

Journal of Business and Administrative Studies (JBAS)

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St. Mary's University (SMU) is one of the leading private higher education institutions spearheading the dissemination of knowledge in the country. Over the past ten years, **SMU** has achieved remarkable progresses as well as successes in the transmission of knowledge.

Journal of Business and Administrative Studies (JBAS) is a peer-reviewed bi-annual journal published by St. Mary's University and dedicated to the promotion and production of knowledge through the scientific methods of

enquiry to achieve independent analysis as well as collection, processing and interpretation of data.

Cognizant of the complementary functions of transmission of knowledge (through teaching) and the conduct of scholarly inquiry (through research), SMU has aggressively been promoting publications of journals and conducting conferences for well over a decade. On one hand, while SMU recognizes that its faculty staff, academics and practitioners in the country possess a wealth of untapped scholarly and research potential. On the other hand, we believe that this immense potential has not been realized due partly to lack of resources and partly to the absence of a reliable outlet (i.e. journals). This concern has prompted the academic leadership at SMU to launch JBAS.

JBAS shall hopefully fill the vacuum created by the absence of outlets in the realm of business, economics and administrative studies in the country. The purpose of this Journal is to provide practitioners and scholars with a forum through which they would get opportunities to publish their research based debate as well as discourse in the fields intimated. Equally important, it shall offer insight into developments in the fields bringing Ethiopian realities under purview.

Contributors shall thus come from a broad range of fields and disciplines seeking to reflect on the theoretical and practical developments in the areas of accounting and finance, economics, management, marketing, public management as well as governance and related fields.

Smart Taxation (4Taxation): Effect of Fourth Industrial Revolution (4IR) on tax compliance in Rwanda

Daniel Twesige^{a*}, Faustin Gsheja^a, Uzziel Hategikimana^a, Raymond, Philippe Ndikubwimana^a, Yvette Mwiza^a and Innocent Hitayezu^a

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Abstract

The fourth industrial revolution (4IR) has led to the raise of smart taxation (taxation). Smart taxation has come up with different technological innovation that eases tax declaration, tax registration, tax payment interactions. These technological innovations in the tax system aim at enhancing tax compliance. The purpose of this study was to examine the effect of Smart taxation on the tax compliance in Rwanda taking RRA as the case study. Descriptive and explanatory research design were used. The study population comprised of 650 employees of RRA headquarter from which 284 samples were selected using Yamane's formula. Data were collected from both primary and secondary sources using questionnaire and document review methods. Data was analysed using both descriptive and factor analysis. The fitness of the model was tested using both absolute and incremental fitness tools. The findings from the survey revealed that there is a positive and strong correlation between smart taxation and tax compliance as evidenced by multiple R-square of 96. The researchers recommended that Training of the employees and taxpayers in new skills to be able to comfortably use the new technological innovation that comes along with the fourth industrial revolution. Continue educating the taxpayers about the aim of taxation and modes of taxation to enhance tax compliance since tax education influences tax compliance

Keywords: 4IR, 4Taxation, Tax compliance, Tax, Digitalization, information technology.

1. INTRODUCTION

The world is currently embracing the fourth industrial revolution (4IR) after the three previous industrial revolutions. Since the introduction of hydraulic and

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steam engine in first industrial revolution in Great Britain, there have been two major technological innovation in the world. The second revolution introduced the separation and assembly of products which helped in the mass production. The third industrial revolution introduced electronics and information technology and enhancement of the automation of the manufacturing process. The fourth industrial revolution (4IR) is a continuation of the third industrial revolution, and it is characterized by widespread application of cyber-physical systems in different business operations (Kapera, 2017).

The 4IR connects human bodies with high technology artificial systems. This revolution is driven by advanced information technology that allows every economic sector to transform the political and existing economic models. According to the Schwab (2017), the 4IR is formed by technologies such as artificial intelligence, machine learning and internet. These technologies are currently changing the way of doing business. Due to these technological advancements, taxpayers can register, declare and pay taxes online from their respective workstations with the support of technology. Avoiding physical presence at the tax offices reduces compliance cost to taxpayers and maximize revenue collections from the RRA perspective.

Previous studies Manyika et al. (2016), Moyo (2017), Gasoyi (2018) have indicated that acceleration of ICT innovation is opening the ways for Africa to integrate the global economy. Tan (2016) points out that a 20% investment in Information Communication Technology (ICT) contributes 1% to the GDP, 2.1% to increase in competitiveness, 2.2% increase in the innovation and 2.3% in productivity. The study also revealed that investment in ICT improves the quality of life, reduce the education gap and rise efficiency in the industrial production. This therefore implies that investment in ICT by development countries is no longer a choice to think about but a priority if the African

countries are to achieve the sustainable development goals and the African Agenda 2063.

Lucy (2018) underlines, this Revolution is believed to spearhead transformative changes through the fundamental interruption of virtually all sectors of the global economy. If the 4IR capabilities are integrated well into the society, this will provide an opportunity to restore the environment, address inequalities and combat poverty thereby directly contributing to Africa Agenda 2063 and SDG ambitions (Andrea, 2017). 4IR enables network of smart machines interconnection which help to create, analyse and share information. Marr (2018) recognizes 4IR as the smart way of doing business. He further argues that the connected technology is embedded in the company's assets and the people which market by the development of analytics, robotics cognitive technologies, AI, quantum computing and the internet of things. Information technological development is changing the way data and information is used and how to make companies more competitive in production.

The fourth industrial revolution has led to the newborn baby in the administration of taxes which is referred to as the Smart taxation (4Taxation). This has led to digitalization of the tax system whereby the taxpayer can be able to register, declare and pay taxes online (Visharesky and Chekina, 2018). According to Kovacev (2019), the technological innovations that comes with the fourth industrial revolution which include internet of things, machine learning, artificial intelligence, robots are creating a new platform for tax administration across the globe. The digitization of tax system has changed the mode of tax assessment, tax declaration, tax collection and payment and interaction between the taxpayer and the tax administrator.

Smart taxation is centered at minimizing revenue losses by detecting and preventing external tax evasion, that is smuggling, as well as all other forms of

evasion and thus enhance tax compliance. Hannah (2013) points out those technological innovations in the tax system will automatically lead to improvement in the tax compliance which will lead to increase in the tax revenues. The study further points that technological innovations help to combat several causes to revenue losses such as understatement of sales, omission of some transaction in recording, tax evasion and others to minimize the tax liability (Hannah, 2013). Governments today are under increasing pressure to improve the delivery of public services in cost-effective ways. To meet this challenge for example tax authorities are turning to smart taxation (Manyika et al., 2016). To date, the use of ICT is prominent in business and tax settings. Notably, tax authorities across the globe are continuing to use Smart in the tax administration (Mandola 2013; Gasoyi, 2018; Manyika *et al.*, 2016; Alm *et al.*, 2020)

Improving tax compliance is the main goal of every country (Alm *et al.* 2020). Taxpayers are obliged to declare and pay their taxes on time. According to Mandola (2013) “tax compliance involves both the truthful reporting of taxable income and the timely payment of tax dues”. To combat the noncompliance problem, several tax administrators have opted for the adoption of smart taxation. Various researchers have tried to conduct studies on the impact of technological innovations on the tax compliance using different research approaches and have come up with contradicting results regarding the effect of fourth industrial revolution on tax compliance.

Ndayisenga and Shukla (2016) analysed the effect of tax payment system and Electronic Billing Machine System (EBM) on the tax compliance. They found out that both electronic tax management system which consist of Tax Payment System, Mobile Tax Payment System and EBM System contributes to timely

tax payment and reduced operational cost for both RRA staffs and taxpayers. Their results are limited due to the fact they only considered two components of the fourth industrial innovation hence they are not conclusive on the effect of fourth industrial revolution on the tax compliance. Vishrevsky and Chekina (2018) analysed the impact of fourth industrial revolution on the tax system. The study reviewed literature and found out that introduction of robots that comes with the 4IR will lead to loss of jobs in the tax administration process. Their findings cannot be concluded in the current study since their study did not look the effect of fourth industrial revolution on the tax compliance.

Ayodeji (2014) examined the impact of electronic taxation on tax administration in Nigeria. The study used an exploratory research design. The findings indicated that electronic tax system influences tax administration. However, it is important to note that, this study did not consider the impact of electronic tax system on the tax compliance. Alm, *et al.* (2020) examined the new technological evolution on the tax compliance. The study found out that new technological innovations have positive correlation with tax compliance. Although this study incorporated all variables that are related to new technological innovations, the findings were based on literature review there is no statistical test of the significance of the variables on tax compliance.

Naibei, *et al.* (2011), examined the impact of Electronic Tax Registers on Value Added Tax (VAT) compliance among private business firms in Kisumu city, Kenya. The findings revealed that use of ETRs has got a significant positive impact on the VAT compliance in Kenya. However, the results of this finding cannot be concluded in Rwanda since it was based on one component of Smart taxation (4Taxation). In addition to that, the study only considered compliance in one type of tax, and ignored other types of taxes, therefore further studies

need to be conducted to analyse the effect of other components of (4Taxation) on the tax compliance in Rwanda.

As highlighted above, most of the previous researchers have tested the relationship between technological innovations using a literature review. There are limited studies that empirically tested impact of smart taxation on tax compliance. This study contributed to the existing literature in two ways. Firstly, the study empirically tested the effect of all technological innovations that come with fourth industrial revolution (Smart taxation) on tax compliance in the Rwandan context by collecting the data from the field. Secondly, the study contributed to methodological approach by employing a partial least square structural modeling. Previous studies that have empirically tested the relationship between technological innovation and tax compliance have used multiple regressions and have only tested two technological advancements. In this study factor analysis was carried out using a structural equation modeling (SEM) from where a model showing the effect of fourth industrial revolution (smart taxation) on tax compliance was constructed using a partial least square.

2. LITERATURE ON SMART TAX (4TAXATION) AND TAX COMPLIANCE

This section provides a theoretical and conceptual framework of the literature that relates to the study variables.

2.1 Theoretical review on tax compliance

The following two theories on tax compliance anchored this study.

1) Fiscal exchange theory

The theory recognizes the fact that public expenditure enhances tax compliance (Horn, 2013). The availability of a public good which is in relation to the tax paid increases tax compliance among the community. In this case the theory

recognizes that tax compliance is a function of public good provided by the government. Although the theory brings in some reality regarding the willingness of taxpayers to comply with the relevant tax laws, it is important to note that, this theory fails to recognize the fact that tax is non-*quid pro-quo*. Therefore, tax compliance cannot be enhanced by the amount of public goods provided by the government. In addition, theory fails to reorganize the importance of technological innovation in enhancing tax compliance. It is important to note that, the technological innovation that comes along with the fourth industrial revolution (Smart taxation) is changing the scope of tax compliance as evidenced from prior studies.

Steenburgen (2017) examined the importance of EBM in revenue collection in Ethiopia. Explanatory research design was used. Data was collected from the VAT registered taxpayers using questionnaire and documentation. Descriptive and inferential statistical analysis tools were used to analyse the data. The study found out that EBM has helped in combating tax evasion in Ethiopia. The researcher recommended tax authorities to create awareness to the people the importance of EBM.

Mudiaga & Igbekoyi (2019) examined the relationship between electronic taxation and tax compliance in the fast-food restaurants in Nigeria. Data was collected from both primary and secondary sources using questionnaire and on-desk research. Data was analysed using both descriptive and structural equation model and regression. The results indicated contradicting views in relation to the correlation between electronic tax system and tax compliance as some results indicated a positive correlation whereas other results indicated a negative correlation. It is important to note that, the results of this study cannot be uprooted and planted in the Rwandan context because of the following reasons; firstly the study was conducted in an economic environment that is

different from that of Rwanda; secondly, the study only looked at the perceived values of the electronic tax system on the side of customers but did not look at the extent to which the technology is helping to improve tax compliance. Therefore, more studies need to be carried out in this area.

Abera (2019) analysed the impact of electronic tax filing on the tax compliance in Ethiopia. The study used an explanatory research design where quantitative data was collected using questionnaire and documentation from both primary and secondary sources. The study used a population of 150 large taxpayers and the data were analysed using STATA software. The findings revealed a statistically significant correlation between electronic filing and tax compliance. The study only considered electronic filing which is composed of e-declaration and e-payment other components of smart taxation such EBM, Single electronic window system, custom mobile declaration and e-suggestions as being used in Rwanda currently were not considered in the study. Furthermore, the study ignored the impact of tax penalties, tax education, compliance risk management, intelligence, tax review, fraud investigations, tax appeals and tax audits as influencing factors on tax compliance. The study conducted Alm *et al.* (2020) show that tax education, tax penalties and tax audit have an influence on tax compliance

Odongo (2016) examined the effect of electronic tax filing systems on tax compliance among small and medium enterprises within Mombasa. Primary data was collected using a questionnaire. Data was analysed using a statistical regression using the constructs of electronic tax system. The findings indicated that electronic tax system has a strong correlation with tax compliance. However, it is important to note that this study only looked at two components of smart taxation which are e-declaration and e-payment. Other components

such EBM, Single electronic window, custom mobile declaration, and e-suggestions were ignored.

Utetiwabo, *et al.* (2018) analysed the effect of electronic tax system on tax compliance in Rwanda taking Nyarugenge as the case study. A correlational and descriptive research design was used. Primary data was collected using questionnaire and secondary data was collected using an on-desk research. The findings revealed a strong correlation between electronic tax and tax compliance. Like any of the above-mentioned prior studies, this study does show a factor analysis of smart taxation on the tax compliance. This study contributed to the existing knowledge by showing the factor analysis in relation to the tax compliance in Rwanda.

2) Social influences theory

This theory is based on the effect of individual behaviours on the tax compliance. The theory recognizes the fact that the behaviour of the taxpayer can be influenced through the social interaction with others (Samson, 2012). This therefore means that tax compliance can be enhanced by a social relationship among the taxpayers. Thus, tax compliance in this case is a function of individual reference group such as relatives, neighbours, and friends. However, the theory fails to recognize the fact that individual behaviour can either be influenced positively or negatively. If the individual behaviour is influenced positively towards tax compliance, then the theory is very applicable. However, if the individual behaviour is influenced negatively against tax compliance, then the theory may not be applicable. The negative behaviours of the taxpayers to comply with tax can be influenced through technological innovations, tax education and tax penalties which the theory fails to recognise.

Alm *et al.* (2020) conducted a study on the influence of tax compliance using a literature survey. The study found out that tax education and tax penalties have got a significant influence on the tax compliance. However, it is important to note that, the findings of this cannot be generalized in this study since it did not empirically test the significance of tax education and tax penalties on the tax compliance.

2.2 Smart Taxation (4Taxation) in Rwanda

Digitalization of the tax system has been a major concern of many countries. In August 2013, legislation was introduced in Rwanda, to assist firms' book-keeping, to level the playing field amongst all retailers, and, most importantly, to reduce tax evasion for value added tax (VAT). This legislation, announced in Ministerial Order 002/13/10, and the accompanying Commissioner General (CG) rules. All the reforms in Rwanda's tax base system were aimed at improving tax collections, administrations, and above all tax compliance. In a bid to improve tax compliance, Rwanda Revenue Authority (RRA) decided to opt for electronic tax management system which includes e-registration, e-declaration e-payment, , e-suggestions and electronic EBM order to improve on tax collection in the country. These tax reforms include the EBM, online declaration and payment and online tax registration.

In addition, the Government introduced electronic single window system in order to support the import and export. In addition, Rwanda Revenue Authority also developed a mobile web application that is used to declare goods at the customs. The custom mobile declaration is used by small taxpayers who import or export goods with a custom value less than five hundred thousand Rwandan Francs 500,000 RWF. Under this technology, the taxpayer registers his/her

credential with the tax administration which helps to notify the taxpayers on matters regarding custom declarations and payment.

Naibei *et al.* (2011) conducted a study to assess the reasons for the adoption of electronic fiscal system in Kenya. A descriptive research design was used in the study. Data was collected from both primary and secondary sources using questionnaire and documentation. Descriptive analytical tools were used to analyse the findings. The findings show that the system was introduced to reduce fraud in the invoice and to have easy access to information.

Muwonge (2011) examined the influence of electronic tax filing systems on the tax compliance in Uganda. The study used both exploratory and explanatory research approaches. The study population included importers, customs agents and the tax officials. Data was collected from both primary and secondary sources using questionnaire and documentation. Descriptive and inferential data analysis tools were used to analyse the data. The findings show that electronic tax filing enhances tax compliance. The study only analysed electronic declaration and ignored other components that have come along with the fourth industrial revolution. Therefore, its findings cannot be generalized in assessing the effect of smart taxation and tax compliance in Rwanda.

2.3 Conceptual framework

This part shows the hypothesized relationship between the independent and the dependent variables.

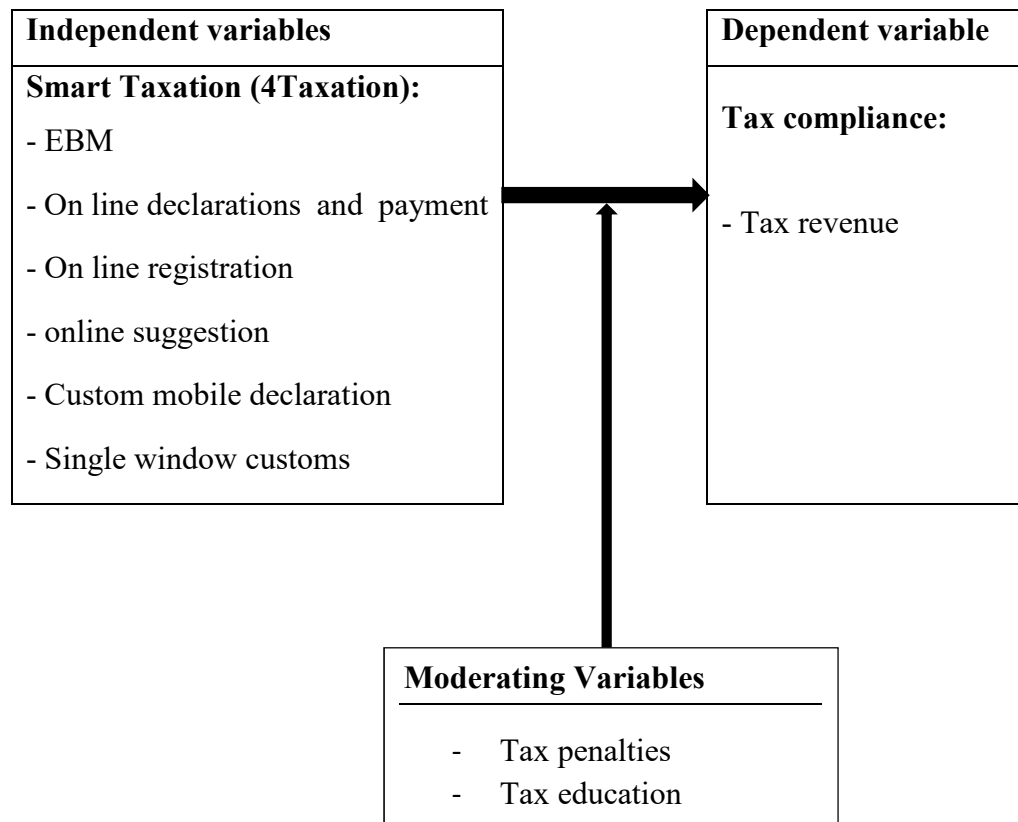


Figure 1: Conceptual framework

Source: Researchers (2020)

The alternative study hypothesis was that Smart taxation significantly affects tax compliance in Rwanda. The independent variable which is Smart taxation (4Taxation) was measured by the extent to which the electronic tools such as EBM, online declaration, online payment, online registrations, single electronic window system, electronic suggestions and custom mobile declaration affect

the tax compliance which was measured using tax revenue collected. However, for the relationship to exist, tax revenues and tax penalties must be put into consideration.

3. RESEARCH METHODOLOGY

3.1 Research design

This study used descriptive and causal research design. Descriptive research design was used to describe the extent to which smart taxation has affected tax compliance in Rwanda. Causal research design was used to establish the relationship between Smart taxation and tax compliance in Rwanda. Use of a combination of descriptive and causal approach has been recommended where one approach not fully test the hypotheses that researcher intends to test (Mugenda 2008, Kasomo, 2006 and Kothari 2006). Mudiaga and Igbekoyi (2019) used a combination approach to analyse the effect of electronic filing on tax compliance.

3.2 Population of the study and sampling

The target population for this study included employees of RRA headquarter. The total number of populations used in this study was 650 employees of RRA. These included employees from both the domestic and customs tax. The sample size was determined using the Yamane's (1967) formula. $n = \frac{N}{1+N(e)^2}$ The population was divided into two stratum which are domestic tax and customs tax. However, the respondent within each stratum was purposively selected.

Where n is the sample size, N is the population size and e is the level of precision.

$$n = \frac{650}{1 + 650(0.05)^2} = \frac{650}{2.625} = 247$$

3.3 Data collection and analysis

Data were collected from both primary and secondary sources. The primary data was collected using a questionnaire. Secondary data was collected from the published reports, books and website of Rwanda Revenue Authority. Use of secondary data in the research has been recommended by Saunders *et al.*, 2007, Gasoyi (2018) Manyika *et al.* (2016) where the study involves analysis of relationship between variables. Data were collected from both primary and secondary sources were captured using SPSS template and SPSS Amos from where the analysis was carried out. The SPSS was used to analyse the descriptive statistics Where SPSS Amos was used in factor analysis through the structural equation modelling (SEM). The descriptive statistics were analysed using frequencies, percentages, mean and standard deviation. Partial least squares structural equation modelling (SEM) was used to analyse the correlation between the independent variables (Smart taxation) and dependent variable (Total tax revenues) using the SPSS Amos a factor was considered significant when the P-value is less than 5%. This is in line with the study conducted by Mudiaga and Igbekoyi (2019) who used both descriptive and SEM in their research. The fitness of the model to predict correlation between the study variable was tested using Chi-square, comparative fit index (CFI), Normal Fit Index (NFI) and the Chi-square minimum degree of freedom (CMIN/df). The model was considered fit when the P-value of the Chi-square is less than 5%, when the CFI, and NFI are above 90% whereas when the CMIN/Df is below 5.

3.3.1 Analytical Model

The independent variable which smart taxation, will be measured by the extent to which current technological is influencing tax compliance. The current technological innovations used in tax administration in Rwanda include EBM,

Online Declaration (OD), Online Payment (OP), Online registration (OR), single Electronic Window system (SEW), Online Suggestions (OS) and Custom Mobile Declaration (CMD). Being an ordinal data, some transformation was made to ensure that the variables are normally distributed.

Smart taxation (ST) = f(LnEBM, LnOD, OP, LnOR, SEW, OS, CMD)

$$ST = \beta_0 + \beta_1LnEBM + \beta_2LnOD + \beta_3OP + \beta_4LnOR + \beta_5SEW + \beta_6OS + \beta_7CMD + \alpha \dots\dots\dots 1$$

The dependent variable which tax compliance (TC) will be measured using tax revenue. An increase in tax revenues (TR) shows an increase in tax compliance.

$$TR = f(ST)$$

$$TR = \beta_0 + \beta_1ST + \alpha \dots\dots\dots 2$$

Substituting equation 1 in two

$$TR = \beta_0 + \beta_1LnEBM + \beta_2LnOD + \beta_3OP + \beta_4LnOR + \beta_5SEW + \beta_6OS + \beta_7CMD + \alpha \dots\dots\dots 3$$

Alm et al. (2020) show that tax education (TE) and Tax Penalties (TP) have got a strong correlation with tax compliance. Therefore, the moderating variables will include tax education and tax penalties. Incorporating the moderating variables into equation 3

$$TR = \beta_0 + \beta_1LnEBM + \beta_2LnOD + \beta_3OP + \beta_4LnOR + \beta_5SEW + \beta_6OS + \beta_7CMD + \beta_8LnTE + \beta_8TP + \alpha \dots\dots\dots 4$$

4. RESULT AND DISCUSSION

This section presents the findings of the study, the analysis and interpretation of the results Findings were derived from the questionnaires to employees of RRA Gasabo branch. It attempts to analyze data generated from the study which include qualitative and quantitative information collected from the respondents.

Table 1: Extent to which Smart Taxation and other variables affect tax compliance

Variables	Not at all	Small extent	Average extent	High extent	Very high extent
	%	%	%	%	%
Electronic Billing Machine (EBM)		5.6	6.6	37.1	49.6
Online Declaration (OD)		5.0	7.6	28.0	59.4
Online Payment (OP)		1.8	15.8	22.7	59.7
Online Registration (OR)		10.2	20.4	30.2	39.1
Single Electronic Window (SEW)		4.0	11.3	29.6	55.1
Tax penalties	1.8	14.7	25.1	22.7	39.8
Tax education		2.7	7.8	24.7	64.9
E-suggestions	5.1	10.7	12.2	32.2	39.8
Custom mobile declaration		9.0	14.6	24.4	52.0

Source: Survey data (2020)

Table 1 shows the extent to which Smart taxation and other moderating variables affect tax compliance in Rwanda. The results from the survey show that 5.6% of the respondents indicated Electronic Billing Machine (EBM) affect tax compliance to small extent, 6.6% indicated average extent, and 37.1% indicated large extent whereas 49.6% indicated a very high extent. The findings from the survey revealed that EBM affect tax compliance to high extent. The findings further show that 5.0% of the respondents indicated that online declaration (OD) affect tax compliance to small extent, 7.6% indicated average extent whereas 28.0% and 59.4% indicated high and very high respectively. The findings regarding online payment (OP) show that 1.8% of the respondents indicated small extent, 15.8% indicated, 22.7% indicated high and 59.7% indicated very high.

Furthermore, the findings show that 10.2% of the respondents indicated small extent of the influence of online registration (OR) on tax compliance in Rwanda 20.4% indicated average extent whereas 30.2% and 39.1% indicated high and very high respectively. Regarding single electronic window, the findings show that 4.0% indicated very small extent, 11.3% indicated average extent whereas 29.6% and 55.1% indicated high and very high respectively. The results further show that 1.8% of respondents indicated tax penalties influences tax compliance to small extent, 14.7% indicated average extent whereas 22.7% and 39.8% indicated high and very high respectively. The results regarding how tax education influences tax compliance show that 2.7% of the respondents indicated very small, 7.8% indicated average extent whereas 24.7% and 64.9% indicated high and very high respectively. More still, the results show that 10.7% of the respondents indicated that e-suggestions influences tax compliances to small extent, 12.2% indicated average, 32.2% and 39.8% indicated high and very high respectively. The findings on the influence of custom mobile declaration on the tax compliance show that 9.0% of the respondents indicated small extent, 14.6% indicated average extent, 24.4% and 52.0% indicated high and very high extent respectively.

The results from the survey revealed that smart taxation influences tax compliance by high extent. The results conform to the findings from the previous studies. The study conducted by Mudiaga and Igbekoyi (2019), Utetiwabo et al. (2018) and Abera (2019) show that electronic tax system influences tax compliance. The further revealed that tax education and tax penalties influences tax compliance to a large extent. This is consistent with the findings from the study conducted by (Alm *et al.*, 2020).

Standardized Factor analysis

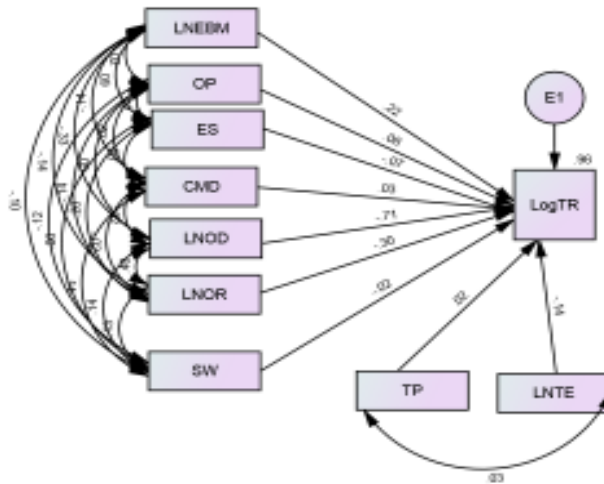


Figure 2: Standardized default model

Source: Survey data (2020)

Table 2: Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
LogTR <---	LNEBM	12.718	.825	15.418	***	par_1
LogTR <---	OP	.688	.124	5.553	***	par_2
LogTR <---	ES	-.606	.124	-4.884	***	par_3
LogTR <---	CMD	.215	.091	2.371	.018	par_4
LogTR <---	LNOD	-27.749	.610	-45.496	***	par_5
LogTR <---	LNOR	-14.152	.718	-19.715	***	par_6
LogTR <---	SW	-.172	.127	-1.359	.174	par_7
LogTR <---	TP	-.151	.123	1.230	.219	par_8
LogTR <---	LNTE	7.205	.706	-10.202	***	par_9

Source: Survey data (2020)

Figure 2 shows the path analysis of the study variables which are also reflected in the table 2. The results in table 2 show the significance of the correlation between the dependent and the independent variable. The results from the survey show that there is a statistical significance between EBM and tax revenues as reflected by a P-value less than 5%. This means that EBM influences tax compliance. This is inconsistent to the findings from the study conducted by Steenburgen (2017) and Abera (2019) who also found out that EBM positively influences tax compliance.

The results further show that there is a statistical significance between online payment (OP), e-suggestions (ES), custom mobile declaration (CMD), online declaration (OD) and online registration (OR) as reflected by the P-value which is less than 5%. The results conform to the findings from the previous studies. The study conducted by Mudiaga and Igbekoyi (2019), Odongo (2016), Naibei (2011), Gupta (2012) show that electronic tax system influences tax compliance. Similar findings are also seen in the study conducted by Amabali (2009) who show e-filing affects tax compliance. Furthermore, the results indicated a strong correlation between smart taxation and tax compliance as evidenced by a multiple R-square of 96%. This implies that of the variation in tax revenue, 96% is caused by the studied variable as indicated on figure 2. The findings concur with the findings from the previous studies. The study conducted by Utetiwabo *et al.* (2018) show a strong correlation between electronic tax system and tax compliance.

More to that, the findings from the survey indicated that single electronic window system and tax penalties do not significantly leads to tax compliance as evidenced by the P-value which is greater than 5%. This contradicts to the findings from the previous studies. The study conducted by Alm *et al* (2020) show that tax penalties and single electronic window system significantly affect

tax compliance. The findings further revealed that tax education significantly influences tax compliance as evidenced by the P-value of less than 5%. This is consistent with the findings from the study conducted by (Alm, *et al.*, 2020).

**Table 3: Standardized Regression Weights
(Group number 1 - Default model)**

	Estimate
LogTR <--- LNEBM	.223
LogTR <--- OP	.076
LogTR <--- ES	.068
LogTR <--- CMD	.033
LogTR <--- LNOD	-.711
LogTR <--- LNOR	-.301
LogTR <--- SW	-.019
LogTR <--- TP	-.016
LogTR <--- LNTE	.137

Source: Survey data (2020)

Table 3 shows the regression estimates of the study variables. The results from the survey show that when the use of LnEBM goes up by 1 standard deviation, the logTR goes up by 0.223 standard deviations. The results further show that when online payment goes up by 1 standard deviation, the logTR goes up by 0.076 standard deviations. When the E-suggestions go up by 1 standard deviation, logTR goes up by 0.068 standard deviations. Furthermore, when the custom mobile declaration goes up by 1 standard deviation, the logTR will go up by 0.033.

The results further show that when LNOD goes up by 1 standard deviation, logTR goes up by 0.711 standard deviations. When business supervision goes up by 1 standard deviation, logNPL goes down by 0.067 standard deviations. When LnOR goes up by 1 standard deviation, logTR goes down by 0.301 standard deviations. An increase in the SW by 1 standard deviation, logTR goes

down by 0.019 standard deviations. When tax penalties go up by 1 standard deviation, logTR goes down by 0.009 standard deviations. More to that, when the LnTE (tax education) goes up by 1 standard deviation, logTR goes down by 0.137 standard deviations. The results revealed a positive relationship between EBM, online payment (OP), online declaration (OD), online registration (OR), Tax education (TE) and customs mobile declaration and tax revenue. This implies that an increase in smart taxation as reflected by the above variables will lead to tax compliance. The results further indicated that there is a negative relationship between tax penalties, single electronic window and tax compliance. This implies an increase in tax penalties leads to a decrease in the tax compliance. The defaults model can be restated as below:

$$TR = 0.69 + 0.223LnEBM + 0.076OP + 0.068ES + 0.33CMD - 0.711LnOD - 0.33LnOR - 0.019SW - 0.16TP + 0.137LnTE$$

Unstandardized factor analysis

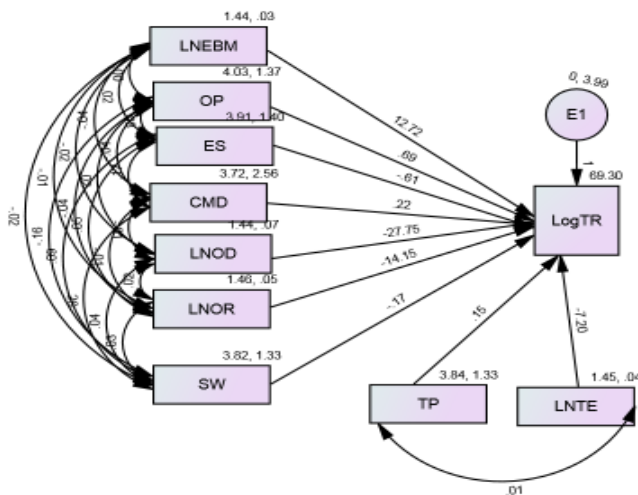


Figure 3: Unstandardized factor analysis

Source: Survey data (2020)

Table 4: Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
LNEBM	1.442	.009	165.283	***	par_31
OP	4.031	.055	73.023	***	par_32
ES	3.909	.056	70.044	***	par_33
CMD	3.716	.075	49.231	***	par_34
LNOD	1.442	.013	113.028	***	par_35
LNOR	1.458	.011	137.602	***	par_36
SW	3.818	.055	70.021	***	par_37
LNTE	1.449	.009	153.322	***	par_38
TP	3.840	.054	70.557	***	par_39

Source: Survey data (2020)

Figure 3 and Table 4 shows the values of unstandardized default model. Table 4 shows the mean and significance of the mean of the study variables. The results from the survey show that probability of getting critical ratios as large as 165.2, 73.0, 70.4, 49.0, 113.0, 137.6, 70.0, 153.3 and 70.5 of the studied independent variable in table 4 above in absolute value is less than 0.001. In other words, the mean of all variables studied is significantly different from zero at the 0.001 level (two-tailed). This, therefore, means that there is a low probability of getting large variable.

Model Fit Summary

Table 5: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	50	62.277	15	.000	4.152
Saturated model	65	.000	0		
Independence model	10	764.581	55	.000	13.901

Table 6: Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.919	.701	.937	.756	.933
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 5 and 6 tests the fitness of the model to predict the relationship between study variables. The test was made using the three measures of the model fitness which are absolute model fit, incremental model fit and parsimonious fit. The result on absolute fitness of the model was done using probability of Chi-square and root mean square error adjustment. The results show that the probability of Chi-square is 0.000 which is below 5% thus the model is fit to predict the relationship. The researchers also tested the incremental model fit using the comparative fit index (CFI) and the normal fit index (NFI). The results show both the CFI and NFI are above 0.9 hence indicating that the model is fit to predict the relationship between study variables. Another test that was conducted was parsimonious test. The results show that CMIN/DF is equal to 4.152 which is below 5.0 thus the model fit to predict the relationship between the study variables

5. CONCLUSION AND RECOMMENDATIONS

The findings established that smart taxation (4Taxation) contributes significantly to tax compliance in Rwanda. This was evidenced by a high correlation between Smart taxation (4Taxation) and tax compliance as measured by a multiple R-square of 96%. The results further established that

there is a positive and significant relationship between introduction of EBM and tax compliance. This, therefore, means that introduction of EBM has had a positive impact on tax compliance in Rwanda. Furthermore, the study established that there is significant positive relationship between online tax payment and tax compliance in Rwanda. The study further established that custom mobile declaration has a significant and positive influence on tax compliance in Rwanda. This means that introduction custom mobile declaration has eased the declaration by traders and thus enhancing tax compliance in Rwanda. The study also established that tax education contributes positively and significantly to tax compliance in Rwanda. This, therefore, means an increase in tax education improves tax compliance. The results further established that tax penalties do not significantly contributes to tax compliance in Rwanda as evidenced by a P-value greater than by 5% and there is a negative correlation between tax penalties and tax compliance in Rwanda. This means that increase in tax penalties leads to a decrease in tax compliance. Furthermore, the results established that there is a significant relationship between online declaration, online registration, online suggestions, and tax compliance in Rwanda as evidenced by a P-value that is less than 5%. However, the results contradicted from previous research by showing a negative relationship between online declaration, online registration, online suggestions, and tax compliance.

The researcher has come up with the following recommendations to support electronic tax management system and revenue collection in Rwanda

1. RRA management should keep on upgrading their tax technology to have an up to date system for effective service delivery since smart taxation positively affect tax compliance

2. Training of the employees and taxpayers in new skills to be able to comfortably use the new technological innovation that comes along with the fourth industrial revolution.
3. Continue educating the taxpayers about the aim of taxation and modes of taxation in to enhance tax compliance since tax education influences tax compliance
4. RRA should focus on other proactive measures to enhance voluntary tax compliance rather than increasing tax penalties as there is an inverse relationship between tax penalties and tax compliance in Rwanda.

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Factors Affecting Customer Based Brand Equity of Locally Produced Shoes Products-the Case of Kangaroo Shoes

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Abstract

The main objective of the study is to measure the determinants of the customer-based brand equity of Kangaroo Shoes, which is operating in Addis Ababa. The study is conducted based on Aaker's four-dimension customer-based brand equity model (brand awareness, brand associations, perceived quality and brand loyalty). An explanatory research design is applied in the research process. Primary data was collected from the customers of Kangaroo Shoe Factory using questionnaire; and to address the ultimate sample elements, convenience sampling technique is used. The collected data was analyzed using correlation analysis and multiple linear regressions. The result of the correlation analysis signifies that brand awareness, brand associations, perceived quality and brand loyalty have significant positive relationship with brand equity. The multiple linear regression analysis stipulated that brand awareness, brand associations, perceived quality and brand loyalty have significant positive impact to the brand equity of Kangaroo Shoes. However, the result revealed variations among the determinants in their level of influence to the brand equity. Accordingly, brand loyalty was found to have the strongest significant positive influence on the brand equity followed by perceived quality. Brand awareness and brand associations were also witnessed to have a statistically significant positive influence but quite in a lesser extent. This implied that Kangaroo Shoe Factory need to give due emphasis to brand loyalty and perceived quality in its endeavor to build strong brand equity and excel from the competition.

Keywords: *customer-based brand equity, brand equity, brand awareness, brand associations, perceived quality, brand loyalty*

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1. Introduction

1.1 Background of the Study

The world is changing radically in a fastest speed with the advancement of technologies, the revolution in information technology and the increasing rate of globalization. The changing realities in the world exhibit an ever-informed consumer base demanding higher quality products and services with customization and intense competition among local and foreign business firms leading to higher promotion costs, loss of customers and dwindling profit margins (Keller, 2013). Companies are responding to the changes implementing various techniques: shifting from functional teams to essential process, focusing on long term and profitable customers, launching electronic commerce to reach more customers, outsourcing different activities of the firm and emphasizing on building a strong brand image (Kotler & Keller, 2012).

As the world is becoming more competitive and dynamic, consumers have lots of choices with limited time to go around and make purchase decisions that calls for the need to build strong brands (Wheeler, 2013). Having a strong brand provides information about the source and quality of the product that enable customers and companies distinguish from other similar products in the market (Aaker, 1991). Moreover, building a strong brand facilitates purchasing decision making, reduces risk and maintains expectation of customers (Kotler and Keller, 2012).

In today's complex world where companies are in stiff competition to advance their market share, the concept of brand equity is becoming a key marketing instrument to navigate through the business environment (Lee and Leh, 2011). According to Keller (20132), Brand equity is an effect of the marketing of

products or services due to its brand that may not happen if that same product or service did not bear that brand name.

Brand equity provides three essential functions: acts as a magnet to attract new customers to the firm, uses as a reminder to customers about the organizations products and services and serves as customer's emotional tie to the company (Lemon, Rust and Zeitham, 2001). Brand equity is instrumental in influencing consumer preference and purchase intentions, profits and dividends, long-lasting competitive advantages and consumers' willingness to pay premium prices (Lee and Leh, 2011). In a bid to attract and retain demanding customers with a variety of options in the market, brand equity has been given due emphasis (Keller, 1993). Further, Keller (2013) argued that brand equity influences consumers through creating brand knowhow and shape their responses accordingly differentiating from those that may not use the brand name. As cited by Keller (2013), the American Marketing Association (2012) elaborated brand equity within the context of customers relying on the perspectives of customers linking to the beneficial characteristics of a brand and the positive outcome through its utilization.

Aaker (1991) emphasized that brand equity is the value a brand creates to the customer outlining five elements of assets: brand awareness, brand associations, perceived quality, brand loyalty and other proprietary assets. Brand strength and brand value are the major components of consumer-focused brand equity of which the former refers to the brand associations held by customers and the latter the gains that result as brand strength is gaining momentum to maximize current and future profits (Lassar, Mittal and Sharma, 1995).

Taking in to consideration the constant changes in the business world that offers lots of choices to customers, the concept of brand equity focuses on creating strong brands, satisfying the demands of customers, and enable businesses standout in the competition (Yoo and Donthu, 2001; Chowudhury, 2012). According to Fayrene and Lee (2011), brand equity is principally studied in two major perspectives: customer-based brand equity (CBBE) and financial-based brand equity. While customer-based brand equity focuses on measuring the customers' response to a given brand the financial-based brand equity attributes to the asset value of a brand (Keller, 1993). This study aims to identify the factors that affect brand equity in locally produced shoes products hence contributes to build their brand focusing on the major elements.

1.2 Statement of the Problem

The leather and footwear industry has a huge market potential in Ethiopia but faced with enormous challenges (Gezahegn, Daniel and Amare, 2014; Girum and Schaefer, 2013). The World Bank (2006) report indicated that the manufacturing sector and more specifically the leather and footwear industry in Ethiopia had suffered from quality and market problems that resulted in mismatch with customers' expectations. Footwear factories in Ethiopia faced critical problems of low productivity and weak relationship with customers' (Embassy of Japan, 2008). Despite the huge potential in the local market, the local shoes manufacturers failed to attract new customers and keep existing ones lacking proper customer engagement, desired comfort, esthetic value and durability (Mengestu, Gebremeskel and Hadush, 2013).

Lack of proper market-led strategy, less attention to consumers' preference of style and quality, and inconsistent customer relationship channels characterized the footwear sector in Ethiopia (Gezahegn et al., 2014; Mulugeta, 2016). Consumer's confidence in purchasing locally manufactured footwear brands

were low due to lack of product innovation, comfort, product design and product prestige (Yibeltal, 2018). The local footwear companies in Ethiopia were weak in creating reliable customer and supplier relationship linkages, improving manufacturing schemes, positioning in the marketplace through creating lasting impression on consumers and applying continuous product innovation to meet customers' expectations (Yibeltal, 2018).

Consumers in Ethiopia preferred to buy imported footwear products over the locally produced ones as the former had strong brand image associated with consumers such as superior design and quality, aesthetic value, comfort and durability highlighting the need to give due attention to the preferences of customers and add values to the footwear products for the latter (Mengestu et al., 2013). Kotler & Keller (2012) elaborated that it was inevitable for companies to provide customers with a pleasant experience with their products and services to build the anticipated brand knowledge. Strong brand equity leads to positive brand perception of the product, brand loyalty, less susceptibility to competition and, higher revenue.

This study was focused on the manufacturing sector, the footwear industry in Ethiopia with particular emphasis in Kangaroo Shoe Factory. The company has been one of the major producers and suppliers of shoes in Ethiopia since 1990. The company had undergone major expansion to reach more customers and satisfy their needs. However, according to internal reports of Kangaroo Shoe Factory, the company didn't have an established customer engagement mechanism that enabled it to gather proper feedback about its brand, identify the needs and demands of customers and respond accordingly.

The company had informal internal assessments that indicated low level of brand positioning of its products. There were indications that customers buy

Kangaroo Shoe brand products incidentally without putting it as their primary choice. Though the company produced a range of products taking in to consideration the current market need, customers perceived its products as a preference for adults given its former brand products that used to be popular with in that customer base. The company had a weak mechanism of segmenting customers and didn't position itself in the market as per the needs of customers. The company believed that its brands couldn't get the proper market positioning in the market hence affected its competitiveness. There was also a shared understanding in the company that it lagged behind in meeting customers' expectations taking in to account the availability of alternative products and subsequent competition in the market. Overall, the company didn't have a reliable assessment of the knowledge of customers about its brand, the value the brand creates with the customers and its brand positioning in the market.

In tandem with this, this study attempted to measure the customer-based brand equity of locally produced shoe products with a focus on Kangaroo Shoe Factory.

1.3 Research Questions

As highlighted in the research problem, this study attempted to answer the following questions:

- Is there a relationship between brand awareness and brand equity of Kangaroo Shoes?
- How do brand associations affect brand equity of Kangaroo Shoes?
- Is there a relationship between perceived quality and brand equity of Kangaroo Shoes?
- How does brand loyalty relate to the brand equity of Kangaroo Shoes?

1.4 Objectives of the Study

1.4.1 General objective

The general objective of this study was to measure the determinants of the customer-based brand equity of Kangaroo Shoes.

1.4.2 Specific objectives

- To examine the impact of brand awareness on brand equity.
- To evaluate the impact of brand associations on brand equity.
- To assess the impact of perceived quality on brand equity.
- To investigate the impact brand loyalty on brand equity.

1.5 Hypothesis

To answer the research questions and the objectives set, the following hypothesis was set based on the literatures reviewed on customer-based brand equity:

- H₀₁: Brand awareness may not have a significant positive effect on brand equity.
- H₀₂: Brand associations may not have a significant positive effect on brand equity.
- H₀₃: Perceived quality may not have a significant positive effect on brand equity
- H₀₄: Brand loyalty may not have a significant positive effect on brand equity

2. Review of Related Literature

There are various definitions and perspectives of brand equity. There is no clear cut and agreeable definition of brand equity among the scholars and practitioners in the area (Fayrene & Lee, 2011; Park and Srinivasan, 1994; Yoo & Donthu, 2001). According to Aaker (1991, p.26), brand equity is “a set of

brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and or that firm's customers." Brand equity is the consumer's perception of the overall superiority of a product carrying that brand name when compared to other brands and it includes five intuitive dimension of brand equity: performance, social image, value, trustworthiness and attachment (Lassar et al., 1995). Kotler and Keller (2012) put in perspective brand equity as the added value endowed to a product and services in which it is reflected in how consumers think, feel, and act with respect to the brand, as well as the prices, market share, and profitability that the brand commands for the firm.

The most comprehensive and widely accepted definition of brand equity was that of Aaker's (Srivastava and Shocker, 1991). Aaker (1991, p.15) defined brand equity as "a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers." Aaker (1991) further elaborated the major categories that impact the values of a brand that are name awareness, brand associations, perceived quality, brand loyalty and other proprietary brand assets highlighting their influences vary as per the situations on the ground.

Customer-based brand equity is considered the driving force of increased market share and profitability of the brand and is based on the market's perceptions. Customer based brand equity helps to understand the dimensions of brand equity, then investing to grow this intangible asset raises competitive barriers and drives brand wealth (Yoo and Donthu, 2000).

Aaker (1991) elucidated brand equity as a multidimensional concept which consists of brand awareness, brand association, perceived quality, brand

loyalty, and other propriety assets. He further explained each element that brand awareness has to do with the ability of a potential buyer to identify a brand among a product category. Brand association related with anything that is connected in a consumer's memory of a brand. Perceived quality deals with the consumer's perception of the brands total quality or superiority. Brand loyalty focuses on the level of devotion a consumer has to a brand and the other proprietary brand asset deals with patents and trademarks.

Keller (1993, p. 8) defined customer-based brand equity as "the differential effect of brand knowledge on consumer response to the marketing of the brand." Accordingly, marketers should take a broad view of marketing activity for a brand and recognize the various effects it has on knowledge and how changes in brand knowledge influence the outcome of the organizational output such as sells.

As there are various definitions of brand equity considering the perspectives, approaches and outcomes, there also different models of brand equity in the literature. In this study, it focuses on Aaker's (1991) and Keller's (1993) brand equity models. Further, the study delves more in studying the widely used customer-based brand equity model of Aaker (1991).

One of the most cited and applied brand equity model is that of Aaker's (1991) brand equity model. Aaker (1991) initially developed five brand equity determinants or dimensions that are crucial to build strong brands which are brand awareness, brand association, perceived quality, brand loyalty and other propriety assets such as trademarks. However, as the concept of brand equity has been gaining momentum overtime and more and more scholars base their thesis on Aaker's model, they refined it more and argued that the "other propriety assets" element tend to measure brand equity from the perspective of the firm rather than that of the customer as it focuses on the value of trademarks

and patents (Park and Srinivasan, 1994; Yoo & Donthu, 2001). And the first four dimensions are widely used to measure brand equity from the perspective of the customers (Barwise, 1993; Yoo & Donthu, 2001). Aaker's (1991) brand equity models are briefly highlighted below:

Brand awareness: Aaker (1991) stated brand awareness as the ability of a potential buyer to distinguish or memorize that a brand is a member of a certain product category. Brand awareness plays an important role in consumer decision-making by influencing which brands enter the consideration set, which of these brands are used as common sense, and the perception of quality (Macdonald and Sharp, 2000). While making purchase decisions the decision-making process the consumer retrieves, from long-term memory, those products and brands of which they are aware.

Brand associations: is the most accepted aspect of brand equity (Aaker, 1991). Associations represent the basis for purchase decision and for brand loyalty (Aaker, 1993). Brand associations consist of all brand-related thoughts, feelings, perceptions, images, experiences, beliefs, attitudes and is anything linked in memory to a brand (Kotler and Keller, 2012). Brand association is the core asset for building strong brand equity.

Perceived quality: refers to one of the core dimensions of customers-based brand equity as it relates to the willingness to pay a price premium, brand choice and brand purchase intention (Aaker, 1991). Perceived quality is the customer's judgment about a product's overall excellence or superiority that is different from objective quality (Aaker, 1991; Zeithaml 1988, pp. 3 and 4). Objective quality refers to the technical, measurable and verifiable nature of products/services, processes and quality controls. High objective quality does not necessarily contribute to brand equity and its impossible for consumers to make complete and correct judgments of the objective quality, they use quality

attributes that they associate with quality (Zeithaml 1988.). Perceived quality is thus formed to judge the overall quality of a product/service.

Brand loyalty: Aaker (1991, p.39) defines brand loyalty as “the attachment that a customer has to a brand”. Yoo and Donthu (2001) viewed brand loyalty as the tendency to be loyal to a brand and this can be exhibited by the intention of the consumer to buy the brand as a foremost choice. Oliver (1999) defines of brand loyalty as a deeply held commitment to re-buy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.

Other proprietary brand assets: denoted patents, trademarks and channel relationships which can make a company competitive in the market place. A trademark will protect brand equity from competitors who might want to offer similar or substitute products with highly related symbol or package. A patent can serve us a protective instrument for a company to keep its brands strong and remain intact in the purchase decisions of customers (Aaker, 1991).

Keller (1993) asserted that the most defining aspect in the process of brand equity for marketers is that making sure that individual customers have the knowledge about the intended product or service. Hence, studying brand equity from the perspective of customers has of paramount value as the financial value of the company highly depend on the preference of customers to that particular brand. Though, Keller (1993) shared the view of Aaker (1991) about the importance of brand equity looking it at the customer’s perspective, Keller (1993); Keller (2013) preferred to explain brand equity in two dimensions: brand awareness and brand image. He also stated that brand knowledge played

a key role that expanded customers' ability to have more information about brand awareness and brand image.

Keller (1993) further elaborated that customer-based brand equity occurs only when customers have a high level of awareness with the brand and hold some strong, unique and favorable brand associations in memory. Keller (1993) also viewed brand image as stakeholder's perceptions of and preferences for a brand that can be measured by the various types of brand associations held in memory.

Various researchers have developed different models of measuring brand equity and more specifically customer-based brand equity. However, the dominant models in measuring customer-based brand equity are the ones developed by Aaker (1991) and Keller (1993). Measuring customer-based brand equity implies how marketing programs of the brand creates a differential outcome in brand knowledge of the customers outlining three elements to build it, which are "differential effect", "brand knowledge", and "consumer response to marketing" (Keller, 1993). Keller (1993) further elaborated that there are two approaches in measuring customer-based brand equity: an indirect and a direct approach. The former approach tries to distinguish potential sources such as equity, whereas the latter approach focuses on consumer responses to different elements of the firm's marketing program. The importance of studying customer-based brand equity and developing its measures is that brand perceptions provide the precise positioning of the brand in the marketplace. Kim and Kim (2004) argued that robust and positive customer-based brand equity has a substantial effect on the value of the firms from the financial perspective.

Aaker (1991) one of the most cited and applied model in measuring customer-based brand equity describes brand equity as a multidimensional concept with the following elements: brand awareness, brand loyalty, perceived quality,

brand association, and other proprietary brand assets. However, consumer-based brand equity is best to be measured applying the four elements: brand awareness, brand association, brand loyalty, perceived quality (Washburn and Plank, 2002; Yoo, Donthu & Lee, 2000). Washburn and Plank (2002) further elaborated that the element of “other proprietary brand assets” wouldn’t be fit to measure consumer-based brand equity as it dwells upon in measuring brand equity from the financial perspective.

Hence, this study deploys Aaker’s customer-based brand equity measurement as it is the mostly widely used and applied using the four dimensions that are brand awareness, brand association, perceived quality and brand loyalty (Washburn and Plank, 2002; Yoo, Donthu& Lee, 2000).

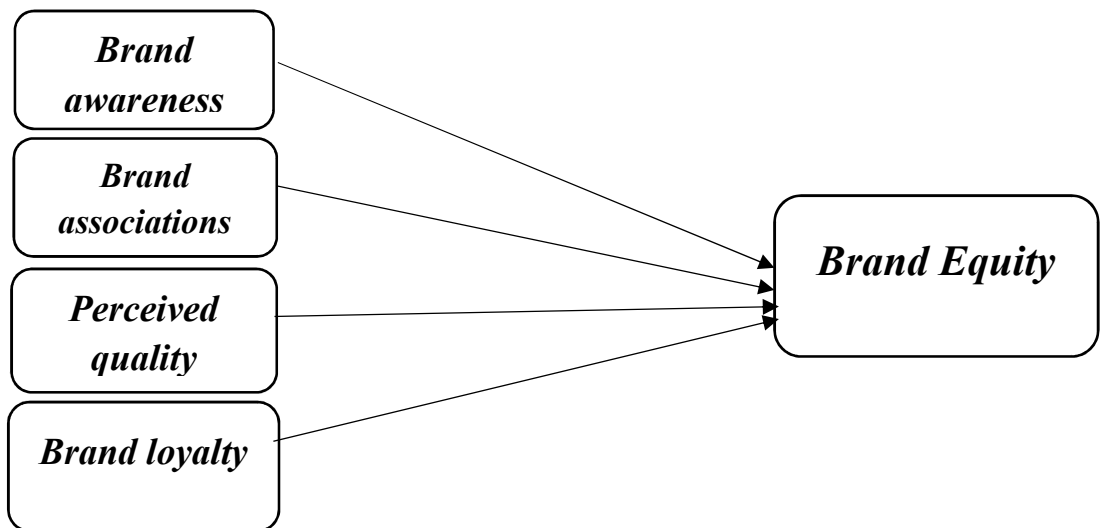


Figure 1: Conceptual framework of the study

Source: Aaker (1991) and Yoo and Donthu (2001)

3. Research Methodology

3.1 Research Approach

Research approach is mainly devising the strategies and the methods deployed to conduct a study that takes in to account the complex stages of formulating wide-ranging assumptions and comprehensive and thorough approaches of data collection, analysis and interpretation (Creswell, 2014). As this study deployed numeric data that enabled to answer the research questions and the objectives set, it followed quantitative research approach. Moreover, the study used a systematic collection of data and utilization of statistical models for analysis and interpretation that aligned with its objectives.

3.2 Research Design

Research design is the overall plan of a research dealing with research questions aligned with its purpose that results in descriptive, explanatory or exploratory type of research (Saunders, Lewis & Thornhill, 1997). Descriptive research describes the characteristics and/or behavior of a population that is being studied. Explanatory research emphasizes on establishing casual relationships between variables. Explanatory research is also taken as an extension of descriptive research in such a way that the study tries to answer why or how the situation under study is happening. While exploratory research is conducted when the subject matter under study is relatively new and attempts to seek better understanding of the existing problem.

In light of the research questions formulated and the objectives set, the purpose of this research is to measure the customer-based brand equity of Kangaroo Shoe Factory products. Hence, the research design used in this study is explanatory type. It deployed explanatory research as it dealt with the casual relationships that exist between customer-based brand equity determinants

(brand awareness, brand association, perceived quality and brand loyalty) and brand equity.

3.3 Target Population, Sampling Technique and Sample size

The target populations for this study were customers of Kangaroo Shoe Factory in Addis Ababa. The organization had 10 outlet stores in Addis Ababa. Thus, Sampling was drawn from the retail outlet stores of the organization in Addis Ababa. To avoid bias and ensure representativeness of the sample, equal chance is provided to all the ten stores. Hence, to identify the respondents from each store, the study deployed convenience sampling of which the participants were selected in order of their appearance in the stores as per their convenient accessibility (Kothari, 2004). In determining sample size of the customers, since the total number of the population for this study would be large, the following formula is used (Cochran, 1963):

$$n = \frac{z^2 pq}{e^2}$$

Where:

n= sample size

z= the standardized value

p= level of variability

q=1-p=level of homogeneity

e= the level of precision

Hence, applying the formula, the sample size with 95% confidence interval, .5 variance and confidence interval of +/-5% was set to be 385 respondents.

$$n = \frac{(1.96)^2 * 0.5 * 0.5}{(0.05)^2} = 385$$

3.4 Types of Data and Instruments of Data Collection

To achieve the objectives of this research primary source of data is utilized. Primary data was collected from customers of Kangaroo Shoe Factory through administering structured questionnaire. The questionnaire was adopted and customized for this study based on the multi-dimensional scale that measured customer-based brand equity of Yoo and Donthu (2001) as it is the most widely used and often accepted measure (Lee and Leh, 2011; Washburn and Plank, 2002). Hence, brand equity is conceptualized in accordance with Aaker's (1991) model of which the descriptions of the dimensions and the constructs are brand awareness, brand associations, perceived quality and brand loyalty which are considered as independent variables and overall brand equity as dependent variable.

3.4.1 Procedures of Data Collection

Since the target population of this study was customers of Kangaroo Shoe Factory, taking in to consideration their diverse social and economic background, the questionnaire was translated in to the local language, Amharic in a legally certified translation office with sufficient knowledge in the area. This was mainly done to enable respondents understand the concept and provide their true feelings. To ensure the quality of data collected, data collectors were hired, trained and strictly supervised while administering the questionnaires. The data was collected in a guided self-administered face to face interview throughout the ten outlet stores of the company.

3.5 Methods of Data Analysis

The data collected via questionnaires was analyzed with descriptive statistics using statistical package for social sciences (SPSS). Descriptive statistical tools such as frequencies and percentages were used in the data analysis to

summarize the demographic characteristic of respondents and to describe and interpret the demographic information of the respondents. In addition, the study deployed correlation analysis and multiple regression analysis to examine the relationships that exist between variables of the study which were of the independent variables: brand awareness, brand loyalty, perceived quality and brand associations against the overall brand equity and test the hypothesis set.

4. Results and Discussion

The purpose of this study was to measure the determinants of customer-based brand equity with a focus on Kangaroo Shoes. The study adopted and deployed standardized structured questionnaire to collect data developed based on Aaker's (1991) four brand equity models: brand awareness, brand associations, perceived quality and brand loyalty (Barwise, 1993; Yoo and Donthu, 2001; Washburn and Plunk, 2002). The demographic profiles of the respondents were analyzed and presented using descriptive statistics such as frequency, percentage and mean. The main part of the analysis that helped to achieve the objectives and test the hypothesis set were analyzed and presented using different inferential statistics such as Spearman correlation coefficient and multiple regression.

4.1 Correlation Analysis

To achieve the research objectives, this study deployed correlation analysis. Correlation analysis helped to show the existence of relationship, the direction of relationship as well as the strength of relationship between the dimensions of customer-based brand equity (brand awareness, brand associations, perceived quality and brand loyalty) and overall brand equity of Kangaroo Shoe brands in Addis Ababa. In interpreting the correlation analysis, this study applied the correlation classification adopted from Field (2005) to indicate the level of relationships between variables. Hence, Field (2005) outlined

correlation coefficient (r) in the following manner: a correlation of 0.1-0.29 rated weak, a correlation of 0.3-0.49 considered moderate and, a correlation of more than 0.5 could be taken as strong. Based on this, all the four customer-based brand equity dimensions and the overall brand equity dimension were incorporated in the correlation analysis. Moreover, the analysis was made on bivariate, a two-tailed statistical significance at the level of 95% significance at, $p < 0.01$. The table below outlined the correlation analysis of each customer-based brand equity dimensions and the overall brand equity dimensions:

Table 2: Spearman Correlation Analysis of Kangaroo Shoe brand customer-based Equity Determinants

Variables	Brand awareness	Brand associations	Perceived quality	Brand loyalty	Overall brand equity
Brand awareness	1				
Brand associations	.566** .000	1			
Perceived quality	.465** .000	.716** .000	1		
Brand loyalty	.470** .000	.645** .000	.754** .000	1	
Overall brand equity	.396** .000	.575** .000	.641** .000	.808** .000	1

**Correlation is significant at the 0.01 level (2-tailed).

Source: own survey (2019)

The above table elucidated the four customer-based brand equity determinants (brand awareness, brand associations, perceived quality and brand loyalty) were positively correlated with the brand equity with values in a range of 0.396 to 0.808 of which all the constructs were significant at $p < 0.01$ level. The correlation matrix pointed out that there was a moderate positive significant

relationship between brand awareness and overall brand equity ($r=0.396$, $p=.000<0.01$). Whereas, brand associations, perceived quality and brand loyalty exhibited a strong positive significant relationship with brand equity ($r=0.575$, $p=.000<0.01$; $r=0.641$, $p=.000<0.01$ and $r=0.808$, $p=.000<0.01$ respectively).

Moreover, it can be noted from the correlation matrix that the strongest positive significant relationships were shown between brand loyalty and overall brand equity and perceived quality and overall brand equity ($r=0.808$, $p=.000<0.01$ and $r=0.641$, $p=.000<0.01$) respectively. Overall, the correlation results denoted a statistically significant positive relationship between the customer-based brand equity determinants and the overall brand equity dimension.

4.2 Regression Analysis

To investigate the effect of the factors that shape the customer-based brand equity of Kangaroo Shoe brand with in the eyes of customers, this study used multiple linear regression. The essence of multiple linear regressions was that it helped to assess the coefficient of the linear equation, involving one or more independent variables that best predict the value of the dependent variables. Generally, this study used overall brand equity as dependent variable whereas the other four customer-based brand equity dimensions (brand awareness, brand associations, perceived quality and brand loyalty) were used as independent variables. The regression model summary result revealed that customer-based brand equity dimensions (independent variables) explained 65.5% of the variation in brand equity (dependent variables). This result asserted the existence of other variables (unexplained by 34.5%) which were not included in the model but have impact on the overall brand equity of Kangaroo Shoes brand in the study area.

Table 3: Estimation Results of Multiple Regression Analysis

Variables	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	
Constant	.635	.642		5.735***
Brand awareness	.179	.078	.108	2.285**
Brand association	.062	.023	.106	2.674***
Perceived quality	.211	.057	.209	3.711***
Brand loyalty	.826	.059	.737	8.693***

Dependent Variable: Overall brand equity; ***p<0.01, and **p<0.05

Source: own survey (2019)

The above table depicted that the result of the regression analysis of all the four independent variables which are brand awareness, brand associations, perceived quality and brand loyalty with the dependent variable (brand equity) predicted a positive contribution to customer-based brand equity. Standardized Beta coefficient is applied to measure the strength of each predictor variable that influenced the dependent variable. Moreover, it deploys significance level to identify the contributions of the independent variables towards the dependent variable.

Accordingly, the outcome of the regression analysis stipulated that the contributions of each of the determinants of customer-based brand equity varied to the overall customer-based brand equity of Kangaroo Shoe products. Thus, among the four dimensions of customer-based brand equity, brand loyalty contributed the highest with a beta value of 0.737. Whereas, perceived quality and brand awareness took second and third in their contribution with beta values of 0.209 and 0.108 respectively. According to this study, brand associations contributed positively to the overall brand equity but compared with the other determinants, it was the lowest with a beta value of 0.106.

Moreover, all the customer-based brand equity determinants were proved statistically significant. Accordingly, brand loyalty and perceived quality were statically significant ($p=0.000<0.05$) and brand associations and brand awareness were also statically significant ($p=0.008<0.05$ and $0.023<0.05$) respectively. The beta values and the significance result of the regression analysis of the customer-based brand equity determinants signified the positive effect of the brand equity dimensions on the overall brand equity of Kangaroo Shoe brand. Overall, the regression analysis results illustrated variations on the customer-based brand equity determinants contributions towards the customer-based brand equity of Kangaroo Shoe brand.

As illustrated in the regression analysis result, among the four customer-based brand equity determinants, brand loyalty was proved to be the most positive contributor variable to the overall brand equity of Kangaroo Shoe brand (β value of 0.737 and $p=0.000<0.05$). Perceived quality came in a second position contributing positively and statistically significant to the overall brand equity of Kangaroo Shoe brand (β value of 0.209 and $p=0.000<0.05$). Whereas, brand awareness and brand associations contributed the least positively compared with the other two dimensions but statistically significant (β value of 0.108 and $p=0.000<0.023$ and β value of 0.106 and $p=0.000<0.008$) respectively. Thus, from the above analysis, it could be deduced that brand loyalty and perceived quality contributed the most and affecting positively the customer-based brand equity of Kangaroo Shoe brand. In addition to this, brand awareness and brand associations also contributed to the customer-based brand equity of Kangaroo Shoe positively but in a lesser degree.

4.3 Validation of the Proposed Hypothesis

Table 4: Hypothesis testing as per the multiple regression analysis result

Hypothesis	Result
H₀₁ : Brand awareness may not have a significant positive impact on brand equity.	H ₀ rejected
H₀₂ : Brand associations may not have a significant positive impact on brand equity.	H ₀ rejected
H₀₃ : Perceived quality may not have a significant positive impact on brand equity.	H ₀ rejected
H₀₄ : Brand loyalty may not have a significant positive impact on brand equity.	H ₀ rejected

Source: own survey (2019)

As depicted in the table, all the customer-based brand equity determinants (brand loyalty, perceived quality, brand awareness and brand associations) were proved to have a significant positive contribution to the customer-based brand equity of Kangaroo shoe brand. This signified that all the hypothesis set were rejected and found out in line with the theoretical assumptions and empirical evidences. However, the regression results stipulated variations on the degree of the contributions of each variable that suggested Kangaroo Shoe might need to prioritize among the variables that contributed the most while devising its branding strategy.

According to the findings of the correlation analysis, all the brand equity determinants (brand awareness, brand associations, perceived quality and brand loyalty) had a positive and significant relationship with customer-based brand equity. Among the four customer-based brand equity determinants, brand loyalty had shown the strongest positive significant correlation with brand

equity ($r=0.808$, $p=.000<0.0$). This was in line with the arguments of Aaker (1991) that stated brand loyalty is the core component of brand equity determinants that make customers attached to a certain product.

Delving in to the results of the regression analysis, it was found out that all the four customer-based brand equity determinants (brand loyalty, perceived quality, brand awareness and brand associations) contributed positively and statistically significant to brand equity of Kangaroo Shoe. However, their contributions vary across variables. Accordingly, among the four customer-based brand equity dimensions, brand loyalty contributed the most followed by perceived quality to brand equity. From this, it can be deduced that brand loyalty was the most contributing factor that have a positive significant contribution to brand equity. This result was consistent with the views of Aaker (1991) that stated brand loyalty is the core component of brand equity that makes customers attached to a certain products or service. Moreover, the result was also aligned with the works of Abad (2012) and Tesfaye (2017) who found out that brand loyalty showed a strong significant positive impact on customer-based brand equity in the financial sector and the selected television channels in Addis Ababa. Perceived quality was also a major contributing factor that have a strong positive significance to the brand equity of Kangaroo Shoes. This finding was in line with the work of Tesfaye (2017) that stipulated perceived quality affected significantly the brand equity of television channels. Moreover, brand associations and brand awareness had a positive significant contribution to the customer-based brand equity of Kangaroo Shoes, yet their contributions were quite lesser compared with brand loyalty and perceived quality. This result was consistent with the works of Abad (2012) and Bezawit (2014) that showed the same result in the financial sector and the Ethiopian Airlines in their attempt to study the brand equity determinants.

5. Conclusion and Recommendations

This study indicated that brand loyalty, perceived quality, brand associations and brand awareness contributed positively and significantly to the customer-based brand equity of Kangaroo Shoe. However, there witnessed variations among the variables. Accordingly, brand loyalty was the most positively contributing and statistically significant factor to the customer-based equity of Kangaroo Shoe followed by perceived quality. Moreover, brand awareness and brand associations were also contributing positively and statically significant but in a lesser extent compared with brand loyalty and perceived quality. Overall, it can be deduced from the results that brand loyalty contributed the most and affect customer's perception in shaping the brand equity of Kangaroo Shoes. Also, perceived quality followed brand loyalty in contributing to the brand equity of Kangaroo Shoes.

- Kangaroo Shoe Factory need to focus on building brand loyalty and perceived quality, the determinants that affect the most its brand equity, while devising its branding strategy.
- The company has to introduce loyalty reward packages or programs that encourage current customers to buy its products repetitively and decrease the number of possible switchers as it might increase the switching cost from that of competitors.
- Kangaroo Shoe Factory need to identify its target customers and work on its market positioning segmenting customers in different ways such as income level, age level, gender and other mechanisms to nurture its brand awareness and brand associations.

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The Determinants of Choice of Transportation Mode in Addis Ababa, Ethiopia

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Abstract

This study is designed to investigate the determinants of choice of transport mode in Addis Ababa. It adopted a cross-sectional research design and collected quantitative data from 141 respondents that used different transport modes. A multinomial logit model was adopted to identify the determinants of choice of transport modes. About 54% of the city's dwellers used taxi (popularly known as 'Blue minibus taxi'), and 25% of them used buses. The proportion of dwellers who chose to use train transport method and private cars are equal (10.5% each). Blue minibus taxi are the dominant mode of transport used in the city of Addis Ababa. The results of the multinomial logit model revealed that traveler's characteristics (age, family size, income, occupation, and educational level) and mode of transport characteristics (travel time, travel cost, travel distance, comfort, accessibility, safety, and security) were found to be statistically significant in determining choice of a transport mode. The city government of Addis Ababa should therefore take into account the significant correlates in deciding to improve the transportation system of the City..

Keywords: *Transport mode, Multinomial logit, Minibus blue taxi, Buses, Private cars, Train transport, Addis Ababa, Ethiopia*

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1. INTRODUCTION

1.1 Background of the study

Transport plays a vital role in the development of the modern era as an integral part of the socioeconomic and political structure of the country. Transport infrastructure, and traffic management should involve the socioeconomic and physical integration of the city (Mulu, 2015). Transportation is one of the basic sectors supporting people's daily activities. People conduct activities in different places due to biological needs, social obligations, and personal desires (Vilhelmson, 2007; Eriksson, 2009). The urbanization process increase substantially the demand for urban transport also increases. Urban transport has a great role in the transformation of society and facilities modernization at large (Mulu, 2015). Urban transport is usually accepted that cities are the engines of economic growth in most developing as well as developed countries. Essentially, urban transport can be viewed as the oil that prevents this engine from seizing up (ORAAMP, 2010)

People's activities become more complex and also increase people's move from place to place. In this case, peoples tend to choose and determine which travel mode the most suitable and fair cost for them to fulfill their needs. A few decades ago, the travel modes existed only in the small shape and number of vehicles ware build to accommodate people's movement, but now the travel modes also become parts of people's movement. Nowadays the travel modes are available starting from the cheapest to the most expensive one and also from the availability of the common service standard until the exclusive quality (Utami, 2010).

People are highly concerned with the choice of travel modes that are convenient and suitable for their trips (Joe et al, 2015). There are different modes of transportation and people can choose the mode to accomplish their needs. Now

the travel modes are becoming various aspects from the conventional models and peoples tend to choose the mode with concerning the comfort, security, vehicle in time, trip distance, time reliability, cost of the travel mode, etc. with the different accessibility of travel modes since the people have various opportunities to choose the mode (Eriksson, 2008).

The dominant mode of public transport in developing countries in road-based transport is the use of the conventional bus. It has wider social, economic, and environmental benefits. It is the best affordable for urban poor people (Wright et al, 1987). It needs less investment and feasibility economically for all groups and environmentally friendly systems. In Indonesia, using privately owned cars and motorcycles becomes the dominant choice in supporting people's daily activities. One of the main reasons to choose this mode of transportation is its easiness such as the car price now is cheaper and also there is a belief in society that owning a private car will increase the prestige of the people (Utami, 2010). Hence, investigating the determinants for the choice of the transport system in day to day activities to fulfill their needs and it has a strong relationship to the transport policy that is essential to design workable policy and strategy for suitable urban transport. Therefore this study intends to examine determinants for the choice of transport services in Addis Ababa.

1.2 Statement of the problem

Due to the ever-increasing population in the country and also in urban areas in particular as a result of immigration and natural growth, there is an increased demand for transportation in the city. Effective and available transport facilities are common problems in any metropolis where the movement of millions of people makes it a daily reality of modern living in Addis Ababa. Rapid urbanization and population growth have led to a rise in poverty and social inequality. Therefore, the demand for transport has increased faster than the city

can provide it and is creating health and safety risks, impeding economic development, and producing more greenhouse gas emissions (Meron, 2011). Even if there is a high demand for transport in Addis Ababa, people had a choice of a different mode of transportation such as buses, higher buses, railways, minibusses taxi, Ladas, and other small taxis that serve the millions of residents on a daily origin. The federal government has also introduced a new public transport service the so-called blue buses to serve not only the civil servants but also other clients. The existing public transport is of low quality and a limited number of buses and taxis. The majority of people choose a taxi for availability which is better than buses even if the price of a taxi is expensive and the belief in society to use taxis has risen the status of the people (Mintesnot and Takano, 2007).

Accordingly to Mintesnot and Takano (2007), mode of choice is affected by people's perception because perception is a significant role in the mode of choice and there are only two modes of public transportation which are bus and taxi was addressed by the study. The Perception responses of people have a ranking nature and the methods of analysis are ordered logit models with four ordered levels of perception on the three mode related-aspects (fare, convenience, and frequency) have a statistically significant influence on public transport mode choice. The study didn't include different mode transportation like a private car, train, and different buses, and also it didn't include some important variables such as comfortably, accessibility, prestige, safety, and security that affects the mode of transport choice in Addis Ababa. Unlike the previous model choice, this study is trying to fill the research gap by providing a detailed analysis of factors affecting the mode of transportation choice depending on socioeconomic characteristics, and mode of transport characteristics. Since transportation mode is vital for our country researching

this theme provides economic as well as a social contribution. The economic aspect includes ease of people's movement from one place to the other in which anyone could work in offices further away from home, secondly, time consumption will be minimized in which one could use time spent outside work for office purposes. Social contribution includes it facilitates communication and discussion with the people who use the same model.

In addition to the above mentioned, the study gives a contribution by identifying the potential determinants of household choice for the transportation system in Addis Ababa. It is important to identify the most commonly chosen transport mode in the city for a different activity. This finding may be quite useful for policymakers to better challenge commuters' choices and to define the appropriate urban mobility management actions and policies. Further, this research can serve as a reference material either to students or researchers who want to undertake further researches on the same or related topics in the future. Specifically, the study efforts to answer the following research questions:

- 1) Which transport mode is chosen by the majority of people in Addis Ababa?
- 2) What are the traveler's characteristics related factors determine the mode of transport choice in Addis Ababa?
- 3) What are the transport modes characteristics related factors determine the mode of transport choice in Addis Ababa?

This study examines the determinants of household choice for transportation services in Addis Ababa and the findings cannot be generalized to other cities and towns across the country even though they might experience similar challenges as Addis Ababa. The mode of choice in Addis Ababa for this study was based on the fact that it is the capital city of Ethiopia and one of the fastest-

growing cities. This research was observed the factors affecting people in choosing transportation means for a different activity and involves only land transportation modes which are a private car, bus, train, and minibus taxi. This research is limited to the head of the household because of time and financial constraints, it was impossible to research all family members. Another limitation of this study is the lack of local literature particularly on the mode of transportation choice in the Addis Ababa context.

2. Research Methodology

2.1 Research Approach and Design

For this study, a descriptive and causal research design was applied. In order to accomplish the proposed research concerning the objective and the nature of research questions of the study, quantitative data collection, and analytical techniques were employed. Therefore, the overall congregation of the study consists of quantitative. Quantitative data analysis is all about quantifying the relationship between the dependent and independent variables.

2.2 Population and Sampling

According to CSA (2007) report, the total population of Addis Ababa was 2,738,551 in 2007, out of which 1,305,387 are males and 1,434,164 are females. People are live in 10 sub-cities. Kolfe Keraniyo has the largest number of people with 428,895, followed by Yeka sub-city with 346,664, and Bole sub-city with 308,995. Akaki Kality sub-city has the least number of people with 181,280. About 662,728 households are in the city, among these 655,118 are conventional households¹, and 7,610 are unconventional households. Out

¹ Households that are classified as ‘conventional’ are those who have permanent addresses and can be traced easily. Those that are classified as ‘unconventional’ are without any permanent addresses to trace them in any survey.

of the total 655,118 conventional households, Kolfe Keraniyo has 97, 287 households, Yeka sub-city has 90, 195 households, and Addis Ketema sub-city have 52,063 households. Lideta sub-city has the least number of households which is 46, 206.

This study uses multiple-stage sampling to draw an appropriate sample household. In the first stage, due to the significant variation of owned private cars among the 10 sub-cities, the cities divide into two strata. The first group consists of Kolfe Keraniyo, Kirkos, Akaki Kality, Lideta, Arada, Addis Ketema, and Gulele and the second group consists of Yeka, Bole, and Nifaslak Lafto sub-cities. In the second stage, two sub-cities from group one and one sub cities from group two were selected randomly. Finally, from a total of 239,545 households, 156 samples were selected randomly. Yemane (1967) provides the following simplified formula. Accordingly, the required sample size at a 95 % confidence level with a degree of variability (the more homogenous a population the smallest sample size required to be, to obtain a given level of precision). Values are calculated according to Yamane’s formula the uppermost pair is for 5%, middle one for 8% and the lower one for 10% level of significance. For this study the level of precision equal to 8% is used to obtain a required sample that represents a true population.

$$n = \frac{N}{1+N(e^2)}$$

Where n= Sample size

N= Population Size

e= Level of precision considered as (8%)

$$n = \frac{239,545}{1+239,545(0.08^2)} = 156$$

Table 1: Sample households by sub-cities

Sub City	Total Households	Sample Households
Kolfe Keraniyo Sub City	97, 287	63
Yeka Sub City	90, 195	59
Addis Ketema Sub City	52,063	34
Total	239,545	156

2.3 Conceptual Framework

The conceptual framework is the blueprint of the research work that guides the researcher to conceptually understand the research and outline and operationalized the dependent and the independent variables so that the measurement, processing, analysis of the data, and interpretation of the result being easy and meaningful.

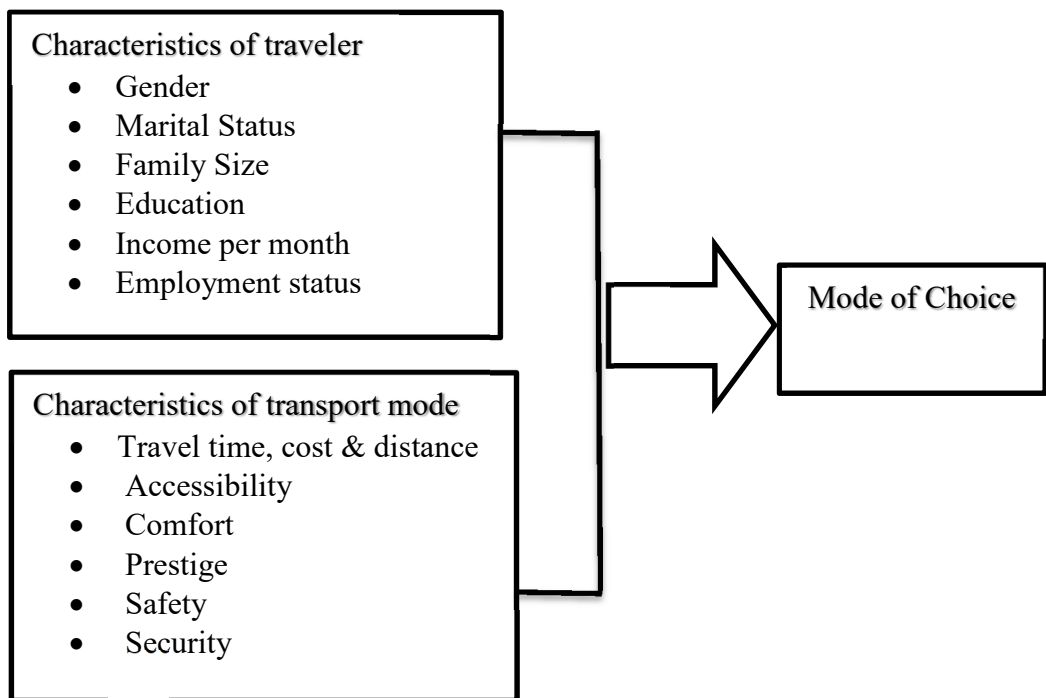


Figure 2.1: Conceptual framework for the study

Source: Author's construction based on literature (2020)

2.4 Method of Data Collection and Analysis

This research applies both primary and secondary data sources. The primary data needed to achieve the design object is obtained through structured questionnaires (both closed-ended and open-ended questions) and interviews with the participant are illustrates. A household survey is a typical method to collect primary data from the participant. A household survey was carried out through a face-to-face interview of the participant and enumerators. The secondary data source for this study is published and unpublished documents related to transport mode. Those are books, articles, journals, scientific reports; the minister of transport authority is considering being important to the study.

To achieve the objective of this study, both descriptive and econometric methods of data analysis were applied. Descriptive statistics such as frequency, percentage, and cross-tabulation were used to characterize the demographics of households in the study area. Econometric analyses were employed to identify factors that affect the mode of transportation choice at the household level by using a multinomial logit model.

According to Koppelman and Bhat (2006), the mathematical form of a discrete choice model is determined by the assumptions made regarding the error components of the utility function for each alternative. There are good theoretical and practical reasons for using the normal distribution for many modeling applications.

In this case, the MNP model may produce arbitrary parameter estimates within the tolerance of the estimation procedure (Keane, 1992; Alvarez and Nagler, 1998). A typical sample identification strategy is to include one alternative specific variable in each utility. While this often helps, this restriction does not guarantee convergence at a global optimum within the tolerance of the software.

However, in the case of choice models, the normal distribution assumption for error terms leads to the Multinomial Probit Model (MNP) which has some properties that make it difficult to use in choice analysis more than 2 alternatives. The mathematical structure of the Multinomial Logit Model (MNL) is given as choice probabilities of each alternative as a function of the systematic portion of the utility of all the alternatives. The general expression for the probability of choosing an alternative 'i' (i = 1, 2... J) From a set of J alternatives are:

$$\text{Pr (i)} = \frac{\exp(V_i)}{\sum_{j=1}^J \exp(V_j)}$$

Where Pr (i) is the probability of the decision-maker choosing alternative i and

V_j is the systematic component of the utility of alternative j.

2.5 Variable Definition and Hypothesis

Accessibility: In metropolitan areas where mass transit is available, it offers an attractive alternative to other means of commuting. The accessibility of transport mode depends on the development of transport planning. Some of the areas are covered by public transport because they are high-density areas as a result of good planning. But for the low-density area, the availability of public transport is less and the only mode is private motorized transport (Koslowsky, 1995).

Income: Lower-income countries tend to have the highest vehicle ownership and mileage growth rates, higher-income countries are experiencing low or negative growth (Litman, 2006) country like Ethiopia, people who are high income tend to use a car with a driver and do not use public transport but the middle and lower-income people, the only choice is public transportation such as bus, taxi, train, etc. as the main transport.

Travel time: According to Koslowsky (1995), direct negative effects of commuting are obvious and include hours lost from work and/or leisure activities. If the traveler can use other solutions to avoid congestion, they can reduce their hours lost from congestions.

Travel cost: Every single travel will need cost but the difference is the high cost or low cost and it depends on the type of travel and the distance of travel. Private driving will need more cost when comparing to public transport sharing. Normally, public transports are cheaper than a private car (Sherman, 2000).

Security: refers to measures taken by a mass transit system to keep its passengers and employees safe, to protect the carrier's equipment, and to make sure other violations do not occur. This includes the enforcement of various rules and regulations, human and video surveillance, the deployment of a transit police force, and other techniques.

Prestige: prestige-striving in the phylogenetic perspective suggests it to be essentially homologous with primate social dominance. In our species, however, selection for "cultural capacity" has transformed striving for social dominance into striving to evaluate the self as being higher in rank than others or, in other words, into striving for self-esteem (Barkow, 2014).

Comfort: Travel comfort plays a significant role in the choice of transportation mode. Because of the crowd level, variability in transportation time, ventilation problems, and similar problems, passengers may prefer to stick to their private vehicles despite the risk of wasting hours in congestion (Sukru and dilay, 2016).

The researchers developed research hypotheses based on what available in the literature. Accordingly, six variables that are related to the

characteristics of transport mode and seven independent variables that are related to the characteristics of the travelers were identified (Table 3).

Table 2: Measurement of Variables and Expected Signs

Variables	Measurement	Expected sign
Choice of transportation mode	1 = Private care, 2 = Blue minibus taxi, 3 = Bus, 4 = Train	Positive
Accessibility	1 = Very unimportant, 2 = Unimportant, 3 = Neutral, 4 = Important, 5 = Very important	Positive
Income	Ethiopian Birr/Month	Positive
Travel time	Hour/ minutes	Positive
Travel cost	Birr/Trip	Positive
Security	1 = Very unimportant, 2 = Unimportant, 3 = Neutral, 4 = Important, 5 = Very important	Positive
Prestige	1 = Very unimportant, 2 = Unimportant, 3 = Neutral, 4 = Important, 5 = Very important	Positive
Comfort	1 = Very unimportant, 2 = Unimportant, 3 = Neutral, 4 = Important, 5 = Very important	Positive
Age	Years	Positive
Gender	1= Male, 2= Female	Positive
Marital status	1= Single, 2= Married, 3= Widowed, 4= Divorce	Positive
Family size	Number	Positive
Education	1 = Grade level, 2 = Diploma/ level IV, 3 = Degree, 4 = PhD and above	Positive
Employment	1 = Employed, 2= Unemployed	Positive

Source: Authors' (2020)

The expectations in terms of affecting the dependent variable (a multichotomous response variable that included four choices such as Minibus blue taxi, private car, bus, and train) were developed based on the literature surveyed by the authors. The summary of how the variables were measured and the expected sign on the dependent variable are presented in Table 3.

3. RESULTS AND DISCUSSION

3.1 Descriptive Summary Results

The results of this study is based on a survey of 156 people with a response rate of 91.7%. The cross-tabulation tables below reflect the emphasis information about the factors that affect the choice of mode of transportation. Out of the total 143 participants, 128 (90%) had no private cars but there is only 15(10%) of them had private car ownership. In the case of the mode of transportation chosen by participants, 53.8% of the travelers were used minibus taxi, 25.2% of the travelers were used bus and 21% of the travelers were used both private cars and trains.

As shown in table 3 from the total of 9 travelers whose educational level is grade level (1-12) are 6(66.7%) of the travelers were used minibus taxi, 2(22.2%) were used bus and only 1(11.1%) used train transportation mode in different activities. Out of 48 travelers, those educational level is diploma is 21(43.8%), 17(35.4%), 8(16.7%), and 2(4.2%) of the travelers were used bus, mini taxi, train, and private car respectively. Of 48 travellers whose educational level is degree and masters are 50(62.5%) of them were used taxi, 13(16.2%) used bus, 11(13.8) used private cars and 6(7.5%) used train transport mode.

Table 3: Cross-tabulation between Educational level of Travelers and choice of transport mode

Education Level	Statistics	Choice of Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
Grade level (1-12)	Frequency	0	6	2	1	9
	%	0%	66.7%	22.2%	11.1%	100%
Diploma	Frequency	2	17	21	8	48
	%	4.2%	35.4%	43.8%	16.7%	100%
Degree and Masters	Frequency	11	50	13	6	80
	%	13.8%	62.5%	16.2%	7.5%	100%
PhD and above	Frequency	2	4	0	0	6
	%	33.3%	66.7%	0%	0%	100%
Total	Frequency	15	77	36	15	143
	%	10.5%	53.8%	25.2%	10.5%	100%

$$\chi^2 (9) = 24.87, p = 0.003$$

Source: Authors' analysis result (2020)

There are 6 travelers whose education level is PhDs and above, out of this 4(66.7%) of the travelers were used taxi and 2(33.3%) of them used a private car. The p value result showed that there is a difference in transport mode choice due to variation/ difference in educational level (Table 3).

Table 4 shows the employment status of travelers who were used mode of transportation, from 123 employed travelers 61(49.6) were used minibus taxi, 34(27.6%) were used bus, 13(10.6%) used to train and 15(12.2%) were used a private car. From a total of 20 unemployed travellers, 16(69.6%) was used minibus taxis. The unemployed travelers were used the bus and train are equal values. Employed people have more chances to choose transport mode than

unemployed people. The travelers who are employed use/choose minibus taxi, bus, private car, and train respectively. Unemployed people use/choose minibus taxi, bus, and train but not use private cars. We can say there is a difference in the mode of transport choice among employed and unemployed travelers.

Table 4: Cross-tabulation between the status of Employment and Choice of Transport Mode

Employment Status	Statistics	Choice of Mode Transport				Total
		Private car	Minibus taxi	Bus	Train	
Employed	Frequency	15	61	34	13	123
	%	12.2%	49.6%	27.6%	10.6%	100%
Unemployed	Frequency	0	16	2	2	20
	%	0.0%	80%	10%	10%	100%
Total	Frequency	15	77	36	15	143
	%	10.5%	10.5%	53.8%	25.2%	10.5%

$\chi^2_{(3)} = 18.64, p = 0.005$

Source: Authors' analysis result (2020)

As presented in table 5, the travelers who used transport for the working purpose was 109. From this 60(55%) of the travelers were used minibus tax, 27(24.8%) were used bus, 12(11%) were used private cars and 10(9.2%) were used the train. 34 travelers have used transport mode for other activities, among these 17(50%) were used minibus taxi, 9(26.5%) were used bus, 5(14.7%) were used the train and 3(8.8%) were used a private car. The result indicates that most of the people were used/chosen transport mode to work activities and it uses minibus taxis. P-value indicates that there is a difference in the mode of transport choice for working activities and other activates.

Table 5: Cross-tabulation between Purpose of Travel and Choice of Transport Mode

		Choice of Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
Purpose	Statistics	car	taxi	Bus	Train	Total
Working	Frequency	12	60	27	10	109
	%	11%	55%	24.8%	9.2%	100%
others	Frequency	3	17	9	5	34
	%	8.8%	50%	26.5%	14.7%	100%
Total	Frequency	15	77	36	15	143
	%	10.5%	53.8%	25.2%	10.5%	100%

$\chi^2 (3) = 26.95, p = 0.025$

Source: Authors' analysis result (2020)

Table 6 indicates the choice of transport mode of the travelers regarding their monthly income. Out of 16 travelers who had less than 2000 birr income per month was 9(56.3%), 4(25%), 2(12.5%), and 1(6.3%) were used minibus taxi, bus, private car, and train mode of transportation respectively. 51 travelers had 2000-3500 birr per month were used minibus taxi, bus, train, and private car with 24(47.1%), 16(31.4), 10(19.6), and 1(2%) respectively. Similarly, out of 45 travelers who had more than 5000 birr income per month used minibus taxi, private car, bus, and train for transportation services with 25(55.6%), 12(26.7%), 5(11.1%) and 3(6.7) respectively. The travelers were used/chosen minibus taxi, bus, and train transport mode if their income level is less than 3500 birr per month. On other hand, the travelers were used/chosen private care when their income level is more than 5000 per month. The p-value result confirmed that there is a significant difference in the mode of transport choice because of their income level.

Table 6: Cross-tabulation between Income and Choice of Transport Mode

Income (ETB/Month)	Statistics	Choice of Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
< 2000 birr	Frequency	2	9	4	1	16
	%	12.5%	56.3%	25%	6.3%	100%
2000–3500	Frequency	1	24	16	10	51
	%	2.0%	47.1%	31.4%	19.6%	100%
3501–5000	Frequency	0	19	11	1	31
	%	0%	61.3%	35.5%	3.2%	100.0%
>5000	Frequency	12	25	5	3	45
	%	26.7%	55.6%	11.1%	6.7%	100%
Total	Frequency	15	77	36	15	143
	%	10.5%	53.8%	25.2%	10.5%	100%

$$\chi^2_{(9)} = 30.999, p = 0.000$$

Source: Authors' analysis result (2020)

As presented in table 7 out of 34 travelers who had only 1 family member 13(38.2%) of the travelers used minibus taxi followed by private car, bus and train with value 10(29.4%), 7(20.6%) and 4(11.8%) respectively. Those households who had 2- 4 family members are 92, out of this 54(58.7%) of the travelers were used minibus taxi, 25(27.2%) were used bus, 9(9.8%) were used the train and 4(4.3%) were used private car for their daily movement. 17 travelers had more than 5 family members, among these 10(58.8%) were used minibus taxi, 4(23.5%) were used bus, 2(11.8%) were used the train and only 1(5.9%) of travelers used private care. The travelers were used/chosen minibus taxi and private car when their family member is less than 2. When the family members were increased, travelers were used/chosen public transport like minibus taxi, bus, and train for daily movements. The p-value result confirmed

that family size is a significant impact on the choice of mode of a transport system.

Table 7: Cross-tabulation between Family size and Choice of Transport Mode

Family size	Statistics	Choice of Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
1	Frequency	10	13	7	4	34
	%	29.4%	38.2%	20.6%	11.8%	100%
2-4	Frequency	4	54	25	9	92
	%	4.3%	58.7%	27.2%	9.8%	100%
> 5	Frequency	1	10	4	2	17
	%	5.9%	58.8%	23.5%	11.8%	100.0%
Total	Frequency	15	77	36	15	143
	%	10.5%	53.8%	25.2%	10.5%	100%

$\chi^2 (6) = 17.85, p = 0.007$

Source: Authors' analysis result (2020)

Table 8 shows the age of travelers, out of 18 travelers who have 20 up to 30 age group were used minibus taxi, bus, private car and train with the value of 8(44.4%), 7(38.9%), 2(11.1%) and 1(5.6%) respectively. The majority numbers of travelers in this study were age group between 31 up to 40 years old. Out of this 50(66.7%) of the travelers were used a mini-bus taxi, 15(20%) were used bus, 6(8.0%) were used the train and 4(5.3%) of the travelers were used private car. Out of 30 travelers whose age group between 41 up to 50 years old, 9(30%) was used minibus taxi. Surprisingly, there is an equal number of travelers were used bus and train with 7(23.3%) in the age group between 41 up to 50 years old. As the age of the travelers increases, they have used/choose taxi and bus transport mode respectively. The travelers' age is below 30 and above 50 years old gave less priority to used train and private car. We can say

there is a difference in the mode of transport choice in different age categories. So, age is an impact on the choice of different transport modes.

Table 8: Cross-tabulation between Age and Choice of Transport Mode

Age category	Statistics	Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
20–30	Frequency	2	8	7	1	18
	%	11.1%	44.4%	38.9%	5.6%	100%
31–40	Frequency	7	9	7	7	30
	%	23.3%	30%	23.3%	23.3%	100%
41–50	Frequency	4	50	15	6	75
	%	5.3%	66.7%	20%	8%	100%
>50	Frequency	2	10	7	1	20
	%	10%	50%	35%	5%	100%
Total	Frequency	15	77	36	15	143
	%	10.5%	53.8%	25.2%	10.5%	100%

$$\chi^2 (9) = 21.54, p = 0.010$$

Source: Authors' analysis result (2020)

Table 9 shows that 52% of travelers chose bus, 41% of them chose minibus taxi and 4(7.1%) were chosen train form a total of 56 travelers who had paid 3-6 birr per day. There are 33(76.7%) of the travelers were used/ choose minibus taxi from a total of 43 travelers who had paid 7-10 birr per day. Surprisingly, bus and train had an equal number of travelers with 5(11.6%) from a total of 43 travelers who had paid 7-10 birr per day. There are 21(72.4%) travelers were chosen minibus taxi, 6(20.7%) of the travelers were chosen train and only 2(6.9%) of the travelers were chosen from a total of 29 travelers who had paid

more than 10 birrs per day. The travelers were used/chosen minibus taxi even though their transport cost is increasing per day.

Table 9: Cross-tabulation between Transportation Cost and Choice of Transport Mode

Transport cost		Choice of Mode of transport choice			
		Minibus taxi	Bus	Train	Total
3–6 birr	Frequency	23	29	4	56
	%	41.1%	51.8%	7.1%	100.0%
7–10 birr	Frequency	33	5	5	43
	%	76.7%	11.6%	11.6%	100.0%
>10 birr	Frequency	21	2	6	29
	%	72.4%	6.9%	20.7%	100.0%
Total	Frequency	76	36	15	127
	%	59.8%	28.3%	11.8%	100.0%

$\chi^2_{(6)} = 35.2, p = 0.000$

Source: Authors’ analysis result (2020)

Table 10 indicates that there are 2(100%) of the travelers were used taxis from a total of 2 travelers who had traveled 2 kilometers. This shows that people are used minibus taxi for a short distance than long distance. There are 17(63.0%) of the travelers were used minibus taxi, 7(25.9%) of the travelers were used bus and 3(11.1%) of the travelers were used to train from a total of 27 travelers who had traveled 2-5 kilometers. Peoples did not use a private car for a short distance. There are 46(67.6%) of the travelers were used minibus taxi, 10(14.7%) travelers were used train, 7(10.3%) of the travelers were used private car and 5(7.4%) of the travelers were used bus form a total of 68 travelers who had traveled 5-10 kilometers. Finally, there are 24(52.2%) travelers were used

bus, 12(26.1%) of the travelers were used minibus taxi, 8(17.4%) of the travelers were used private car and only 2(4.3%) of the travelers used the train from the total 46 travelers who had traveled more than 10 kilometers. To sum up, people have used bus transport mode for long distances and they are used/choice minibus taxi for a short distance and the p-value indicates that there is a difference in the mode of transport choice in different travel distances.

Table 10: Cross-tabulation between Distance and Choice of Transport Mode

Travel Distance	Statistics	Mode of Transport				Total
		Private car	Minibus taxi	Bus	Train	
< 2 Km	Frequency	0	2	0	0	2
	%	0%	100%	0%	0%	100%
2–5 Km	Frequency	0	17	7	3	27
	%	0%	63%	25.9%	11.1%	100%
5–10 Km	Frequency	7	46	5	10	68
	%	10.3%	67.6%	7.4%	14.7%	100.0%
>10 Km	Frequency	8	12	24	2	46
	%	17.4%	26.1%	52.2%	4.3%	100%
Total	Frequency	15	77	36	15	143
	%	27.7%	53.8%	25.2%	10.5%	100%

$$\chi^2_{(9)} = 40.76, p = 0.000$$

Source: Authors' analysis result (2020)

As table 11 indicated out of 44(30.8%) of the travelers were agreed that accessibility has the top factors to choose transport mode followed by security, comfort, safety, and prestige with 40(28%), 22(15.4), 20(14%) and 17(11.9%) respectively. So, accessibility is the most important factor to choose transport mode in Addis Ababa.

Table 11: Characteristics of Transport Mode considered by Travelers when Choosing a Transport Mode²

Factors	Frequency	Percentage
Comfort	22	15.4%
Accessibility	44	30.8%
Safety	20	14.0%
Security	40	28.0%
Prestige	17	11.9%
Total	143	100.0%

Source: Authors' analysis result (2020)

4.2. Econometric Estimation Result for Choice of Transport Mode

Multinomial logistic regression was employed for investigating the relationship between how the modes of choice of transportation depend on the determinants in the context of Addis Ababa. In any statistical model, if the nature of the variable is categorical or non-numeric with having more than one level, then the dummy variable approach should be used. Therefore for this study, the dependent variable mode of choice of transport has four levels. There is no scientific logic for setting a reference group, but it may be better if it has a common sense of understanding. Hence in our study Bus can be considered as a reference by assuming the above logic. Finally, the maximum likelihood estimation technique was used to estimate the coefficients and their probability value and odds ratio is reported. The model fitting information reflects that the intercept-only model has 382.549 Akai information criteria and the final fitted model has an AIC of 312.00. As we know the minimum the better so that the final will be the most parsimonious model and everything was made on this

² Although while choosing a transport mode the possibility of considering more than one attribute of a transport mode is possible, the respondents were asked to pick the most important attribute of the transport mode in deciding to choose the service.

model. The model goodness of fit of the data was checked by both Pearson and deviance residuals. The Pearson residual uses a chi-square of grouped variables in each binary logistic regression. A Pearson residual value less than in absolute value to consider as lacks goodness of fit. Since the p-value greater than 0.05 indicates that the model is good in fit.

1) Econometric Result for Traveler's Characteristics

Table 12: Estimation Result for Traveler's Choice of Transport Modes using Traveler's Characteristics as a Correlate

Variables	Minibus taxi	Private car	Train
Age	1.5***	0.192***	9.36***
Family	0.56***	3.58***	8.43***
Income	1.001***	1.004***	0.998***
[Gender=1]	9.88	1.528	0
[Gender=2] ^Φ			
[Marital status=single]	0.99	1.002	0.25
Marriage	0.91	1.021	0.78
Widowed	0.997	0.999	0.01
Divorce ^Φ			
Education= Grade level	2.3***	1.01***	4.51**
Education=Diploma	0.559***	1.02***	0.39**
Education=Degree	3.683***	1.17***	8.59***
Education=PhD and above ^Φ			
Employed	3.971***	3.96	0.12***
Unemployed ^Φ			

Note: 1) The reference category is the bus. This parameter is set to zero because it is redundant; ^Φ= Indicates it is reference; ***Significant at $p < 0.01$; ** $p < 0.05$; and * $p < 0.1$

Source: Authors' analysis result

4.2.1 Comparison of minibus taxi and bus

Age: The odds of the Age of the travelers those who use/choose minibus taxi to have 1.5 times more than those who use/choose the bus. In other words, as compared to bus users in the log scale the rate of change of choosing minibus taxi is 0.41 when the age of the travelers' increases in a year keeping other variables remains constant. Since age is statistically significant at a ($p>0.01$), it has a great contribution to the choice of mode of transportation. Finally, we can conclude that when age in years goes on a year the preference for a mode of transportation becomes minibus taxi rather than a bus. Therefore the result is similar to the finding of Ashrafi and Neumann (2017) and According to Axhausen & Simma (2003), which may because elder people have the chance to provide enough income to buy their car. But it is different from the finding of Schwanen et al (2001), Thamizharasan et al (1996), and Mc Gillivray (1970)., So Age is inconsistent with the choice of transport mode.

Family Size: The odds of use/choice of minibus taxi for travelers having one more family size is 0.56 times less than for uses/ chooses bus. Similarly as compared to bus users the mode of transportation when the family has one more family size, in the log scale the rate of change of preferring minibus taxi was decreased by 0.58 keeping the effect of other determinants holding constant. Hence family size is statistically significant with a probability value of ($p<0.01$). From this, we can generalize as a family has a great impact on the mode of transport choice. The result is related to the finding of Ashrafi and Neumann (2017). If there are large numbers of family sizes there may be choice deferent transport mode because people have their perception to choose different transport modes. This shows family size is a consistent factor for mode choice.

Income: Those who have more income have 1.001 time's higher odds of choosing a minibus taxi than those who choose the bus. As income increased, the travelers have used a minibus then bus. Therefore income plays a great role in choosing a transportation mode with a probability value of $p < 0.01$. This result is similar to the finding of Ashrafi and Neumann (2017). Travelers have more income had more chances to use/choose different transport modes. But this finding was not similar to Wilson (1967) so, income is a consistent factor for the choice of mode of transport.

Education: The odds of use/ choice minibus taxi the travelers who had a diploma are 0.559 times less than the travelers who had a PhD and above education level than a bus. Education had a significant effect on the mode of transport choice. It is positive and significant at a 1% level of significance. The significant effect of education on the mode of transport choice confirms the importance of education in increasing the capacity of choice transport mode. Education also affects to income, people which have lower education level tend to have lower income also, so it affects them on lack of owning a private vehicle, that is why they prefer to choose local bus while education level is high to increase people have to get more money and know the quality of transport mode. This study in line with Utami (2010), so education is a consistent factor for the mode of transport choice.

Employment status: The odds of travelers who had jobs were choosing minibus taxi is 3.97 times more than those who had not jobbed than a bus. Travelers use/choose minibus taxi those had good jobs because if travelers had a good job those of them had provided more income. It is a significant effect at the 1% level. This result is not similar to the finding of Thamizharasan et al (1996) which indicated occupation is inconsistent. Similar interpretations for both private cars and train transport mode. To sum up, age, family size, income,

education level, and occupation are a significant influence of mode of transport choice but gender and marital status are insignificant variables. The same fashion for private cars and train modes of transport.

2) Econometric Result for Characteristics of the Trip

Travel cost: the odds of those of the participants, who paid the high cost, choose/uses a minibus taxi was 2.43 times more than the participants choose/use a bus. Travel cost had a significant impact on the mode of transport choice at a 1% level of significance. Because people have choice low or fair cost accordingly their income and time. In Addis Ababa people are choosing Sheger and alliance bus rather than a private car or Anbessa bus and higher bus because of time and fair cost. This study is allied to Wilson (1967), Yu (1970), and Ponnuswamy (1992) this indicates travel time and travel cost is consistency for mode choice.

Travel time: Travel time had a significant impact on the mode of transport choice at a 1% level of significance. People had choice/used fast transport mode according to time. People are choosing minibus taxi rather than a bus because a taxi has only 12 set chairs and it did not take a long time in one station. This study is allied to Wilson (1967), Yu (1970), and Ponnuswamy (1992) this indicates travel time and travel cost is consistent for mode choice.

Travel Distance: The odds of a choice minibus taxi, travelers had traveled a long distance was 0.099 times less than those of use/choose the bus. Travel distance similar to travel time, it had a significant influence on the mode of transport choice at 1 % significant level. When Peoples' workplace and home are far, they may be choice long-distance travel modes like trains and buses relative to accessibility rather than taxi and minibus taxi. This result is consistent with the finding of Thamizharasan et al. (1996).

Table 13: Estimation Result for Traveler's Choice of Transport Modes using Characteristics of the Trip as a Correlate

Variables	Blue minibus taxi	Private car	Train
Transport cost	2.43 ^{***}	2.29 ^{***}	0.126 ^{***}
Travel distance	0.099 ^{***}	0.04 ^{***}	0.153 ^{***}
Travel time	1.881 ^{***}	4.684 ^{***}	0.006 ^{***}
[Comfort=1]	0.303 ^{***}	1.22 ^{***}	0.14 ^{***}
[Comfort= 2]	0.314 ^{***}	0.05 ^{**}	0.16 ^{***}
[Comfort= 3]	0.06 ^{***}	0.12 ^{***}	0.004 ^{***}
[Comfort= 4]	0.052 ^{***}	5.23 ^{***}	0.86 ^{***}
[Accessibility=1]	1.26 ^{***}	0.218 ^{***}	2.09 ^{***}
[Accessibility=2]	0.416 ^{***}	0.67 ^{***}	3.25 ^{***}
[Accessibility=3]	0.05 ^{***}	0.79 ^{***}	0.36 ^{***}
[Accessibility=4]	0.69 ^{***}	4.495 ^{***}	0.24 ^{***}
[Safety= 1]	0.851 ^{**}	0.78 ^{***}	1.002 ^{***}
[Safety= 2]	0.932 ^{**}	0.98 ^{***}	1.32 ^{***}
[Safety=3]	0.653 ^{***}	0.02 ^{***}	2.39 ^{***}
[Safety= 4]	0.974 ^{**}	3.12 ^{***}	1.02 ^{**}
[Security=1]	1.02 ^{***}	1.695 ^{***}	3.56 ^{***}
[Security=2]	0.108 ^{***}	0.22 ^{***}	0.97 ^{***}
[Security=3]	8.813 ^{***}	0.012 ^{***}	3.69 ^{***}
[Security=4]	2.764 ^{***}	0.84 ^{***}	0.7 ^{**}
[Prestige=1]	0.049	1.002	0.61
[Prestige=2]	0.036	1.02	0.56
[Prestige=3]	0.131	1.10	0.23
[Prestige=4]	0.022	1.021	0.001

Note: 1) The reference category is the bus. This parameter is set to zero because it is redundant; ^{***}Significant at $p < 0.01$; ^{**} $p < 0.05$; and ^{*} $p < 0.1$

2) Comfort= 5; Accessibility=5; Safety=5; security=5; and prestige=5 are references

Source: Authors' analysis result

Comfort: The odds of those of the travelers who gave less priority to comfort are 0.3 times lower to prefer minibus taxi than the bus as compared to the odds

of travelers who gave priority to comfort. In other words, those who need comfort are preferred a minibus taxi. It is a significant effect on the mode of transport choice at a 1% level of significance. Therefore, this result is similar and consistent with the finding of Ponnuswamy (1992).

Accessibility: the odd of those of the travelers who gave less priority to accessibility is 0.26 times lower than to choice minibus taxi than the odds of the choice bus as compared to those who gave priority to accessibility. This means peoples are preferred to the minibus taxi to the bus if there are a high number of taxi accesses. Accessibility is a significant influence at 1% of a significant level. Most of the time people have choice transport mode which has more access. Taxi is more accessible in Addis Ababa and the majority of people may have chosen taxi and minibus taxis. This result is not constant to the finding of Utami (2010) because in developed countries has more access in all transport mode.

Safety and Security: As compared to those who gave priority to safety, travelers who gave less priority to safety have 0.932 times lowered to choose minibus taxi than a bus. In addition to this traveler who gave less priority to security has 0.07 times less to choose a taxi than a bus. To conclude those of who needs both safety and security prefers to minibus taxi. Safety and security are important determinate for the mode of transportation since both have a probability value of $p < 0.01$. the result of safety is similar to the finding of Ponnuswamy (1992). But security is not similar to the finding of Ponnuswamy (1992). So safety is consistent but security is not a consistency factor to choice transport mode. The same fashion for private cars and train modes of transport.

- ✓ Generally, Gender, marital status, and prestige of the travelers are not factors for the choice of transportation mode, while all other variables have a contribution to the choice of transportation mode.

5. CONCLUSION

The main objective of this study is to identify the determinants of the choice of transport mode in Addis Ababa. In order to test the hypothesis, multinomial logistic regression was specified and applied with the mode of transport choice as a function of a series of characteristics. In this case, the dependent variable is the function of socio-economic or demographic factors; traveler and trip-related characteristics. About 15 independent variables were specified from these series of characteristics and used in the econometric model. Important relationships were found in this analysis, which demonstrated the mode of transportation choice relates to one or more of the variables specified as a function of series characteristics or attributes.

From the finding of the study, the researchers come to the following conclusions. Transportation service is sensitive to the characteristics and performance of each mode of transportations. The following variables like Accessibility, travel cost, travel time, travel time, and income level are the most determining factors of modes choice. From the different modes of transportations in Addis Ababa city, the Minibus taxi is the most useable/ chosen transport mode in the city even if its travel cost is high as compared to other public transport.

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The Effect of Promotion Practices on Consumer's Purchase Decision: The Case of Some Selected Real Estates in Addis Ababa, Ethiopia

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Abstract

This study is intended to measure the effect of the five promotional elements such as sales promotion, personal selling, direct marketing, advertising, and public relation practiced in the real estate industry on the purchase decision of customers. A combination of descriptive and explanatory research design was used with a quantitative research approach. Primary data were collected using survey questionnaire distributed to 322 sampled respondents. Data were subjected to inferential statistical methods supported with SPSS software. The results of the analysis revealed that all the variables (such as sales promotion, personal selling, direct marketing, advertising, and public relation) have direct correlation with the customer's purchase decision at $p < 0.05$. All the variables jointly explained purchase decision of real estate consumers by 53.2%. The regression's result showed that, except advertisement practice, the other four promotional elements were statistically significant in affecting purchase decision of consumers.

Keywords: *Consumer's purchase decision, promotional practices, Real Estate, advertisement, Ayat Real Estate, Addis Ababa, Ethiopia*

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1. INTRODUCTION

1.1 Background of the study

All companies derive sales by promoting the benefits their company's goods or services to pools of potential buyers. The way companies promote their product will largely determine whether they successfully select the right way of promotion to their target audience or not. Even a superior product doesn't sell itself. Our customers need information about our product or service before they buy it. The ways we communicate features and benefits to our potential customers is called a promotional mix (Kotler, 2000).

Marketing is the art of selling goods and services to the ultimate consumer. According to Philip Kotler (2006), the ingredients for a good marketing are the 4P's: product, price, promotion and placement. It is the main instrument used by the company to obtain strong position on the concerned markets. In particular, promotional mix, namely, advertisement, sales promotion, public relations, direct marketing, and personal selling are effective tools to spread the information about the products and services. A promotional mix should be designed in a way that informs the target market audience about the values and benefits of the product or service offered. It also changes the consumer perception and buying decision towards the product.

The real estate sector has been contributing its part a lot in this regard. One can see that the sector has been providing its services to the society and gaining experience and enhancing its capacity from time to time; putting it in a better position to satisfy the needs of the public. The amount of housing the government and the private sector have been making available falls far short of the demand for it. Under such circumstances it is important that the capacity of the public to afford residential houses be taken into account and addressed

accordingly. Addressing this challenge would create a win-win situation for both sides (Addis Chamber, 2016).

1.2 Statement of the Problem

The main reason that triggered the researchers to conduct the study on the problem at hand is the current unstructured and unintegrated way of using promotional mix elements on consumer decision on real estates. This unstructured and unintegrated way of applying and incorporating elements as one of the company's marketing strategy adversely affects the industry a lot, and studies show that companies have to apply the elements on structured and integrated manner so as to compete in this dynamic and competitive business environment. Effective use of promotional mix elements is not a choice for firms, rather it is a must. One previous study shows that billions of dollars are spent on advertising annually to promote business. According to a survey 50 percent of all advertising is wasted due to lack of effective advertising (Ads of the World Business Magazine, 2011).

In addition, at the moment when the sale of a flat of a certain building takes place, companies tend to apply different techniques to achieve their goals. How applicable and profitable are these techniques? The process of making a decision regarding a purchase is quite slow and will also be associated with data collection and comparison to realize the purchase. Since there is a stiff competition among the real estate companies, how do investors and real estate companies convince their customers to buy these apartments? What strategies and techniques do they use to inform their consumers and conduct a sale? There are other basic questions that need to be answered. Therefore, acknowledging the purchase of a real estate property is a major investment by a potential client, the decision to buy a house is a long process and is based on specific customer preferences.

The main gaps that are being observed in the real estate industry of Ethiopia regarding the application of the promotional mix elements (PMEs) are the unscientific approach of measuring and identifying which one of the PME is the most effective and workable for their existing market strategy in order to be competitive in the industry, lack of proper application of promotional mix elements, and poor message creation.

Despite the widespread employment of promotional mix elements in practice, there has been little attempt to integrate research to determine the relationship between the use of promotional mix elements and customer purchase decision in real estate business. The influence of promotional mix elements appear to be worthy of investigation in relation to customer buying behavior as different scholars contradict each other and argue for diverse outcomes (Netemeyer *et al.*, 2004; Mela *et al.*, 1997). However, to the best knowledge of the researchers, there has not been empirical evidence in Ethiopia regarding the relationship between promotional mix elements and consumer purchase decision in real estate companies. Even though there are studies on promotional mix in different industries, there is little empirical evidence that show the effect of promotional efforts on buyer's decision in the real estate business. This study is, therefore, intended to fill this literature gap. Given such limitations, this study therefore, tries to evaluate the effect of promotional mix elements on customer purchase decision on the selected real estate companies. It has therefore the following specific objectives:

1. To examine the effect of advertising practice by Real Estate Companies on consumer's purchase decisions.
2. To measure the effect of sales promotion by Real Estate Companies on consumer's purchase decision.
3. To identify the effect of personal selling practice by Real Estate Companies on consumer's purchase decision.

4. To evaluate the effect of publicity by Real Estate Companies on consumer's purchase decision.
5. To identify the effect of direct marketing by Real Estate Companies on consumer's purchase decision.

2. LITERATURE REVIEW

2.1 An Overview of Promotion Mix Elements

Promotion can be defined as a marketing activity that involves the persuasion contacting process through which the sender define of a commodity, or service, or an idea, or a place, or a person, or a pattern of behavior for the purpose of influencing the members of a particular audience minds, to appeal to their response behavioral about what promotes (Mualla, 2006). There are several promotional goals, and the three main objectives companies seek to achieve through the promotion include: (1) forming the appropriate mental image for the company: When the company markets its products, it seek to form a consumer mental image about the company by defining itself, and its goals in the early stages of the company's entry to the market (Kahaf, 2001); (2) defining the company's product: In general, the main task of the promotion is to define the product, specifications, price, places of distribution, how to use it, and places of service centers and maintenance, besides, trying to convince consumers of its benefits (Hamid, 1990); and (3) the development of the company's market share: Promotion is considered as one of the main tools the company relies upon to develop its market share. When consumers are convinced with the available features in the company's product, their demand on the company's product will increase.

2.2 A Glimpse on the Five Promotional Marketing Elements

According to Brassington and Pettitt (2000), promotion strategy is the direct way in which an organization communicates the product or service to its

intended customers. In addition, according to Swastha and Irawan (2008), promotional mix is information flow or one way persuasion which directs someone, people, or organization to make a demand. According to Belch et al. (2004), there are five major promotional elements in marketing communications mix. These are:

1. **Advertising:** Kotler & Keller (2006) defined advertising as any paid form of non-personal form of marketing communication about an organization, product, service or an idea by an identified sponsor. The non- personal component of advertising involves using mass media such as TV, radios, newspapers, magazines, etc. It is non-personal and does not have an immediate feedback as personal selling does and is implemented by a specific advertiser for a fee paid to influence consumer behavior. According to Wang (2009),since advertising is one of the most primary communication links with customers, customers' desired image and language along with culture, economy and commercial changes must be kept in mind. Moreover, advertising helps in building brand awareness and image by repetitive exposure to the intended message.
2. **Personal selling:** The main feature of personal selling is the effect it has. This means that a sales person is more likely to break through, get consumers' attention and even be remembered later on. The sales person has the chance to adjust the message to the type of customer dealing with. Since the communication is two-way, there is less danger of misunderstandings because the salesperson can get feedback immediately and on the spot.
3. **Sales promotion:** Cuizon (2009) stated that sales promotion methods used by the seller are not only effective to succeed in achieving short-term sales but are also more cost effective than advertisement. Nema,

(2012) classify sales promotions as Consumer Sales promotion and Trade Sales promotion. According to this study, consumer sales promotions indicate any short term promotion methods destined by retailers to boost customer immediate response to the products.

4. **Public relations or Publicity:** Any organization is interested to build and maintain strong relations with its consumers, to achieve satisfaction and complete mutual communication, either internally or externally, through the implementation of policies and programs based on the principle of social responsibility, and employing media to build a desired image of the organization. They also include all activities used by the organization to improve its image in the community such as supporting and participating positively in social, environmental, health activities, and public issues (Lovelock & Wirtz, 2004).
5. **Direct Marketing:** Direct mail involves the sending of information about a special offer, product, sale announcement, service reminder, or other type of communication to a person at a particular street or electronic address (Berry & Wilson, 2004).

Consumer Purchase Decision: Consumer buying decision process is a series of stages made by customers when and after buying a product. Pride and Ferrell (2012) noted that to understand customers purchasing decision, the marketer must understand the consumption process and the utility of products in customers' perceptions. The consumer buying decisions go through common five steps, indicated as follows:

1. The first stage in the purchasing decision is need/ problem recognition. It is a crucial and important stage because if the need is not recognized, then the purchase process will not happen.

2. The second stage of consumer buying decision process ,it can be classified as internal and external sources ,internal search refers to the buyer search the information from their memory and is determined by consumer existing knowledge about the products, external search is applied when the internal search is not sufficient.
3. The third stage is evaluation of alternatives where the buyer will establish a set of criteria in the evaluation process; this criterion differs from buyer to buyer depending on demographic and psychological variables as well as their purchasing power.
4. The fourth step is purchase decision which is a result of evaluation process and the choice among available alternatives to choose the appropriate item that satisfies buyer's needs and desires.
5. The fifth stage is when buyers compare purchased products with their previous expectations and are either satisfied or dissatisfied.

2.3 Review of Empirical Studies

Mahmud *et al.* (2014) examined the impact of promotional mix elements on consumers purchasing decisions in Amman, Jordan on Jordanian shareholders ceramic and glass Production Company. Advertising, personal selling, and sales promotion practiced by Jordanian shareholding ceramic and glass production companies has significant effect on consumers purchasing decision. They also argued that publicity and public relations have no significant effects on consumers purchasing decision. According to Jakstiene *et al.* (2008) advertisements shape the behavior of the people through cognition, which is the perception of a person towards the information communicated through advertisements. Hamadan (2015) argues that promotion can be a powerful derives to persuade consumers and lead into increase of sales.

Ajan (2015) also conducted a research on effects of sales promotion on consumer purchasing decision of Baskin Robbins Ice –Cream Franchise, Thailand. The research revealed that sales promotion plays a vital role in marketing in any business nowadays. Kumar *et al.* (2011) also found that advertising and sales promotion together with the image of a company influence the consumer buying decision. On a similar endeavor, Walla (2016) studied the relationship between publicity and public relations and demand in a non-personal way, and found out a positive relationship. De Pelsmacker (2001) argued that customers are personally addressed and are able to respond, resulting in that the company may adapt an offer to the needs of the customer based on the data that have been stored in a database from the transactions.

Isaac (2015) examined the influence of brand image and promotion mix on consumer purchasing decision conducted on beverage consumers in Lagos State, Nigeria. From this study, the findings have shown that promotional mix exert great influence on consumer buying decision thereby affirming that promotional mix are veritable marketing communication tools for influencing consumer buying decisions on sustainable bases. Chandon *et al.* (2000) confirmed that many consumers change brands so that they could receive greater deals that replicate and build up their smart buyer self-perception, and these consumers are favorably promotion prone, these consumers make an attempt to try a new product or service that have been promoted.

2.4 Conceptual Framework and Research Hypothesis

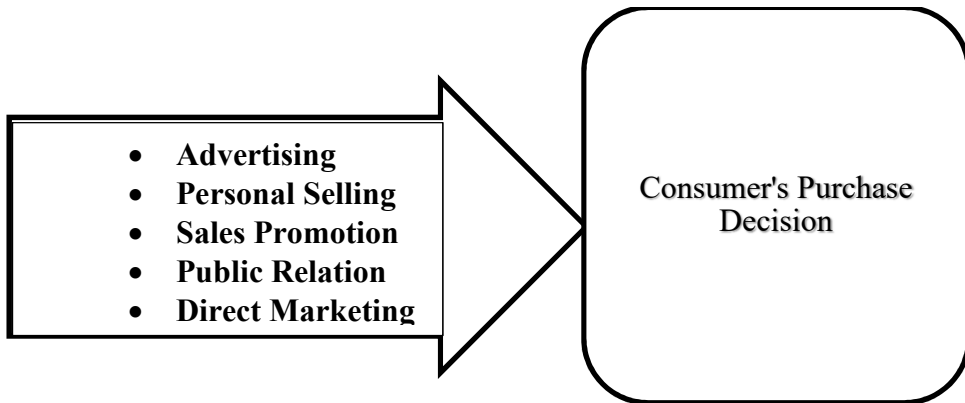


Figure 1: Conceptual Framework adapted from Mahsa *et al.* (2015).

Based on available previous literature, the authors developed the following five alternative hypotheses (H_A):

1. Advertising program of real estate companies is expected to have significant effects on consumer's purchase decision.
2. Personal selling program of real estate companies is expected to have significant effect on consumer's purchase decision.
3. Publicity (public relation) programs of real estate companies have not significant effect on consumer's purchase decision.
4. Direct marketing program of real estate companies is expected to have significant effects on consumer's purchase decision.
5. Sales promotion program of real estate companies is expected to have significant effects on consumer's purchase decision.

3. RESEARCH METHODOLOGY

3.1 Research Design and Approach

This study adopted a combination of descriptive and causal research designs as it helps to understand the existing promotional practices of the case company

as well as to explain the determinants of consumer's purchase decision. A quantitative research approach was adopted to achieve the objectives of this study.

3.2 Sample Size and Sampling Procedure

Before determining the sample size, the population where the sample is drawn from has to be determined. The target population of this research included real estate house owners and other potential real estate buyers. The nature of the target population does not allow to get specific figure which makes it infinite. Hence, the researchers used a sample size calculator to determine sample from infinite population. The following sample size determination formula was adopted following Tabachnick & Fidell (2007).

$$N > 50 + 8m$$

Where,

N = Sample size

M= number of questions available in the questionnaire.

So m= 34,

$$N > 50 + 8 * 34 = 272 + 50 = 322.$$

To select the sample from the target, a convenience sampling technique was used. The data for this study were generated from primary sources. It was generated by using questionnaire from those selected real estate customers and marketing staff. To analyze data collected from primary sources, descriptive statistics (frequency, mean standard deviation, percentages and correlation), and multiple linear regressions were used. Correlation was undertaken to determine the relationship between variables. The Statistical Package for Social Sciences (SPSS) version 20 was used to generate analysis results.

4. RESULT AND DISCUSSION

4.1 Results from Descriptive Analysis

Descriptively, the average or mean level of consumer purchase decision was (M=3.32, SD=0.88) on a five-point Likert Scale. This implies that, on average, the consumer purchase decision was above average. The result from this study showed moderate and above moderate mean values for the variables that are presumed to affect purchase decision (Table 1).

Table 1: Descriptive Statistics of variables

Variables	Mean	Std. Deviation
Customer Purchase Decision	3.32	0.88
Advertising	2.85	0.73
Sales Promotion	3.32	0.88
Public Relation	2.91	0.61
Direct Marketing	3.10	0.67
Personal Selling	3.71	0.88

Source: Authors' analysis result

4.2 Results from Inferential Analysis

1) Correlation Analysis

The Pearson Correlation test was used to conduct and measures the magnitude of correlation between customer purchase decision and the five promotional marketing elements such as advertising, public relation, personal selling, sales promotion and direct marketing.

From the correlation result (Table 2), it can be summarized that there is significant positive relationship between the five promotional marketing elements such as advertising, public relation, sales promotion, personal selling,

direct marketing, and customer's purchase decision. All the correlation coefficients are significant at either $p < 0.01$ or $p < 0.05$. This implies that increase or decrease in the adjustment of advertising, public relation, sales promotion, personal selling and direct marketing is associated with similar change in customer purchase decision.

Table 2: Correlation Matrix between Purchase Decision and Promotional Marketing Elements

	Variables					
	PD	Ad	SP	PR	DM	PS
Variables						
PD	1					
Ad	0.220 ^{***}	1				
	P=0.000					
SP	0.511 ^{***}	0.379 ^{***}	1			
	P=.000					
PR	0.211 ^{***}	0.442 ^{***}	.506 ^{***}	1		
	P=0.001					
DM	0.350 ^{***}	0.275 ^{***}	.590 ^{***}	.510 ^{***}	1	
	P=0.000					
PS	0.358 ^{***}	0.077	.139 ^{**}	.411 ^{***}	.276 ^{***}	1
	P=0.000					

PD = Purchase Decision; Ad =Advertising; SP = Sales Promotion; PR = Personal Relation; DM = Direct Marketing; PS = Personal Selling

^{***}Correlation is significant at $p < 0.01$ level (2-tailed) and ^{**}Correlation is significant at $p < 0.05$ (2-tailed).

Source: Authors' analysis result

2) Multiple Linear Regression Analysis Result

The results of the correlation analysis presented earlier show only relationship between consumer's purchase decision and the five marketing elements and doesn't tell us if at all there exists a causal relationship between them. Therefore, it is imperative to conduct a cause and effect analysis using inferential analysis. This section presents the analysis results of multiple linear regression model. Before presenting the analysis results, it is procedural to check if the assumption of multiple regressions are met. The researchers conducted diagnostic tests such as multicollinearity, autocorrelation, homoscedasticity and normality check. The results of the diagnostic tests revealed that the multiple linear regression model fulfilled all the assumptions. The summary of the test results are presented below:

Table 3: Summary of Diagnostic Test Results

Assumption	Result	Interpretation
Multi collinearity	VIF for all Variables <10; Tolerance <2	Non multi collinearity Problem
Auto correlation	Durbin-Watson value was 1.89	The residuals are uncorrelated
Homoscedasticity	The graph looks like random array of dots.	that errors are spread out consistently between the variables
Normality	In P-P plot, residuals are distributed normally	Dots are much closer to the diagonal line

Source: Authors' analysis result

Based on the model summary result the adjusted R square is 0.53, which means that all the independent variables (i.e, the five promotional marketing elements) jointly explained the variability in the dependent variable (customer purchase decision) by 53%. However, that still leaves 48.5% unexplained in this research. This means there are other additional factors that affect customer's

purchase decision have not been included in this research. The ANOVA result which explains the overall model fit is also found to be very good. It is explained in terms of the F value ($F=30.693$), which is statistically significant at $p<0.01$ (Table 4). The ANOVA table tells us whether the overall model results in a significantly good degree of the prediction of the outcome variable (Field, 2009).

Table Error! No text of specified style in document.: Estimation Results of Multiple Linear Regression

Variables	Unstandardized Coefficient		Standardized Coefficients		t-test
	Beta	Std. Error	Beta		
Advertising	0.161	0.092	0.10		1.74**
Sales Promotion	0.650	0.081	0.54		8.02***
Public Relation	0.407	0.999	0.28		4.11***
Direct Marketing	0.060	0.086	0.05		0.69
Personal Selling	0.394	0.058	0.38		6.76***
Adjusted $R^2=0.53$; $F=30.693$ ***					

Note: Predictors: (Constant), personal selling, sales promotion, advertising, direct marketing, public relation; Dependent Variable: Purchase Decision

Source: Authors' analysis result

As presented in Table 4, the individual effect of the independent variables can be explained by their respective standardized beta coefficients. Except direct marketing, all other variables were found to have significant impact on customer's purchase decision. Therefore, the null hypotheses that there is no relationship between the dependent variable (consumer's purchase decision) and the independent variables advertising, sales promotion, public relation, and personal selling) are rejected. More specifically, advertising is found to be a

significant determinant of purchase decision at $p < 0.05$. As the advertising variable increases by one level, consumer's purchase decision is estimated to increase by a factor of 0.1. In a similar way, as sales promotion increases by one level, customer's purchase decision increases by a factor of 0.54, which is statistically significant at $p < 0.01$. Public relation which is the third marketing element is also found to be statistically significant at $p < 0.01$, and as the variable changes by one unit, customer's purchase intention is found to increase by a factor of 0.28. The last variable is personal selling which is found to be statistically significant at $p < 0.01$. As the value of the variable changes by one unit, customer's purchase decision changes by a factor of 0.38.

5. CONCLUSION AND RECOMMENDATION

The results of this study reveal that Real Estate Companies should manage the promotional marketing elements in their effort to change their customer's purchase decisions. Promotional mix exert great influence on consumer buying decision, thereby affirming that promotional mix are veritable marketing communication tools for influencing consumer buying decisions on sustainable bases. The study also showed that, except direct marketing, all the promotion elements considered under this study are positively influenced the response variable (customer purchase decision). Among the independent variables, sales promotion possessed the highest effect on consumers buying decision, and Company managers should give priority to this independent variable. But, generally speaking, as long as resources are not a constraint, Real Estate Company Managers should work on the significant correlates of purchase decision in their endeavor to increase their sales.

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