-business implementation. This may be due to shortages of products and services on the Zimbabwean market. The customers were just utilizing what was available on the market without paying much

attention to the importance of e-business. Furthermore, computer literacy is still low in Zimbabwe as a nation. It requires more computer education at all levels. The educations at the companies need to be improved. On the other hand it may be due to the fact that Zimbabwe's Tea Estates are facing stiff competition both on the global and local market and there is need to improve the product quality. In order to achieve competitive advantage, differentiation strategies are very necessary to get market share both locally and globally.

Number of computers	Count	Organization
1 - 5	3	Internet cafe
6 - 10	5	Information Communication System
11 - 20	8	Human Resources
21+	24	Management and Operation

From 4.1.1.5 shows that the organization is adequately resourced in as far as computers are concerned with more than 21 computers for Management and Operation, Human Resources (11-21) computers, Information Communication Technology System (6-10), Internet Café (1-5) computers. Given these resources the organization should be capable of conducting its e-business both internally and externally through intranet for coordination and sharing information and externally through internet for order and processing of goods and products.

Tanganda Tea Estates therefore has the necessary foundation to enhance its e-business activities. 80% of the respondents showed

Yes	32	80%
No	8	20%

awareness of the existence of company website while 20% were not aware that the company had a website. It is possible that lower level workers may be unaware of the existence of the of a company website while those in offices have access and knowledge of the company's website.

Website functions	Yes	No
Provides information about the company	7	33
Provides information about the company's products/services	8	32
Allows customers to order online	27	13
Enables the organization to buy online	30	10
Allows customer feedback on products and services	38	2

About 18% of the respondents said that the company's website provided information about the company, 20% said it provides information about the company products and services, while 5% said it allows customer feedback. However 25% observed that the website did not allow customer to order online and 33% said it was unable of enabling the company to buy online

These results also confirm results in Figure 4.2 where the researcher confirmed that the website was not interactive.

This therefore means that while the website does enable certain functions to take place, it still has some limitations in offering the whole package.

About 20% of the respondents claimed that they did not use e-sales, while 80% did, 5% said that did not use e-banking, about 18% said did not use e-banking, approximately 13% said that

did not use e-recruitment .However approximately 38% agreed that they use the e-mail and about 8% said that they use e-advertising. These results also confirm that the company has appreciation of e-business adoption.

This therefore means that while the e-business does enable certain facilities to take place, it still has some difficulties in providing other activities to company.

In spite of the adequate computer resources

	Yes	No
E-mail	15	25
E-sales	32	8
E-buying	38	2
E-Banking	33	7
E-recruitment	25	5
E-advertising	3	37

Likert scale	Respondents	Percentage
1.very low	32	80
2.low	2	5
3.nil	3	7.5
4.high	2	5
5.very high	1	2.5

at the disposal of the company ,high appreciation of the benefits of adopting e-business and the existence of the website ,the majority (80%) of the respondents still feel that the company's extent of e-business is very low.

These results show that a worrying situation in today's world of business where a company's ability to compete and survive are leveraged on the information highway. This situation might be a reflection of lack of top management commitment and the prevalence of the 'do business as usual' attitude.

Barrier (Likert scale)	1	2	3	4	5
Lack of e-business infrastructure.		10	10	1	19
Employees lack required skills.		5	28	5	2
Lack the awareness of the benefits of e-business adoption.			4	3	33
High set up costs.	30	4			6
Security concerns with Internet transactions.		1		28	11
Poor Internet connectivity in the country.	19	27	4		
Low e-business adoption by business partners such as customers and suppliers.	31	2		3	
Little support and policies from government and industry associations.	5	21	2	4	8
Low computer literacy nationwide	15	15	1		9
Inadequate legal framework for using e-business	9	8	2	20	1

About 3% of the respondents said that lack of e-business infrastructure affect e-business activities. Approximately 5% of the respondents said that employees lack required skills. About 8% of the respondents said lack of the awareness of e-business adoption. Approximately 15% of the respondents said that high set up costs. About 3% of the respondents mentioned security concerns with Internet transactions. Approximately 10% of the respondents said that poor Internet connectivity in the Country was to blame. About 8% of the respondents said that low e-business adoption by business partners such as customers and suppliers. Twenty percent of the respondents said that little support and policies from Government and Industries Associations. Approximately 23% of the respondents said low computer literacy in the Country. About 5% of the respondents that inadequate legal framework for using e-business.

These results show a situation where the company is affected by little support and policies Government and industry associations, high set

up cost and low computer literacy nationwide. At the national level however, recent pronouncement and policy initiatives by the Government to embrace information communication technology will go long way to ameliorate these negative factors and help for quicker adoption of e-business.

What factors affect the adoption of e-business by Tanganda Tea Estates?

On the questionnaire and the interview respondents were asked about the factors affecting the adoption of e-business?

The Analysis of Variance

The analysis of variance was performed to determine whether the responses to the factors significantly differ from one another, find out whether, the responses from participants in different departments at different stages of adoption and diffusion of e-business differ from each other and establish whether there is an interaction between factors and the level of understanding e-business at the company.

The statistical results show that there are

Table 15: Analysis of variance

Barrier	Df	sum	mean	Fvalue	Pvalue
e-business infrastructure	17	545	31.3	19.03	0.000#
Employee lack of required skills	1	1066	1066,2	666,10	0.000#
Awareness of the benefits of e-business	18	551	30,6	19.17	0.000#
High set up costs	2869	4882	16	0,000#	0,000#
Security concerns with internet transactions	15	405	28.5	21.7	0,000#
Poor internet connectivity in the country	21	667	31.5	18.8	0.000#
Low e-business adoption by business partners	20	543	26.7	17,3	0.000#
Little support and policies from Government	18	551	23.5	18.4	0,000#
Low computer literacy nationwide	15	389	17.5	21.2	0.000#
Inadequate legal framework for using e-business	19	576	19.5	15.7	0.000#
Signif codes	0.001	0.01	0.05	1	

significant differences between the responses to the factors; between the respondents in the organization at different department’s composition of the workers .The other difference is the level of attitudes towards the adoption and diffusion of e-business. The most important observation is the significant interaction between factors and levels of understanding of e-business.

Lack of employee required skills has the greatest impact on the adoption and diffusion of e-business at Tanganda Tea Estates followed security concerns, low computer literacy, e-business infrastructure, awareness of e-business benefits and little support and lack of policies from Government.

A majority of about 68% suggested that staff training in the use of e-business technology was a crucial strategy to enable adoption of e-business. These results are supported by findings in Table 4.2 where the respondents were of the view that e-business readiness was very low at Tanganda Tea Estates, implying lack of management commitment, support computer literacy and lack of staff training.

To what extent is Tanganda Tea Estates e-business ready?

On the questionnaire and the interview the respondents were asked to comment on the extent of e-business adoption.

The Extent of e-Business Adoption

The objective was to identify the extent of adoption of electronic business by Tanganda Tea Estates. For the company to be successful on the products and services it needed to adopt e-business. With the purpose to gain an understanding about the adoption conditions and problems encountered by firms seeking e-business Tanganda Tea Estates should check the adoption of e-business at the company.

From the 16 process variables presented in the findings, the most significant factors identified were implementation of corrective action (mean 4.52) and top management commitment (4.5), identification of quality aspects (4.75) and training (4.45) that should affect the extent of e-business adoption by the company.

The results were consistent with previous findings by Kraemer and Dunkle (2006) and Taylor (1995), which indicated top management commitment as the most important component which affects the level of adoption of e-business by the company. The fact that Zimbabwean Tea Estates are failing on the regional and international market indicate that there is need to adopt e-business. The Zimbabwean leaders should be transformational to meet the continual technological changes that are taking place locally and regionally.

Table 16: Strategies that can assist the adoption of e-business

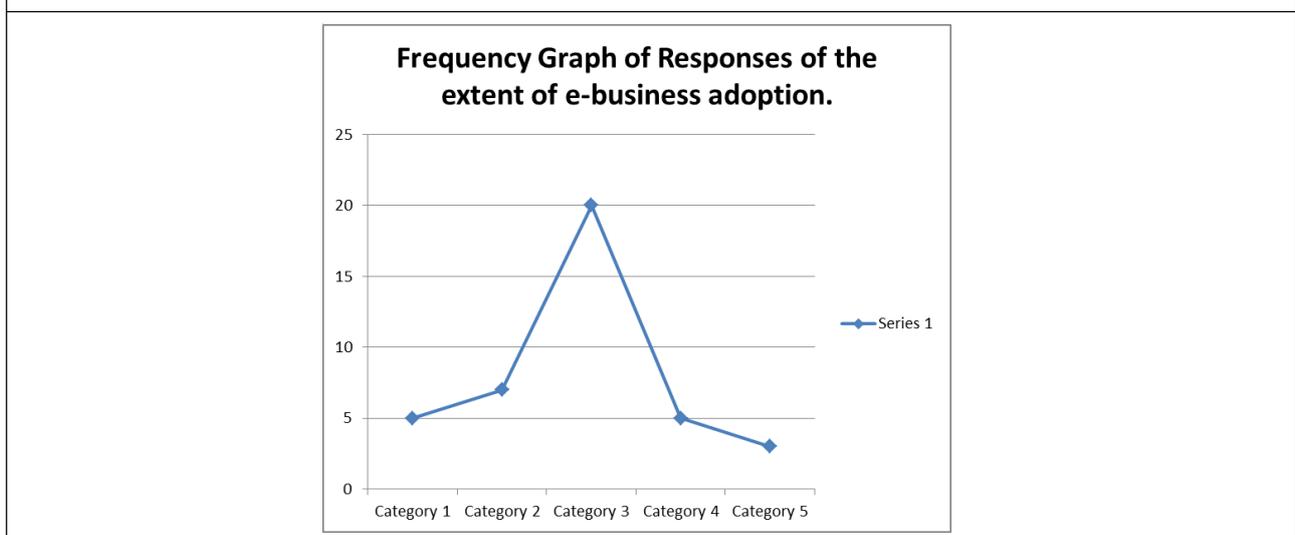
Strategy (Likert scale)	1	2	3	4	5
Set aside funds for e-business set up	5	3	10	7	15
Train staff in the use of e-business technologies		5	5	3	27
Encourage business partners to use e-business			4		
Get advice and direction for e-business set up			16	2	22

Table 17: Respondent frequencies, and summary measure for e-business implementation

Implementation factors	1	2	3	4	5	Mean
Implementation of corrective action				19(0.475%)	21(0.525%)	4.52
Top management commitment				20(0.5%)	20(0.5%)	4.5
Identification of quality aspects				10(0.25%)	30(0.75)	4.75
Training				22(0.55%)	18(0.45%)	4.45
Following standard procedures				12(0.3%)	28(0.7%)	4.7
Periodic audits				23(0.575%)	17(0.425%)	4.425
Workers' involvement			10(0.25%)	9(0.225%)	21(0.525%)	4.5
Middle management commitment			3(0.075%)	17(0.425%)	20(0.5%)	4.425
Workers commitment	1(0.025%)			19(0.475%)	20(0.5%)	4.425
Documentation				25(0.625%)	15(0.375%)	4.375
(Re)defining standard procedure				27(0.675%)	13(0.325%)	4.325
Capital investment	10(0.25%)		2(0.05%)	18(0.45%)	10(0.25%)	3.45
Time allocation			10(0.25%)	30(0.75%)		3.75
Communication skills			26(0.65%)	14(0.35%)		3.35
Cultural change		17(0.425%)	10(0.25%)	13(0.325%)		2.75
Project management skills		10(0.25%)	10(0.25%)	14(0.35%)	6(0.15%)	3.4
Total	11(0.275%)	27(0.675%)	61(1.525%)	272(6.8%)		

Note: 1= none, 2= some, 3=medium, 4=high, 5= very high.

Figure 6: Frequency graph of responses of the extent of e-business



CONCLUSION

The following conclusions were drawn from the study:

- The respondents constituted 62.5% women of the response, indicating the majority of the workers at Tanganda Tea Estates are women
- Employees of Tanganda Tea Estates have a good appreciation of the benefits of the e-business which facilitates easy, quicker adoption and diffusion of new technologies.
- Given computer resources the organization should be capable of conducting its e-business both internally and externally; internally through intranet for coordination and sharing information and externally through internet for order processing of goods and products.
- Tanganda Tea Estates has the necessary foundation to enhance its e-business activities.
- The researcher confirmed the existence of the website by visiting it and discovered that although it existed it was not interactive. This therefore means that the website cannot yield the benefits associated with an interactive website, in the process its usability in e-business. Based on the results from the questionnaire and the interview it could be concluded that the company has website but it is not interactive. This means that while the website does enable certain functions to take place, it still has some limitations in offering the whole package. This means that while the e-business does enable certain facilities to take place, it still has some difficulties in providing other activities to company.
- These results show a worrying situation in today's world of business where a company's

ability to compete and survive are leveraged on the information highway. This situation might be a reflection of lack of top management commitment and the prevalence of the 'do business as usual' attitude.

- A majority of about 68 percent suggested that staff training in the use of e-business technology was a crucial strategy to enable adoption of e-business. These results are supported by findings in Table 4.2 where the respondents were of the view that e-business readiness was very low at Tanganda Tea Estates, implying lack of management commitment, support poor computer literacy and lack of staff training.

The conclusions of the research study were that there are many reasons for seeking e-business adoption which include quality improvement, marketing advantage, corporate image, cost reduction, avoiding potential export barriers, capturing worker knowledge, relations with community's benefits experienced by other companies and some Tea Estates were already e-business certified. The e-business adoption can either be internal or external.

The predominant reasons for seeking e-business certification identified for the Zimbabwe Tea Estate companies were the desire to improve quality of products and services as a marketing advantage. Many previous studies reported customer pressure as the number one e-business factor adoption. In this study it was also considered as an important factor. The growing acceptance of the e-business standard could have made this company benefit significantly as many global companies are already e-business certified.

SUMMARY OF FINDINGS

The appearance of quality issue in the ranking indicates that more companies have become quality aware and they want to improve their quality management system as it was a means of differentiating their product quality and services. Zimbabwe Tea Estates products were failing on the international market due to poor product quality and the Tanganda Tea Estates industry was facing stiff competition from already established Tea Estates companies. Hence to gain a market share both on the domestic and international market there was need to improve the product quality and services as a differentiation strategy. The increase in popularity of the strategy may mean that e-business will no longer provide a competitive advantage but rather a means of survival.

Both the customer and the organization benefit since e-business brings the benefits of quality improvement, improved internal procedures, increased profit margin, cost reduction, increased productivity, increased export market share, increased on- time delivery to the customer.

The study found that e-business benefits meet user needs. E-business has the potential to make core competencies of organizations to become world class Tea Estates and sectors to achieve a competitive edge. The results of the study therefore reveal that claims of e-business internal benefits by certification bodies are not exaggerated.

The significant benefit accrued of quality improvement means that organizations can undercut their competitors on price thereby achieving a competitive advantage. The external benefits derived from e-business of increased export market share and increased customer

satisfaction indicate the growing acceptance of e-business as a means of assuring quality services on the global market. A worldwide availability of the e-business strategies in many languages enhances communications between multinational customers and suppliers.

The findings of the study indicated the potential of the major factors and implications for those organizations that choose not to follow this path. The study also found that critical success factors need to be understood and taken to in consideration for the success of e-business implementation to be successful. To achieve implementation of e-business, the root causes of non-conformance should be identified and corrective action taken to prevent recurrences. Top management must be committed. Top management must walk the talk and then and only then will the organization follow the ethical management practice.

Employees must be trained, involved in the e-business implementation, documentation is to be carried out, a cultural shift should occur within the organization, budgets to be established, timetable should be set, periodic audits to be undertaken for the strategy to be successful.

Recommendations

In light of the benefit derived from e-business implementation and due to its international demand, the following recommendations are intended for the Tea Estates sectors which have not yet decided to implement-business should be crafted into the strategy formulation for the organization to achieve a competitive edge.

The motive to implement e-business should not be because of customer pressure, but for the organization to improve in its core competencies. In the long run of Tanganda Tea Estates does not

fully embrace e-business customers will switch to other Tea Estates with high quality services and products.

To avoid Tea Estates global interaction barriers due to poor product services and lack of third party certification, e-business should be implemented to improve product quality and to offer third party certification required by the global customers as an assurance of product quality consistency.

Due to the collapse of the Tanganda Tea Estates lack of customer goodwill transparency and accountability, the Tea Estates industry should embrace e- business to globally communicate with customers without too much cost. Critical success factors should be implemented to be successful. Tea Estates leaders needed to be transformational for e-business implementation take place as top management commitment is necessary for the change program to take place.

The following recommendations are intended for the government. The government should play its part to promote the survival of the Tea Estates sector and to improve on service delivery by adopting the high road approach to competitiveness by, giving incentives to companies that are e-business certified. Together with non-governmental organizations, Tea Estates companies in Zimbabwe and Finance Authority should source the expertise and provide Tea Estates with the help to implement e-business.

However to draw any solid conclusions about the performance of e-business this was indicated by the results from the questionnaire and the interview. The results reported can serve as a stepping stone from which to launch a more

extensive study of results to find the impact of e-business on Tea Estates in Zimbabwe.

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Hyderabad, INDIA. Ph: +91-09441351700, 09059645577

E-mail: editorijmrbs@gmail.com or editor@ijmrbs.com

Website: www.ijmrbs.com

