



THE IMPACT OF EFDS ADOPTION ON BUSINESS PERFORMANCE: EVIDENCE FROM ARUSHA CITY COUNCIL IN TANZANIA

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Abstract

The study assessed the impact of EFDS adoption on business performance in Arusha city council in Tanzania. The sample size of the study was 225, and it used structured questionnaires to collect its data through an online survey platform. The data were collected between August and September, 2019. The study used both descriptive and econometric methodology to analyze its data to make inference. The study concludes that there are positive and statistically significant relationship between the educational level, business experience, product differentiation, adoption of EFDS, business owner's age, business size, parental influence and business performance in Tanzania. However, the adoption of EFDS which is of much interest showed a strong positive relationship with business performance. In other words, it means that when a business adopts the use of Electronic Fiscal Device (EFD), it will boost the business performance positively when the device also works positively but when it works negatively so will the performance of the business will be.

Keywords: Electronic Fiscal Devices (EFDS); Business performance; Tanzania; Arusha city council; Ordered logit regression

INTRODUCTION

Taxation is one amongst many sources of Government income. It is relied on by the government more than other sources of income because more is expected to be collected from taxes than any other source (Kira, 2016; Chinwendu, 2012). The government compels taxation through an implicit or explicit threat of force such as fines or imprisonment (Mesfin & Bogale, 2013; Horn, 2003). To be able to embark on developmental projects, the obvious means for governments to secure funds for such projects are through taxes which are mostly the main source of revenue for every government. There are various kinds of taxes in every country that individuals are obliged to pay from motor vehicles tax to business tax depending on yearly turnover (World Bank, 2007; 2012).

In order to improve the productivity level of tax collection in efficient ways the Tanzania Revenue authority innovated by introducing a technology known as EFDs (Electronic Fiscal Device). Traders from the retail level to the wholesale level massively avoid using EFDs (Chamshama, 2015). Even though, other factors such Individual characteristics, business characteristics and strategic factors. Taking into consideration the adoption of Electronic Fiscal Devices (EFDs) has also been attributed as one of the factors that affect business performance. Different researches have been conducted and reports are written about the EFD saga, and even though these studies have addressed why taxpayers avoid adopting EFDs, they haven't equally addressed how EFDs adoption impact business performance.

According to Emmanuel (2018), many countries in Sub-Saharan Africa have encountered a series of technological issues with the adoption of EFDs to improve their tax collections. In his study of the systemic review of EFDs operation, he concluded that the device has brought some challenges hence the proposal of TOE model which curtails 17 recommended dimensions. However, automation benefits tax authority more than taxpayers. Moreover, some researches have been conducted on challenges facing taxpayers in EFDs adoption, researchers have not pointed out how these existing challenges impact business performance. The study uses this as a research gap and use it to test the hypothesis that challenges in the adoption of EFDs have an effect on business performance by impacting business efficiency, growth, profits and returns on investment. The remaining part of the study consists of theoretical literature review, research methodology, results and findings discussion and conclusion.

THEORETICAL LITERATURE REVIEW

Electronic Fiscal Devices

In Tanzania, EFDs were introduced under Value Added Tax EFDs regulation 2010 and the Income Tax EFDs Regulation of 2012 (Siraji, 2015; Stephen, 2014; Kelvin, 2013). The Income

Tax EFDs regulation act (2012), defines Electronic Fiscal Device as "a machine designed for use in business for efficient management controls in areas of sales analysis and stock control system which conforms to the requirements specified (under it)" and that it includes Electronic Tax Register, Electronic Fiscal Printer and Electronic Signature Device.

Phases of EFD Registration

The initial stage of the EFDs registration started in 2010 for VAT registered merchants, the first phase ended in 2013. Phase two began in 2013 to date and includes all unregistered VAT traders and businesses whose annual turnover is more than 14 million per year (Stephen, 2014). Such businesses include photo studios, catering services, lawyers and others amongst many as defined under The Income Tax EFDs Regulation of 2012 (Kelvin, 2013). An Informal business sector which includes local restaurants and the marching guys would not be included in this phase because they have no official designated areas to conduct their business activities and that they do not have an annual turnover of over 14 million per year (Tanzania Revenue Authority, 2017).

The need for EFDs

Electronic Fiscal Devices are significant in many ways. On its website, the Tanzania Revenue Authority has outlined several factors as to why EFDs are preferred. The authority introduced this device for the purpose of broadening the tax base by enforcing compliance and eschewing tax evasion (Clive, 2011). The other benefit that the device renders to merchants is that it has an in-built fiscal memory which is inerasable by mechanical, chemical or electromagnetic interference. Besides, the device reports daily with an automatic self-enforcing issuing system with z-reports after 24 hours every day (Siraji, 2015). EFDs avoid conflict during audit and assessment of tax, Simplifies and ease objection and appeals (Zaburi, 2014). The automation of tax collection has the tendency to reduce direct contacts between tax collection officers and merchants hence leads to the reduction of corruption because EFDs helps in the remote access to information, reduction in fraud, uniform application of tax legislation and improved collection of tax statistics (Robson, 2005). In addition, some benefits such as control of file transfer, improved reporting, reconciliation of tax returns declarations and compliance testing of bank files (Tanzania Revenue Authority, 2017).

Business performance

A business is an activity done by an individual for the purpose of earning a living. A business transacts goods and services against payment in form of money (Ajagbe et al, 2016). A

business is a financial activity (Mahajan, 2014). The definition of performance is relative but can be explained as the completion of a given assignment measured against metrics known standards of accuracy, completeness, cost, and speed. It can also be known as the fulfillment of a duty and after such fulfillment; the performer is released from the contract if at all a contract was entered (Grafton et al, 2010). The success of every business depends on its performance which can be termed as the level of fulfillment of management goals in business process (Bulut & Can, 2013).

Business performance can also be defined as how the company is doing financially, ability to achieve improvements in specified areas like competition, market growth and achievements and measure of how effectively each of these areas has been addressed (Aragon-Sanchez and Sanchez-Marin, 2005). Other than the hypothesis that business performance is affected by the adoption of EFDs, other factors are such as; individual level, Business Characteristics, and Business Strategy. Individual factors might include the following Motivation and Goals, Network Affiliation, social learning theory; human capital and owner's age (Canedo, 2014; Samad, 2013; Dharmaratne, 2012; Tundui & Tundui, 2011; Dana, 2007; Barringer et al, 2005; Aragon-Sanchez & Sanchez-Marin, 2005; Sara et al, 2004; Papadaki & Chami, 2002)

CONCEPTUAL FRAMEWORK AND MODEL

According to the study dependent variable is Business Performance and the independent variables is the individual factors such as; business environment; business strategy, EFDs adoption, and Parental influence. Individual factors were Educational level and owner's age, business characteristics were business experience and business size, EFDs adoption stands as it is, business strategy was represented by product differentiation and parental influence was guided by the Social Learning theory.

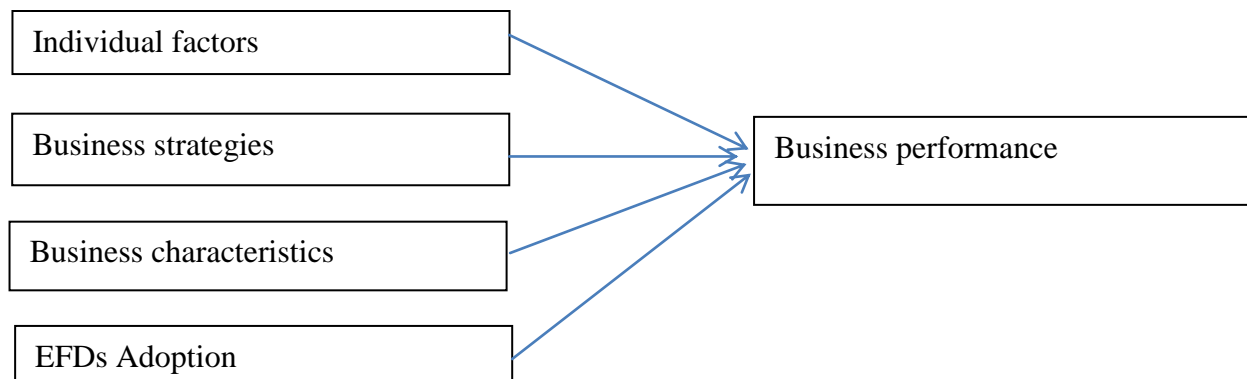


Figure 1 Conceptual framework

RESEARCH METHODOLOGY

Data collection

The data for the study was collected between August 2019 and September, 2019 in Tanzania in the East Africa region. The study used self-designed structured questionnaires to source its data from merchants who use Electronic Fiscal Devices (EFDs) in the city of Arusha in the capital of Tanzania. The questionnaire consisted of three sections; section one demanded demographics of respondents, section two requested respondents to answer questions with regards to the adoption of EFDs, and section three asked questions with regards to the effect that the adoption of EFDs has had on their business performance.

Sampling

The study used both convenient and random sampling techniques to select its respondents. Moreover, it used an online survey format which was distributed to the respondents through social media and emails. The sample size used for the study was 225 which have a good margin of error hence the study can reliability in its results. The details of the measurement of variables can be found in Table 1.

Table 1 Measurement of variables

Variables	Measurement
Business performance	Business cost and profit 5 Likert scale 1 = completely disagree, 2 = somewhat disagree, 3 = not disagree not agree, 4 = somewhat agree, 5 = completely agree.
Educational level	Years of schooling
Business size	Capital invested in the business
Owner's age	Individual's years of age
EFDs Adoption	Years of adoption
Business experience	Years of doing business
Parental influence	1 if yes, 0 otherwise
Product differentiation	1 if yes, 0 otherwise

Model Specification

The study used econometric methodology to derive its results and the method used was the logit regression model. The econometric model for the study can be found below. The model has both independent and dependent variables. Dependent variable is business performance and the independent variables are education level, business experience, product differentiation, adoption, owner's age, business size and parental influence.

$$Y = \beta_0 + \beta_1x_1 - \beta_2x_2 + \beta_3x_3 - \beta_4x_4 + \beta_5x_5 + \beta_6x_6 + \beta_7x_7 + \mu$$

Where: Y represents the dependent variable Business Performance, x_1 represents independent variable Education level, x_2 represents independent variable business experience, x_3 represents independent variable product differentiation and x_4 represents independent variable EFDs adoption, x_5 represents the independent variable Owner's age, x_6 represents the independent variable Business size and μ is a coefficient for other factors and for this case it stands for parental guidance. Coefficients of the model -

β_0 represent constant coefficient of the model, β_1 slope coefficient of independent variable x_1 , β_2 slope coefficient of independent variable x_2 , β_3 slope coefficient of independent variable x_3 , β_4 slope coefficient of independent variable x_4 and μ is the random error term which measures the extent to which the model cannot fully explain the effect of EFDs adoption on business performance.

RESULTS AND DISCUSSION

Description of respondents

Table 2 reports that demographic statistics of the respondents and from the table it can be reported that majority of the respondents were males by number of 165 representing 73.33% of the respondents and 60 were females representing 26.67%. However, majority of the respondents were within the ages of 36 years and 44 years by number of 126 representing 56% of the respondents, 45 were between 18 years and 26 years (20%), 24 were between 27 years and 35 years (10.67%), 30 were above 45 years representing 13.33%. The marital statuses of the respondents are as follows; 75 were married representing 33.33% and 150 were not married representing 66.67% of the respondents. Respondents were asked about their educational level and it can be reported that majority of the respondents had secondary education by number of 108 representing 48% of the respondents, 12 had primary education representing 5.33% of the respondents, 85 had bachelor degree representing 37.78%, 15 had master's degree representing 6.67% and 5 had PHD representing 2.22% of the respondents. As to whether the respondents have adopted the use of EFDs, 189 responded "Yes" representing 84% and 36 responded "No" representing 16% of the respondents. The type of business in which majority of the respondents were into is wholesale trading with 120 respondents representing 53.33%, 35 were into retail trading representing 15.56% and 70 were into supermarkets representing 31.11%. Majority of the respondents have between 1 – 5 years' experience in business by number of 118 representing 52.44%, 56 have 6-10 years' experience representing 24.89%, 35 have 11- 15 years' experience representing 15.56% and 16 have above 16 years' experience representing 7.11% of the respondents.

Table 2 Demographics of respondents

Demographic of respondents		Size	Percentage
Age	18 years - 26 years	45	20.00
	27 years - 35 years	24	10.67
	36 years - 44 years	126	56.00
	above 45 years	30	13.33
		225	100.00
Gender	male	165	73.33
	female	60	26.67
		225	100.00
Business Experience	1 - 5 years	118	52.44
	6 years - 10 years	56	24.89
	11 years - 15 years	35	15.56
	16 years and above	16	7.11
		225	100
Marital status	Married	75	33.33
	Single	150	66.67
		225	100
Business type	Wholesale	120	53.33
	Retail	35	15.56
	Supermarkets	70	31.11
		225	100
EFD adoption	Adopted	189	84
	Not adopted	36	16
		225	100
Level of education	Primary	12	5.33
	Secondary	108	48.00
	Bachelor	85	37.78
	Master	15	6.67
	PHD	5	2.22
	225	100	

Assessing the impact of the adoption of EFDs on business performance

The objective of the study is to assess the impact of EFDs adoption on business performance and the study employed ordered logit regression to analysis the data. Table 3 displays the results of the regression analysis and it can reported that the education level of respondents has positive and statistically significant impact on business performance with odds ratio of 0.812%, the business experience of users of EFDs showed positive and statistically significant impact on business performance and adoption of EFDs also showed positive and statistically significant impact on business performance. However, the size of business showed positive and statistically significant impact on business performance. Taking into consideration, how parental influence affect business indulging decision, the results confirmed that parental influence has positive and statistically significant impact on business performance. Perhaps, the positive relationship between the independent variables and the dependent variable confirm that there is a direct relationship between the two hence an increase in one will increase the other vice versa.

Table 3 Results of ordered logit regression analysis

	odds ratio	Z-statistics	P-value	Significance
education level	0.812	-1.87	0.062	*
business experience	0.895	-2.21	0.027	**
product differentiation	13.569	3.98	0.000	***
adoption of EFDs	3.060	1.82	0.069	*
Owner's age	1.204	2.65	0.008	**
business size	1.428	2.29	0.022	**
parental influence	3.520	1.79	0.074	*
constant	0.022	-1.86	0.063	*
No of Observations	225			
log likelihood	-40.091			
LR chi2 (7)	41.99			***
Pseudo R squared	0.344			

Note: ***indicates 1% significance level, **indicates 5% significance level,

* indicates 10% significance level

CONCLUSION

The study assessed the impact of EFDS adoption on business performance in Arusha city council in Tanzania. The study's sample size was 225, and it used structured questionnaires to collect its data through an online survey platform. However, the study's scope covered

merchants who use Electronic Fiscal Devices (EFDs) in the city of Arusha in the capital of Tanzania. The data were collected between August and September, 2019. The study used both descriptive and econometric methodology to analyze its data to make inference.

The study concludes that there are positive and statistically significant relationship between the educational level, business experience, product differentiation, adoption of EFDs, business owner's age, business size, parental influence and business performance in Tanzania. However, the adoption of EFDs which is of much interest showed a strong positive relationship with business performance. In other words, it means that when a business adopts the use of Electronic Fiscal Device (EFD), it will boost the business performance positively when the device also works positively, but when it works negatively so will the performance of the business will be.

The study recommends that the government organize frequent sensitization programs for users of the EFDs and that routine checks on the devices should always be done. Moreover, the cost of the device should be considered and should be affordable to the users.

The study acknowledges empirical limitations that might possibly be encountered in its course. However, it proposes that further study should be directed to include many respondents across the country and also socio-economic and socio-cultural factors be embedded into the enquiry to critically understand the technology adoption knowledge of the businesses as well as the patronizers.

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