

Company characteristics and degree of B2C evaluation in Ampara coastal belt (ACB), Sri Lanka

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Abstract: *There are various studies with respect to B2C e-commerce in different countries including Iran and Dar es Salam. But, studies conducted by different countries are in different contexts in terms of country, organization and time frames. Research objective of this study is to know, in terms of company characteristics, variation of degree of B2C evaluation. Review of literature helped to derive the conceptual model for company characteristics and degree of B2C evaluation involvement. Researcher conducts this study within the geographical scope of Ampara Coastal Belt (ACB) of Sri Lanka. Researcher considered 72 B2C businesses as sample size in this study. Researcher collected data by a simple questionnaire. In this study, researcher used SPSS for analyzing data. Data analysis technique was discriminant analysis. Results of group statistics such as group mean and group standard deviation for all independent variables reveal that there are variations. Tests of equality of group means are tested by Wilks' Lambda and significance of F statistics. Result of Eigenvalue is higher and explains superior function. This refers to that independent variables such as number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers explain around 65% of the variation on evaluation of B2C e- business.*

Keywords: Ampara Coastal Belt, B2C Evaluation, Company Characteristics, Sri Lanka.

Introduction

There are various statements for e- commerce. A recent statement has been put forward by Najafi (2014) who has stated that e-commerce as to the nature of the transaction between both parties and is represented in various classifications and includes a framework of computer programs and systems that undertake services in the internet. Josefine and Emma (2011) stated that the e-commerce industry in Dar es Salaam is in an early stage. There are several categories of e-commerce types. This study focuses of B2C e-commerce type. Company characteristics and B2C e-commerce are related to each other in Ampara Coastal Belt (ACB), Sri Lanka. Company characteristics refer to the characteristics that are related to employees, technological equipment, and customers. As far as the review of the literature carried out by the researcher, there are few studies with respect to company characteristics. These previous studies have been carried out in different context, in different countries and in different time frames. This study is conducted in Ampara Coastal Belt (ACB) of Sri Lanka during 2016/ 2017.

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Research Question and Research Objective

Researcher raises the research question as, in terms of company characteristics, does degree of B2C evaluation vary?. This research question is converted into research objective. Research objective of this study is to know, in terms of company characteristics, variation of degree of B2C evaluation.

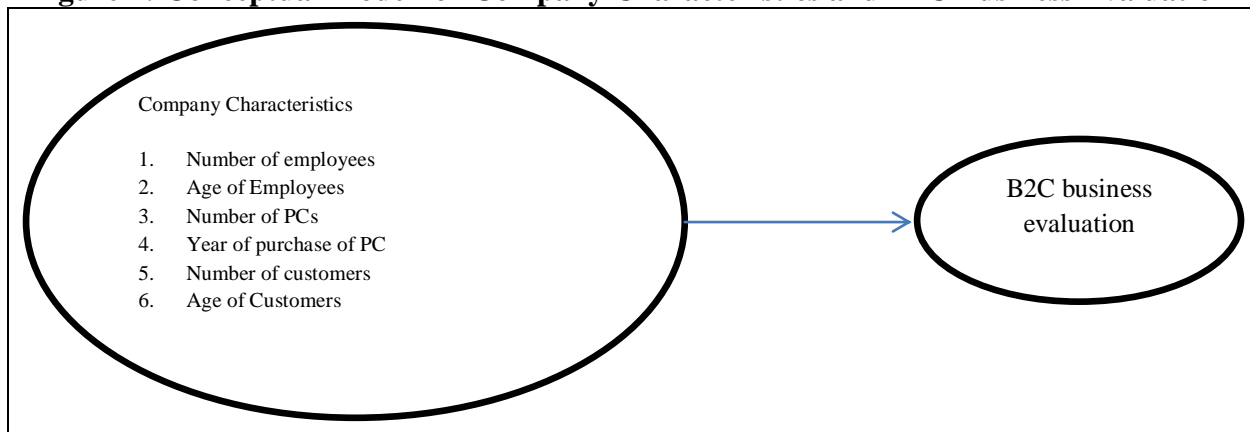
Review of Literature

This study has reviewed numbers of literatures. Few of them are stated in the following literature section. Najafi (2014) studied about electronic trust readiness evaluation on B2C e-commerce companies. In this research, researcher has adopted various definitions for the concepts of electronic readiness. Researcher has selected an appropriate model. The extent of e-trust readiness of 12 e-commerce companies that are active in the area of online sales of goods and services was evaluated and assessed. Josefine and Emma (2011) evaluated the attractiveness of the B2C e-commerce market in Dar es Salaam. This study has performed a qualitative study in Dar es Salaam, consisting of focus groups with consumers and interviews with consumers and existing e-commerce companies. To complement the primary data, researchers have collected secondary data. From this study, researchers concluded that the level of attractiveness of the market depends on if the macro, meso or micro perspective is evaluated. The overall conclusion was though that the current macro conditions decrease the attractiveness, as do the characteristics of the target customer segments. Rayed (2008) modeled CSFs of B2C e-commerce systems using the enterprise architecture approach. Study considered that CSFs should be considered comprehensively and expanded to all parties concerned to create and provide the electronic service and ensure that the CSFs are satisfied. In order to give an organized and inclusive view of the CSFs, researchers have found an enterprise architecture framework in this study. There reviews of literatures helped to derive the factors such as employees, PCs (technological equipment) and customers for company characteristics. Degree of B2C business evaluation is evaluated in yes or no dichotomous measurement.

Conceptual Model

Review of literature helped to derive the following conceptual model for company characteristics and degree of B2C evaluation as exhibited in Figure 1.

Figure 1: Conceptual Model for Company Characteristics and B2C Business Evaluation



Source: Literature Review

Methodology

Geographical scope of the study

Researcher conducts this study within the geographical scope of Ampara Coastal Belt (ACB) from Maruthamunai to Pottuvil. All the B2C business such as communications, air-line ticketing centres, computer centres, shops using computers, wholesales outlets using computers, textiles using computers that were treated as “B2C business” are considered in this study.

Population and Sample

Population refers to all the B2C businesses within the geographical scope of Ampara Coastal Belt (ACB) from Maruthamunai to Pottuvil. Researcher considered 72 B2C businesses as sample size in this study.

Data Collection

Company characteristics are characterized into number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers. Similarly, degree of B2C business is evaluated by dichotomous “Yes” or “No” questions. Researcher collected data by a simple questionnaire that consisted of the above questions. Respondents were the owners of B2C businesses.

Data Analysis

In this study, researcher used SPSS for analyzing data. Data analysis technique was discriminant analysis.

Results and Discussion of Findings

Group Statistics

There are 2 groups such as high degree of evaluation involvement (1) and low degree of evaluation involvement (2). There are 3 employees in firms. Youngsters (age equals 26) are working in these firms. Firms have an average of 3 PCs in their organisations. Organisations have an average of 24 customers (regular) in their organisations. Youngsters (age below 25) are coming to organisations. These 2 groups’ means and standard deviations for number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers are tabulated in Table 1.

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Table 1: Group Statistics

Degree of evaluation involvement		Mean	Std. Deviation
1	Number of employees	2.94	.772
	Age of Employees	26.00	4.960
	Number of PCs	2.61	.761
	Year of purchase of PC	3.13	.619
	Number of customers	24.35	13.114
	Age of Customers	23.71	3.100
2	Number of employees	3.05	.865
	Age of Employees	25.12	5.134
	Number of PCs	2.37	.488
	Year of purchase of PC	2.90	.768
	Number of customers	23.71	6.551
	Age of Customers	18.68	.934
Total	Number of employees	3.00	.822
	Age of Employees	25.50	5.043
	Number of PCs	2.47	.627
	Year of purchase of PC	3.00	.712
	Number of customers	23.99	9.846
	Age of Customers	20.85	3.292

Tests of Equality of Group Means

Tests of Equality of Group Means are tested by Wilks' Lambda and Significance of F statistics. Wilks' Lambda refers to the ratio of SS within (SS error) to SS total. Value of Wilks' Lambda varies between 0 to 1. The value closer to 1 refers to group means do not seem to be different whereas the value closer to 0 refers to group means seem to be different. Individual values for Wilks' Lambda for independent variables ranges between 0.420 to 0.999. Similarly, F statistics for these independent variables have been tabulated in Table 2. Df 1 and df 2 for these independent variables are 1 and 70 respectively. Few variables (number of PCs and age of customers) represent significant values whereas others not. Wilks' Lambda and Significance of F statistics are tabulated in table 2.

Table 2: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Numberofemployees	.995	.332	1	70	.566
AgeofEmployees	.992	.532	1	70	.468
NumberofPCs	.961	2.807	1	70	.098
YearofpurchaseofPC	.975	1.808	1	70	.183
Numberofcustomers	.999	.075	1	70	.785
AgeofCustomers	.420	96.589	1	70	.000

Pooled Within-Groups Matrices

Pooled Within-Groups Matrices is composed of Pooled Within-Groups Correlation for variables. Pooled Within-Groups Matrices are calculated by averaging the separate covariance matrices for all the groups. In this study, number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers are independent

variables. Separate co-variances are found for these independent variables. Pooled within group correlations for these independent variables are low. This refers to that there is unlikely for multi-collinearity problem. Pooled Within-Groups Matrices is tabulated in Table 3.

Table 3: Pooled Within-Groups Matrices

		Number of employees	Age of Employees	Number of PCs	Year of purchase of PC	Number of customers	Age of Customers
Correlation	Number of employees	1.000					
	Age of Employees	.071	1.000				
	Number of PCs	-.126	.106	1.000			
	Year of purchase of PC	.890	-.054	-.195	1.000		
	Number of customers	-.111	-.356	.288	-.154	1.000	
	Age of Customers	.008	-.070	-.287	.102	.047	1.000

Summary of Canonical Discriminant Functions

Summary of Canonical Discriminant Functions are based on eigen values, Wilks' Lambda, Standardized Canonical Discriminant Function Coefficients and structure matrix.

Eigenvalue

Eigen value for this function is 1.851. Eigenvalues is the ratio between- the group to within the group sum of squared. The larger eigenvalue means superior function. In this study, eigenvalue is larger which means function is superior. The single function represents 100% of the variation. Value of canonical correlation is 0.808. Square of this canonical correlation is 0.6528. Independent variables such as number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers explain around 65% of the variation onevaluation involvement of B2C e- business. Eigenvalues are tabulated in Table 4.

Table 4: Eigenvalues

Function	Eigen value	% of Variance	Cumulative %	Canonical Correlation
1	1.851 ^a	100.0	100.0	.806

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Value of Wilks' Lambda is 0.351 which closes to zero. It refers to that means of 2 groups [group 1 - evaluation involvement of B2C e- business and group 2 - evaluation uninvolved of B2C e- business are different. Wilks' Lambda is tabulated in Table 5.

Table 5: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.351	70.204	6	.000

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Hypothesis Development

- The following null and alternative hypotheses are developed.
- Null hypothesis: Group means are not different.
- Alternative hypothesis: Group means are different.

In this study, significance level is estimated on the basis of chi- square which is significant. Significant chi-square refers to that null hypothesis is rejected and alternative hypothesis is accepted. Accepting alternative hypothesis refers to that group means are different.

Standardized Canonical Discriminant Function Coefficients

Standardized Canonical Discriminant Function Coefficients for all independent variables are tabulated in Table 6. The higher values of Standardized Canonical Discriminant Function Coefficients have higher discriminating power of the function. The lower values of Standardized Canonical Discriminant Function Coefficients have lower discriminating power of the function. However, it is necessary to consider structure matrix in interpreting these values. Standardized Canonical Discriminant Function Coefficients are tabulated in Table 6.

Table 6: Standardized Canonical Discriminant Function Coefficients

	Function
	1
Number of employees	-.538
Age of Employees	.120
Number of PCs	.481
Year of purchase of PC	.587
Number of customers	-.086
Age of Customers	.958

Discriminant Analysis Model

Discriminant Function Coefficients in Standardized Canonical Discriminant Function Coefficients are used to find out discriminant score. Discriminant Analysis Model is depicted in Model.

$$D = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 \dots \dots \dots \text{Eq. 1}$$

b0 to b6 are Discriminant Function Coefficients in Standardized Canonical Discriminant Function Coefficients. In this study, there is no b0. But, there are b1 to b6. Thus, Discriminant Analysis Model becomes $D = b_1\text{Number of Employees} + b_2\text{Age of Employees} + b_3\text{Number of PCs} + b_4\text{Year of Purchase of PCs} + b_5\text{Number of Customers} + b_6\text{Age of Customers}$.

$$D = -.538 * \text{Number of Employees} + .120 * \text{Age of Employees} + .481 * \text{Number of PCs} + .587 * \text{Year of Purchase of PCs} + -.086 * \text{Number of Customers} + .958 * \text{Age of Customers} \dots \dots \dots \text{Eq. 2}$$

Say, there are 2 employees with the age of 20 and 2 PCc which have 5 years old. There are 2 customers with 18 year old.

$$D = -.538 * 2 + .120 * 20 + .481 * 2 + .587 * 5 + -.086 * 2 + .958 * 18; D = 1.076 + 2.4 + 0.962 + 2.935 + 0.172 + 17.244; D = 24.789$$

Structure Matrix

Structure Matrix has structure correlation that refers to simple correlations between the predictors and the discriminant function. Structure matrix represents structure correlation in descending order. These simple correlations between each predictor and the discriminating function represent that variance that the predictor shares with the function. Variables with the greater structural correlation share more variance with the function whereas variables with the lower structural correlation share low variance with the function. Structure matrix is tabulated in table 7.

Table 7: Structure Matrix

	Function
	1
Age of Customers	.863
Number of PCs	.147
Year of purchase of PC	.118
Age of Employees	.064
Number of employees	-.051
Number of customers	.024

Centroids

Centroid is the mean values for the discriminating scores for a particular group. Means for a group on all functions are group centroids. Values for functions at group centroids are tabulated in table 8. Group 1 (Evaluation involvement) has a positive group centroid of 1.543 whereas group 2 (Evaluation uninvolvement) has a negative group centroid of -1.167. Both groups have similar positive and negative group centroids. Most of the predictors have positive values of coefficient except number of employees and number of customers. Age of customers, number of PCs and year of purchase of PC have higher structure correlation. Thus, these three independent variables explain higher variation over evaluation involvement of B2C e- business. Group Centroids are tabulated in Functions at Group Centroids in Table 8.

Table 8: Functions at Group Centroids

Degree of evaluation involvement	Function
	1
1	1.543
2	-1.167
Unstandardized canonical discriminant functions evaluated at group means	

Conclusion

In this research, researcher has set an objective of knowing variation of degree of B2C evaluation in terms of company characteristics. In other words, researcher wanted to know about higher degree of B2C evaluation (group 01) and low degree of B2C evaluation (group 02) differ in terms of number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers. Results of group statistics such as group mean and group standard deviation for all independent variables reveal that there are variations. Tests of equality of group means are tested by Wilks' Lambda and significance of F statistics. Individual Wilk's Lambda values for all independent variables range between 0.420 to 0.999. F statistics of

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few independent variables such as number of PCs and age of customers are significant. Pooled within group correlations for these independent variables are low. This refers to that there is unlikely for multi-co linearity problem. Result summary of canonical discriminant functions are based on eigenvalues, Wilks' Lambda, Standardized Canonical Discriminant Function Coefficients and structure matrix. Result of Eigenvalue is higher and explains superior function. Since value of canonical correlation is 0.808 and square of this canonical correlation is 0.6528. This refers to that independent variables such as number of employees, age of employees, number of PCs, year of purchase of PC, number of customers and age of customers explain around 65% of the variation on evaluation of B2C e- business. Wilks' Lambda for the function is 0.351 which closes to zero. It refers to that means of 2 groups [group 1 –higher degree of evaluation of B2C e- business and group 2 –lower degree of evaluation of B2C e- business are different.

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