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Effect of the use of Information and Communication Technology (ICT) on tax compliance of digital taxi business in Mombasa County

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ABSTRACT

Taxi business comes in various forms; there is the traditional taxi business model, a carhire service, or a digital taxi business in which online systems such as Apps are used for taxi hailing. ICT revolution has made technologies cheaper, more powerful and improved business processes while also bolstering innovation across all sectors of the economy, resulting to emergence of the digital economy. Digital economy is characterised by the use of electronic technologies to transact business. The prevalent use of technology for businesses has resulted to numerous tax challenges that has ultimately influenced tax compliance. Globally, most countries are faced with a critical need of enhancing tax compliance among their taxpayers. This research therefore attempts examine how the use of Information and Communication Technology (ICT) affect tax compliance of digital taxi businesses in Mombasa County? The research study therefore applies the theory of Technology-Organization-Environment (TOE) to understand the use of Information and Communication Technology (ICT) affect tax compliance of digital taxi businesses in Mombasa County. The study adopts a descriptive research in which we apply crosssectional study where we will draw samples that are representative of the specific population, with the target population being digital taxi drivers in Mombasa County. Data was collected with the help of questionnaires and analysed using the Statistical Package for Social Sciences (SPSS). The findings of the correlation analysis r=0.659 indicate that there is a strong positive correlation between ICT infrastructure and Tax Compliance. The study recommended that; KRA and policy makers should introduce a simple tax system for digital businesses to enforce and enhance accountability, declaration and payment of taxes due from all taxpayers; while at the same time KRA should also incorporate and adopt enhanced technologies that will assist in tracking digital taxi business operators' behaviour so as to improve tax compliance. The research recommends further researches on other factors such as organization structures, trade and government regulations that might also affect tax compliance for digital taxi businesses.

Introduction

Taxi business come in various forms, there is the traditional taxi business model where basically, a vehicle is parked in an open market strategic location in a town or an urban area, with a high demand for taxis, as clients choose a vehicle of preference. Secondly, we have a car-hire service taxi business model which allows one to hire a vehicle for a self-driven use or with a chauffeur. Finally, with the trendy application of Information and Communication Technology (ICT), we have metered taxis and taxi hailing services (Hayes et al., 2018).

Globally, traditional taxi business and metered taxis are slowly being phased out due to factors that range from, preference of the use of Information and Communication Technology, to limiting tendencies or factors that render these taxi business models unviable. According to Bizlink (2019), in South Africa for instance, using metered taxis has turned out to be a very unpleasant experience for most users. This is because there have been numerous reports of non-functioning meters, reckless or criminal drivers who pose a risk to passengers' personal security. In addition, these taxis are commonly unlicensed and unregistered. © 2021 Elixir All rights reserved.

The Organizations for Economic Cooperation & Development (OECD/G20) Base Erosion and Profit Shifting Project OECD (2014) deliverable states that digital economy is the result of a transformative process brought by information and communication technology (ICT). This ICT revolution has made technologies cheaper, more powerful, and widely standardised, improving business processes and bolstering innovation across all sectors of the economy, thus, resulting to the creation of online business models in sectors such as retail, logistics and transportation, financial services, manufacturing among others. Digital economy is characterised by the use of electronic technologies to transact business, electronic collaboration and information exchange.

This incorporation and use of Information and Communication Technology (ICT) in various business aspects has revolutionized the way we do business globally. Digital taxi business for instance, is a business that uses online systems (Apps) for taxi hailing Hayes et al. (2018). Regionally (specifically Kenya), taxi hailing companies such as Uber, Little Cabs, Taxify, and Mondo ride among others have become preferable due to reasons such as 'the offer of quick returns to investment', cheaper rates and not to mention the aspect of availability brought about by the use of ICT infrastructure. According to Hayes et al. (2018) Uber operates in 570 cities worldwide with Kenya having a substantial share or the market. This may be attributed by the recent advances in Information Technology that have changed the competition environment in many markets (Chang, 2017).

However, taxi regulators, government and user generally have simply not been expecting or really prepared for changes that have come with the introduction of digital taxi business model, that has equally come with a great deal of tax related challenges and disruptions OECD (2014) and Zimmermann (2000). For instance, in Kenya, KRA through a public notice of May 2019, noted that some taxpavers engage in online business and fail to file returns or pay taxes on the transactions. Moreover, there has been cases of travel being disrupted via public demonstration, due to disagreement between digital taxi owners and the government. Hayes et al. (2018) indicate in their research that in recent times, Uber has received negative press such as, the issues about its geolocation tracking of users, which raised a number of concerns regarding its privacy policies and potentially invasive data collection practices.

In addition, the prevalent use of technology for businesses, the digital economy, (Kim et al., 2011) has also resulted to numerous tax challenges, as it is evident from the OECD action plan report, that current tax rules are not fit for digital economy. In other words, "digitalization" is pervasive, making it very difficult, if not impossible, to ring-fence the digital world from the rest of the economy, including for tax purposes. This is the first finding regarding the tax challenges of the digital economy agreed by all G20 and OECD countries, under the Base Erosion and Profit Shifting (BEPS) Project.

Previously, tax systems were designed to tax sales of goods or services at the point of sale, and corporate and personal income in the location where it is earned. Taxation was typically framed by answering three basic questions according to Jeff Saviano, Americas Tax Innovation Leader: What are you taxing? Where is it? What's its value? Digital business models have created new types of assets, delivery mechanisms and even more new business models, thus, making the three basic questions hard to answer for both companies and tax agencies. (Zimmermann, 2000).

As a result of the above discussion, a need to ensure effective and efficient Tax administration on digital economy business models therefore arises, while at the same time, governments and global organizations are also increasingly getting concerned that some multinational digital companies are exploiting the mobility and intangible nature of digital platforms and goods, so as to sidestep tax (Herzog, 2018 and Goldfarb & Tucker, 2017), leading to a tax gap in taxation (Anderson et al., 2010). A global drive (championed by Organizations for Economic Cooperation & Development) to close the tax gap posed by the digital economy seems set to transform tax collection globally. In addition, policy makers need to ensure that tax revenues derived from digital trade are captured.

Tax compliance

Tax compliance cannot be discussed without basically understanding what Tax administration is. The European Commission's (2010) guide on Taxation and Custom Union states that Tax administration is the administration, management, conduct, direction, and supervision of the execution and application of the internal revenue laws or related statutes (or equivalent laws and statutes of a State) and tax conventions to which a government/state is a party. Tax administration includes assessment, collection, enforcement, litigation, publication, and statistical gathering functions under such laws, statutes, or conventions. According to Alink and Kommer (2016) Tax Administration is centred on the implementation and enforcement of tax legislation and regulations. As such the activities involved includes identification and registration of taxpayers, processing of tax returns and third-party information, examination of the completeness and correctness of tax returns, assessment of tax obligations, (enforced) collection of taxes and provision of services to taxpayers.

The European Commission's (2010) guide on Taxation and Custom Union identified that Tax administrations have to deal with a large number of risks, which include risks that are tax compliance related. As such, these risks may concern the risk of non-compliance, risk of tax fraud, risk of insolvency by taxpayer, among others.

Literature Review Theoretical Review

Technology-Organization-Environment Framework (TOE)

Tax compliance as a problem is as old as the idea of taxation itself. A review by Bello and Danjuma (2014) of various literatures has shown that individuals' compliance decisions are usually influenced by a number of factors such as, tax rate, personal factors, perception of the law and social influences. In addition, as far back as the year 1978, the IRS listed 64 factors that were believed to affect taxpayers reporting decision. It is therefore clear that Governments and tax administrations have an incentive to search for tax policy strategies that generate additional revenues, especially in times with large and persistent deficits (Feld et al., 2006).

Bello and Danjuma (2014) and (Devos, 2012) states that there are theories/models that can accommodate such factors, while at the same time, its only logical to concentrate on the factors that appear to have the highest impact on compliance levels, for specific contexts or situations at hand. The goal of tax administration is mostly to ensure voluntary compliance. This can be achieved by understanding taxpayers' behaviour, attitude and other economic factors that may influence tax compliance. The literature review in this chapter therefore provides a critical analysis of the key concepts on the subject matter. According to (Baker, 2011) Technology-Organization-Environment (TOE) framework is a theory that states that the process by which a firm or business adopts and implements technological innovations is influenced by the technological context, the organizational context, and the environmental context of the business (Tornatzky & Fleischer, 1990).

Baker (2011) further states that there are models which describes an entire process of innovation, stretching from the development of innovations by engineers and entrepreneurs to the adoption and implementation of those innovations by businesses within the context of a firm. However, the TOE framework represents a segment of this process which describes how the business/firm context influences the adoption and implementation of innovations. The TOE framework is a theory that explains that three different elements of a firm's context influence adoption decision. These three elements include the technological context, which includes all the technologies that are relevant and available to a firm in a market place; the organizational context, which refers to the characteristics and resources of the firm. The resources include linking structures between employees, communication processes, firm size and available resources. Finally the environmental context element includes the structure of the industry, the presence or absence of technology service providers, and the regulatory environment. All of these three main elements influence technological innovation, a basic factor for digital taxi business (Kim et al., 2011). The TOE theory has been used by various researchers to explain the adoption of inter-organizational systems, Electronic Data Interchange (EDI), open systems, enterprise systems and broad spectrum of general Information Systems (IS) application. The adoption of innovations is clearly affected by the discussed elements, therefore, given this reality, it appears that the TOE framework will continue to provide useful guidance for researchers and practitioners (Baker 2011).

According to a report by The World Bank Group and PwC, the latest edition of Paying Taxes (2018) the use of technology by business and government, in tax compliance is driving continued simplification and reduction in the burden of tax compliance on businesses. The report finds that the time to comply declined by 5 hours to 240 hours; and the number of payments by 1 to 24 payments. In addition, according to a report by Deloitte (2016) changes in technology have dramatically changed the tax compliance landscape and the ability of the tax authorities to gather and analyse information, as new digital business models also emerge quite frequently, making the application or adoption of technology and Information Systems, critical for most businesses. The report also urges that taxpayers must be prepared to use technology to meet their tax compliance obligations and respond to any inquiries from the tax authorities.

Empirical Review

In this section, we review studies that have been conducted in relation to digital taxi business and digital economy.

In a research done by Rothengatter (2008) the researcher utilizes focus-group interviews to explore taxi-operators and drivers views on taxation, their perceptions of fairness and trust, and elucidate how individual taxi-workers justify circumvention of Australian tax laws and regulatory measures in their actual work practices. The study findings showed that there exist different forms of cheating and non-compliance to tax rules that have turned out to be endemic to the industry. The main cause of this factor according to the researcher is that cab-drivers are subjected to a multitude of structural arrangements and social control mechanisms, which influence their attitudes and actions with regard to non-compliance. Suggestions such as enforcement strategies such as withholding tax at the source, can be used to overcome such socio-political limitations. In addition, implementing cheaper fares/rates for consumers, improving working conditions and employment of qualified drivers, that is to say, generally upgrading the quality and level of performance from existing taxi services, would bring better rewards for the stakeholders.

A research by Oei and Ring (2016) poses the question, 'Can sharing be taxed?' The researchers refer to the rise of a new model of production and consumption of goods and services as the "sharing economy". According to the researchers, new business models such as Uber and Airbnb, enables individuals to obtain rides, accommodations, and other goods and services from peers via personal computer or mobile application in exchange for payment. A 'big' question therefore arises as whether such digital business models can be adequately and accurately taxed, since these digital business models have raised questions about how they should be regulated, including whether existing laws and regulations can and should be enforced in this new sector, or whether new ones need to be enacted. In the research, the questions are explored in the context of taxation. According to the researchers, tax enforcement and compliance may present challenges, as a result of two distinctive features; existence of ambiguities in tax laws where some businesses opportunistically pick the more favourable regulatory interpretation if there is any ambiguity regarding which rule applies or whether a rule applies, which lead to compliance and enforcement gaps. Secondly, the common "microbusiness" nature of such digital business models raises unique compliance and enforcement concerns. The researchers then suggested strategies for addressing these dual challenges, which included lower information reporting thresholds, safe harbours and advance rulings to simplify tax reporting, and targeted enforcement efforts.

The research by Murphy (2016) also refer to the rise of new digital business models as a "sharing economy" while their main principal concern being how to, or even whether to develop ways of regulating the activities of such digital business models. From the researchers' point of view, it is clear that these digital businesses have challenges that require regulation. For instance, taxi regulations are largely determined by the cities the taxi service companies and drivers work in. This means that, as much as there may be common regulations across the board, individual cities' authorities ultimately determine the principal legislations and regulations that govern the businesses. Two common regulations require taxi firms to offer universal access: covering the entire city and ability to transport anybody without discrimination. In addition, other requirements include, registration, vehicle inspections and maintenance, caps on prices, universal accessibility, extensive background checks, and minimum insurance requirements. These regulations may also vary by municipality. The researcher points out that some of these digital businesses avoid and elude certain expenditures such as applying for permits and licenses, passing periodic health and safety inspections, and paying tourist taxes among others. By avoiding these expenses, the businesses have a financial advantage with none of the responsibilities or consumer safeguards guaranteed by city regulations. Such tendencies, due to lack of better enforcement measures, have proven hard to tame and control. Inconsistency between municipal or jurisdiction regulations have resulted in varied approaches to regulating companies such as Uber. From the local news platforms such as the report by Hayes et al. (2018), it is evident that digital taxi businesses have infringed on the same services provided by the heavily regulated taxi industry, which has been known to spark protests amongst the digital taxi service providers and users.

In other cases, it has also become unclear whether the digital taxi service provider should be taxed consumption tax such as VAT (Value Added Tax) from the host location or from its partner/driver service providers in the oversea jurisdiction. Taxing software providers Value Added Tax has also become a challenge in many jurisdictions.

The OECD (2018) Report highlighted and outlined the unilateral measures relevant to digitalization that have been introduced by countries and grouped them into four categories: alternative applications of the PE threshold, withholding taxes, turnover taxes; and specific regimes targeting large Multi-National Enterprises. These measures are characterized by aiming at protecting and/or expanding the tax base in the country where the customers or users are located, by including elements linked to a market in the design of the tax base (e.g., sales revenue, place of use or consumption) and by reflecting a discontent among some countries with the taxation outcomes produced by the current international income tax system.

Conceptual Framework



Independent variable

Dependent Variable

Figure 2.1. Conceptual Framework ICT Infrastructure

ICT Infrastructure encompasses all the devices, networks, protocols and procedures that are employed in the information technology fields to foster interaction amongst different stakeholders (Bwalya, 2012). It Includes computer hardware (servers and related workstations), network connectivity with accessories, and all necessary equipment including the use of an android phone or an iPhone (Keengwe, 2015). These form important elements that facilitate the infrastructure for the operations of a digital taxi business.

Indeed, ICT Infrastructure used in the business, constitutes to all the information and communications technology, and other systems infrastructure necessary to carry on the business. This includes having sufficient capacity, maintenance and support requirements to satisfy the general requirements of the business with regard to Information and Communications Technology (ICT) and data processing (Bahrini & Qaffas, 2019). The actual character of the use of ICT is often obscured by the increase in jobs labelled as digital services, and by a focus on the digital technologies that, certainly, are facilitating a transformation various systems including tax systems. Such on transformations affect basic policies and business choices (Šestáková, 2018). The effective use of information and communication technology (ICT) as an important driver productivity growth and economic structural of optimization (Guo et al., 2018).

Digital Services are increasingly the way that businesses' pursue value-added activities (Toader et al., 2018). According to a report by GOK (2019) a taxi-hailing company, Little Cab, powered by an app managed by a mobile network services provider Safaricom, has been operational and has made debuts in Uganda and Rwanda. Uber further innovated by launching an option for motorcycles (locally known as 'boda boda') dubbed "Uber Boda" and Uber Tuk Tuk services that now provides an additional value to the original model. It is therefore clear that policies and tax legislation need to be implemented and enforced to enhance tax administration on such digital business models.

Methodology

The research design used in this study is a descriptive research in which we apply cross-sectional study where we measure units from a sample of the population at only one point in time. The target population under this study is digital taxi business operators in Mombasa County. This population was 170 respondents according to a report by Kenya Digital Taxi Association (2019). The study adopted a probabilistic sampling technique, which is precisely done in a simple random technique, where each member of the population has a known and equal chance of being selected. The random sampling technique was chosen due to the ubiquitous nature of digital taxi businesses. To attain this, a sampling frame was gotten from the digital taxi business operators within Mombasa County from which a sample of 170 respondent was obtained. According to Saunders et al. (2009) probabilistic sampling is simply a representative sampling where a researcher needs to make inferences from a sample about a population to answer research question(s) or to meet objectives. The researchers further state that larger a sample's size the lower the likely that an error will occur while generalising the population. A sample size is the number of sampling units selected from the population for investigation (Chandan et al., 2010). The researcher used Slovin's formula to determine sample size as shown. This is mostly due to the fact that digital taxi business has a ubiquitous nature, hence nothing about the behaviour of the population is known at all. $n = N/(1 + Ne^{2})$

$$n = N/(1 + Ne^{-2})$$

Which is an equivalent of; $n = N/(1 + Ne^2)$

$$n = N/(1 + I)$$

Where:

n = the sample size

N= population size

e = margin of error to be decided by the researcher (error tolerance at 95% confidence level)

 $n = 170 / (1 + 170 (0.05)^2)$

 $n = 170/(1 + 170 * 0.05^2)$

$$n = 119^{'}$$

Regression analysis was used to determine the relationship between the independent and dependent variables as well as determine the combined effect of all the independent variables on the dependent variable. The R^2 analysis was used to measure the goodness of fit of the model being assessed.

The following regression model was used to model the data.

 $Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where;

Y is Tax Compliance

 $\boldsymbol{\beta}_0$ is Regression intercept

 β_1 is regression coefficient of variable which measures the extent to which the variation in Y is explained by the variations in X.

 X_1 is ICT Infrastructure

Findings

ICT Infrastructure

The respondents were requested to indicate the extent to which ICT infrastructure affected tax compliance in Mombasa County. From the findings, the respondents agreed with the statement, with a mean of 3.97 and a standard deviation of 0.322 indicating their reliance on the taxi hailing Apps. Also, the respondents agreed that they relied on

Table 4.6 ICT Infrastructure							
Statement	Mean	Std Dev.					
To what extent do you rely on the taxi hailing Apps?	3.97	0.322					
To what extent do you rely on the Google maps?	3.10	0.458					
To what extent do you rely on Internet connectivity?	3.98	0.151					
To what extent do you rely on using a Smartphone?	4.00	0.000					

Regression

Table 4.14 illustrates the results obtained from the regression analysis. The model adopted is presented below.

Ľ	Coefficients"							
Model		Unstandar	dized Coefficients	Standardized Coefficients	t	Sig.		
		В	Std. Error	Beta				
1	(Constant)	3.943	1.099		3.587	.001		
	ICT_infrastructure	.271	.075	.307	3.637	.000		
	G 1'							

a. Dependent Variable: Tax_Compliance

Google maps, with a mean of 3.10 and standard deviation of 0.458. Further, the respondents agree that they relied on internet connectivity with a mean of 3.98 and standard deviation of 0.151; while, a mean of 4.00 and standard deviation of 0.000 respondents agreed to be using smartphones.

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Subsequently based on the findings Tax compliance = $3.943+0.271X_1+\varepsilon$ therefore, Tax compliance = 3.943+0.2777 ICT infrastructure + ε .

According to the regression, an increase in the value of ICT leads to increase of compliance by a factor of 0.277 due to ICT infrastructure.

Conclusion

The study found out that ICT Infrastructure forms a very important element that facilitates the operations of a digital taxi business in Mombasa County. Through descriptive analysis, the study further found out that digital services are increasingly the way that businesses' pursue value-added activities, which affected tax compliance of digital taxi business in Mombasa County, as it was hard to determine the extent of those activities for tax administration purposes. The identity and role of the parties involved were determined, however, it was impossible to ascertain the extent of sales or other activities without information from the clients, as there was no sales or accounting records. There was also the problem of how to separate digital services from non-digital transactions which was actually relevant for attempts to impose a final withholding tax or even Value added tax on the consumption or the gross payments made.

Recommendations

The study established that technology and ICT positively impact digital taxi business in Mombasa County and globally, leading to the development on new digital business models. Thus the researchers identified some digital economy tax challenges that essentially affect tax compliance. These challenges included, Nexus, reliance on data and challenges with regard to consumption tax. From the foregoing analysis, the study recommends that;

1. Revenue collecting organizations such KRA and policy makers should introduce a simple tax system for digital businesses, which are user friendly so as to enforce and enhance accountability, declaration and payment of taxes due from all taxpayers.

2. KRA should incorporate and adopt enhanced technologies that will assist in tracking digital taxi business operators' behaviour so as to improve tax compliance.

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55337