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# EFFECTS OF TAXATION ON THE GROSS TURNOVER OF SME'S IN UGANDA

***Ismail DIRIE,*** (MA.)

Istanbul Commerce University, Turkey

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## Abstract:

*This study was undertaken to assess the relationship between tax liability and gross turnover of small and medium enterprises over a period from 2002 to 2018 in Uganda. It aimed to determine the relationship between taxation and gross turnover of small and medium enterprises, as well as economic growth. The specific objective of the research was to evaluate the effect of tax rates on the gross turnover of small and medium enterprises. Primary data was obtained from respondents inform of surveys while the secondary data, tax liability and gross turnover, was collected from Uganda's revenue authority sources. The study adopted the Granger causality test, unit root test, and stability test and the following findings were determined: first, taxation negatively affects the gross turnover of SMEs.The outcome of the Granger causality test indicates that there is a statically significant negative relationship from taxation to gross turnover by 0.0372 at a 95% significance level. Second, there is a negative relationship between taxation and gross turnover which hurts the growth of the economy. This means an increase in taxation causes a decrease in economic growth. The study concluded that the effect of taxation on the gross turnover of SMEs is due to high rates of tax on one hand and taxpayers who don't know their tax obligation on the other hand. The study provides evidence that help policy makers and the state to balance the requirements and the objective of SMEs for profit and growth. There is a need for tax restructuring, as well as tax education to taxpayers.*

**Key Words:** taxation, gross turnover, Granger causality test
**Jel code:** M13, H25, and F30.

## 1. Introduction

Economic growth is an increase in the total production or revenue in a country during a particular time (Poulson, 2008). Taxes are money received from residents of a country, who have a taxable income.nSmall and medium enterprises in Uganda account for 90 percent of total establishments in three key economic sectors, namely manufacturing, services, and agriculture.

Large establishments account for 10 percent. . The presence of small and medium enterprises in the manufacturing, service, and agriculture sectors are 49 percent, 33 percent, and 8 percent respectively. (Balunyawa, 2006). The employment generated by small and medium enterprises was approximately 2.5 million workers of total employment of 4.0 million in the three main sectors. The role of small and medium enterprises is demonstrated by their contribution to the output and value-added, Ush 500 million and Ush 200 million respectively. In terms of share contribution, small and medium enterprises accounted for 68.4 percent of the total output and 49 percent of value-added. It is noted that small and medium enterprises in the agriculture sector contributed the largest share, 88.8 percent, and 65.3 percent respectively. SMEs in the manufacturing sector saw a 40 percent contribution in output and 29.1 percent in value-added. (Balunyawa, 2006).

### *1.1. Statement of the Problem*

Despite the profound contribution of small and medium enterprises to the economic growth in Uganda, the growth of these businesses continued facing risks that limit other entrepreneurs. Though these businesses have succeeded in reducing overall unemployment, the number of small and medium enterprises going out of business has been increasing over the years

(Nsubuga, 2008). The case can be justified to higher tax rates or other factors which restrain the growth of these firms. The study is primarily carried out to test the relationship between tax rates and gross turnover of small and medium enterprises. Why do tax rates cause firms to go out of business and reduce economic growth in Uganda? We were interested in answering this research question.

Evidence on the relationships between taxation and gross turnover and economic growth put forward that taxation hurts gross turnover and economic growth.
This is in line with the results of (Atems, 2015), (Stoilova, 2017), and (Badri and Allahyari, 2013). They have established that higher taxes do hurt economic growth in 48 states of the United States and 28 European Union countries.

### *1.2 Hypothesis of the study*

We test the bellow hypotheses linking taxation, gross turnover, and economic growth. Theoretically, gross turnover serves as a vital source through which positive taxation transmits to economic growth. A premise follows that increased gross turnover of small and medium enterprises create employment and increase output level then contribute positively to productivity and growth. Improving taxation systems, in turn, creates more opportunities, thereby increasing contributions to economic growth. Therefore, the study develops the following null hypotheses for this study:

- Taxation does not granger cause gross turnover of small and medium enterprises of Uganda;
- Gross turnover does not granger cause taxation on small and medium enterprises in Uganda.

### *1.3 Objectives of the study*

The specific goal of the study is to determine the relationship between the gross turnover of small and medium-sized firms and taxation in Uganda, using yearly data over the period from 2002 to 2018. Specifically, the following issues were addressed;

- Assessing the effect of taxation on gross turnover of small and medium enterprises in Uganda;
- Estimating impact of taxation on economic growth in Uganda;
- Analyzing causal relations between taxation and gross turnover of small and medium enterprises.

## 2. Literature Review

Several studies were carried out to examine the relationship that exists between taxation, gross turnover, and economic growth. This section of the study looks at various empirical studies which investigated the relationship between taxation, gross turnover, as well as economic growth.

The study carried out by Skinner (1987) examined the relationship between taxation and gross turnover of small and medium firms to economic growth by using cross data and then it found out that there is a negative relationship which exists between taxes and gross turnover. Other studies have the same outcome and these include (Dowrick, 1992), (Easterly and Rebelo ,1993), (Badri and Allahyari ,2013), (Zellner and Ngoie, 2015), (Canicio and Zachary ,1975), (Atems, 2015), (Szarowska, 2010) and (Stoilova ,2017).

Dowrick (1992) conducted a study on the organization for economic co-operation and development (OECD) countries from 1960 to 1985. The study established that there is a strong negative effect of taxation on gross turnover. (Easterly and Rebelo, 1993) discovered some

measures of tax distortion to be negatively related to economic growth, however other tax distortions were less important when it comes to economic growth.

Badri and Allahyagri (2013) examined the effect that taxation and gross domestic product render on employment by using Iranian data from 1976 to 2007 basses on the autoregressive distribution model (ARDL). The findings from the estimation of long-term and short-term patterns show that taxation does cause a negative effect on employment, while the gross domestic product does have a positive effect on employment.

Zellner and Ngoie (2015) carried out a study to examine the impact of tax on economic growth by using the Marshallian Macroeconomic model in the United States from 1987 to 2008. The outcome showed that taxes tend to harm the growth of the economy. Canicio and Zachary (1975) examined the effects of taxation in Zimbabwe using data over the period 1980 to 2012. The study used the granger causality test and vector error model to find out the existing relationship. The findings revealed that taxes affect resource allocation and cause distortion to the growth of the economy.

Szarowska (2010) carried out a study to examine the changes in taxation and the impact those changes have on economic growth in European Union. The analysis was conducted using yearly panel data of twenty-four countries in the European Union over the period from 1995 to 2008. The outcome revealed that there exists a significant negative relationship between taxation and gross domestic product. The study shows that a reduction of direct tax by 1% causes a growth rate of 0.43% in gross domestic product.

Stoilova (2017) researched to determine the relationship between tax structure and economic growth using data from 28 European Union countries over the period from 1996 to 2013. The study used Barro's endogenous model and discovered that total revenue affects the economy.

The study revealed that personal income tax has a positive impact on economic growth but corporate taxes have a negative impact on the growth of the economy.

Chigbu (2012) investigated the causality between small business gross turnover and taxation in Nigeria for the period 1970-2009. The data gathered were analyzed with the help of econometric models such as Augmented Dickey-Fuller, Diagnostic Tests, Granger Causality and Johansen Co-integration. The outcome from the econometric analysis showed that taxation as an instrument of fiscal policy affects the economic growth and taxation granger causes economic growth of Nigeria.

## 3. Data And Methodology

In this study, the effect of taxation on the gross turnover of small and medium enterprises and economic growth in Uganda is analyzed using yearly data over the period 2002 to 2018. Different sources were used to collect data on the variables that are used for this study. Primary data was collected using surveys. The study picked 100 population of small and medium enterprises and afterward came up with a suitable sample size of 80 participants. Gross turnover and Tax liability were gathered from the Uganda Revenue Authority. The study used the granger causality test to analyze the causal relationship between taxation and gross turnover.

To test the relationship and the effect taxation has on gross turnover, the study used the granger causality test. A simple Granger causality test involving two variables, taxation and gross turnover Is written as

$$GT = \sum_{i=2}^{n} aiTL_{t-i} + \sum_{j=1}^{n} B_j\, GT_{t-j} + U_{1t}$$

$$TL = \sum_{i=2}^{n} n_i TL_{t-i} + \sum_{j=1}^{n} \delta_j\, GT_{t-j} + U_{2t}$$

Testing the null hypothesis: H0: α= 0, this hypothesis means that Tax liability does not Granger cause gross turnover against the alternative hypothesis H1: α ≠ 0, this hypothesis means that tax liability does Granger cause economic growth.

Similarly, testing H0: δ = 0, this hypothesis means that gross turnover does not Granger cause tax liability against H1: δ ≠ 0, which means that gross turnover does Granger cause tax liability.

The study also used another econometric model to determine the impact of taxation on economic growth. The model runs a multiple regression analysis between gross domestic products, taxation, and gross turnover, and trade openness.

Linear regression equation $INGDP_t = a + \beta_1 LTX_t + \beta_2 LTR_t + \beta_3 LK_t + u_t$ (3.1)

$GDP_t$= Gross domestic Product

$TX_t$ = Tax on gross turnover

$TR_t$ = Trade openness

$k_t$ = Capital

$\alpha$ = Constant

$\beta 1, \beta 2\ and\ \beta 3$ = Slope Coefficients

The study undertook a test to see whether variables are stationary or non-stationary to exam the long-run relationship between variables. The Augmented dickey fuller was used to examine the non-stationarity of the series variable in the levels and the first difference. The Augmented dickey fuller is a modification of the dickey fuller test and the lagged values are part of the estimation of an equation as follows:

$\Delta Z_t = \theta + (P-1)Z_{t-1} + \gamma T + \delta \Delta Z_{T-1} + \varepsilon_{2t}$ (3.2)

In the empirical analysis, the study used the Philips and perron (PP) test because the ADF tests do not take into account cases of heteroscedasticity and non-normality. The PP test is more suitable when the time series has serial correlation, as well as structural breaks. This test is based on the form of the equation below.

$$\Delta Z_t = \theta + (P-1)Z_{t-1} + \gamma\left(t - \frac{T}{2}\right) + \delta\Delta Z_{r-1} + \varepsilon_{3t} \quad (3.3)$$

The study applied the ARDL bounds testing to examine the relationship between economic growth and taxation in Uganda. The ARDL bounds testing to co-integration was invented by Pesaran, Shin, and Smith (2001). This technique is employed to examine the long-run linkage between series of a different order of integration (Pesaran, 1999) and (Pesaran et al. 2001). Co-integration mimics an existence of a long-run equilibrium among the economic time series of interest which cover over time. to keep long-run information intact, modeling time series is carried out with the help of co-integration. This model has become a frequently used model due to its advantages. It is advantageous when there is a single long-run relationship because the procedure of ARDL can identify between dependent and explanatory variables. It assumes the relationship that exists between dependent variables and exogenous variables is a single reduced form of an equation. (Pesaran, 2001).

The model estimates the below conditional error correction models:

$$\Delta \mathrm{LGDP}_t = \alpha_1 + \alpha_t T + \alpha_{GDP} LGDP_{t-1} + \alpha_{TX} LTX_{t-1} + \alpha_{TR} LTR_{T-1} + \alpha_k LK_{t-1} +$$
$$\sum_i^p = 1\alpha_i \Delta LGDP_{t-1} + \sum_j^\alpha = 0\ \alpha_j \Delta TX_{t-j} + \sum_k^r = 0\ a_k \Delta tr_{t-k} + \sum_s^s = 0\alpha_s \Delta K_{t-s} + \varepsilon_{1t} \quad (3.4)$$

Δ Is the first difference operator. In the equation, T is the time trend, ΔGDPt is the gross domestic product, logTXt is the taxation inform of a logarithm, the trade openness is logTR and logKT is the capital.

The procedure when it comes to the bound test, the F-test is used for examining the existence of a long-run relationship. It tests the joint significance of lagged level variables. Below is the null hypothesis of the equation for the nonexistence of co-integration;

$$H_0 = \alpha_{GDP} = \alpha_{TX} = \alpha_{TR} a_k = 0$$

This is tested against the alternation hypothesis.

$$H_1 = \alpha_{GDP} \neq \alpha_{TX} \neq \alpha_{TR} \neq \alpha_k \neq 0$$

$H_0$ Is rejected if the F-statistics exceed the upper critical value. But it is accepted if the F-statistics fall below the lower critical value. For the first case, the result is concluded in favor of co-integration but when the F-statistic occurs within two bounds, afterward the cointegration test turns out inconclusive.

## 4. Findings

### *4.1 Survey results*

**Table 1. Effects of Taxation on Small Business**

| Detail | No. Of respondents | Percentage |
|---|---|---|
| Greatly | 40 | 50 |
| Moderately | 25 | 31.25 |
| Fairly | 0 | 0 |
| Does not affect | 15 | 18.75 |
| Total | 80 | 100 |

Source: Primary data

Taxes affect the profitability of business resources (Mutebı, 2004). Sales tax on small businesses greatly reduces it is profitability, limits it as leverage of growth, and creates poor

revenue performance, (ASıo, 2004). As depicted in table 1, the findings indicate that 50% of the respondents saıd it affects greatly the survival of their businesses while 31.25% of the respondents asserted that sales tax moderately affects the survival of their business.

### *4.2 Inferential Analysis*

#### *4.2.1 Unit Root Tests*

The study carried out unit root tests to check the validity of ARDL method of cointegeration. ARDL cointegeration method can be valid if the variables are stationary in the case of I(0) or I(1) or a mixed integrating order. The unit root tests- the augmented Dickey- fuller test (ADF) and the Philips-Perron test (PP) – are usually applied to verify whether each variable is stationary or not. As shown in Table 2, the variables are not stationary at level form for both ADF and PP tests. The result of first difference indicate that the variables in question are stationary at 1%, 5% and 10% levels of significance for both ADF and PP tests. This implies that ARDL model is valid.

Table 2: Unit Root Test Results

| | ***Levels*** | | ***First difference*** | |
|---|---|---|---|---|
| ***Variable*** | ***ADF*** | ***PP*** | ***ADF*** | ***PP*** |
| ***LGDP*** | ***-2.11*** | ***2.24*** | ***-3.96***** | ***-3.88***** |
| ***LK*** | ***-2.37*** | ***-3.98*** | ***-4.67**** | ***-4.58**** |
| ***LTR*** | ***-3.51*** | ***-3.57*** | ***-5.00**** | ***-5.35**** |
| ***LTAX*** | ***3.23*** | ***-2.66*** | ***-5.28**** | ***-9.97**** |

#### *4.2.2 Bounds test to Co-integration*

The ARDL bound test is applied to check the existence of a cointegeration relationship among the variables. The findings are presented in table 3. The upper bound assumes that all regressors are I(1) and lower bound assumes that the regressors are 1(0). Here, the null

hypothesis of F-Bounds test is that there is no cointegeration among variables. If the findings of the F-statistics is below the lower bound, the null hypothesis will be accepted. If the F-statistics is higher than the upper bound, the null hypothesis will be rejected and cointegeration among the variables is verified. Since the calculated value of F-statistics is 8.53 which is higher than the upper bound at all levels of significance, the null hypothesis is rejected. The result indicate the existence of long-run cointegeration among the variables.

**Table 3: Bound Test**

| *Test statistics* | *Value* | *Significance* | *I (0)* | *I (1)* |
|---|---|---|---|---|
| *F-statistics* | *8.531916* | *1%* | *3.66* | *4.67* |
| *K* | | *5%* | *2.77* | *3.66* |
| | | *10%* | *2.38* | *3.3* |

### *4.2.3 Estimation Results of Long-run and Short-run Elasticities*

As shown in table 4, the sign of the long-run coefficients of capital and trade openness are positive whereas the one of tax on gross turnover is negative. This means that capital and trade openness increase and tax on gross turnover decrease.

The long-run elasticity for capital, trade openness and tax on gross turnover are 0.21, 0.48 and – 0.01 respectively, meaning a 1% increase in capital and trade openness is expected to increase economic growth by 0.21 and 0.48 respectively whereas 1% increase in taxes is expected to decrease economic growth by -0.01. This is in line with the results found by Khobia, Abel and Le Roux (2016).

**Table 4: Long Run Results**

| Variables | Coefficient | T-statistics | Probability |
|---|---|---|---|
| C | 9.63 | 15.37 | 0.0013 |
| Lcapital | 0.21 | 3.56 | 0.00 |
| LTrade | 0.48 | 7.67 | 0.00 |

| | | | |
|---|---|---|---|
| openness | | | |
| LTax on gross turnover | -0.01 | -2.76 | 0.0094 |
| $R^2$ | 0.98 | | |
| DW | 1.32 | | |

As shown in table 5 of short-run results, capital has a negative impact on economic growth and it is not significant at all levels of significance. It also shows that trade openness impacts economic growth positively and this is not the case at all levels of significance. Also, the outcomes reveal that taxes have a negative impact on economic growth and are significant at 5% levels of significance.

In table 5 of short-run results, the value of ECM is negative at a 5% level of significance. The estimate is of ECM (-1) tends to be -0.12. If the ECM is negative, it is said to support the results of the long-run relationship. As shown by the results, the deviations of short-run from long-run equilibrium are correct by 12.24 toward long-run equilibrium annually.

**Table 5. Short-run Results**

| Variable | Coefficient | T-statistics | Probability |
|---|---|---|---|
| C | | | |
| Lcapital | -0.027 | -1.25 | 0.22 |
| LTrade openness | 0.0343 | 1.697 | 0.10 |
| Ltax on gross turnover | -0.0037 | -2.206 | 0.03 |
| ECM(-1) | -0.1223 | -1.98 | 0.05 |

### *4.2.4. Short-Run Diagnostics*

The study used the Breush-Godfrey test to examine serial correlation because the p-value of the serial correlation test tends to be insignificant. This implies that in the residuals of the models, there is no serial correlation.

With the help of the Breush-Godfrey test, the study found out that in the residuals of the model, there is no heteroscedasticity since the p-value is significant. the test also was done to check for normality and the results show that the p-value of Jarque-Bera tends to be greater than 0.1. it means that the residuals are normally distributed. The results indicate the short run not to be spurious because of Durbin-Watson statistics which was found to be greater than $R^2$.

**Table 6. Diagnostic Test**

| | *F- F-statistics* | *P Probability* |
|---|---|---|
| *t BG serial correlation test* | *1.55 1.55* | *0.22 0 .22* |
| *BPG Heteroscedasticity test* | *1.63 1.63* | *0.17 0.17* |
| *Normality* | *0.168* | *0.930.93* |

### *4.2.5 Stability Test*

The study applied the cumulative sum of recursive residuals (CUSUM) and CUSUM of recursive residuals to examine the stability of long-run parameters. The null hypothesis cannot be rejected at a 5% level of significance if the plot of the test is within the critical limits. Here the short-run and long-run estimates tend to be efficient and reliable because the test lies between the upper and lower critical limits. It indicates the model is stable.

**Figure 1: Plot of Cumulative Sum of Recursive Residuals**

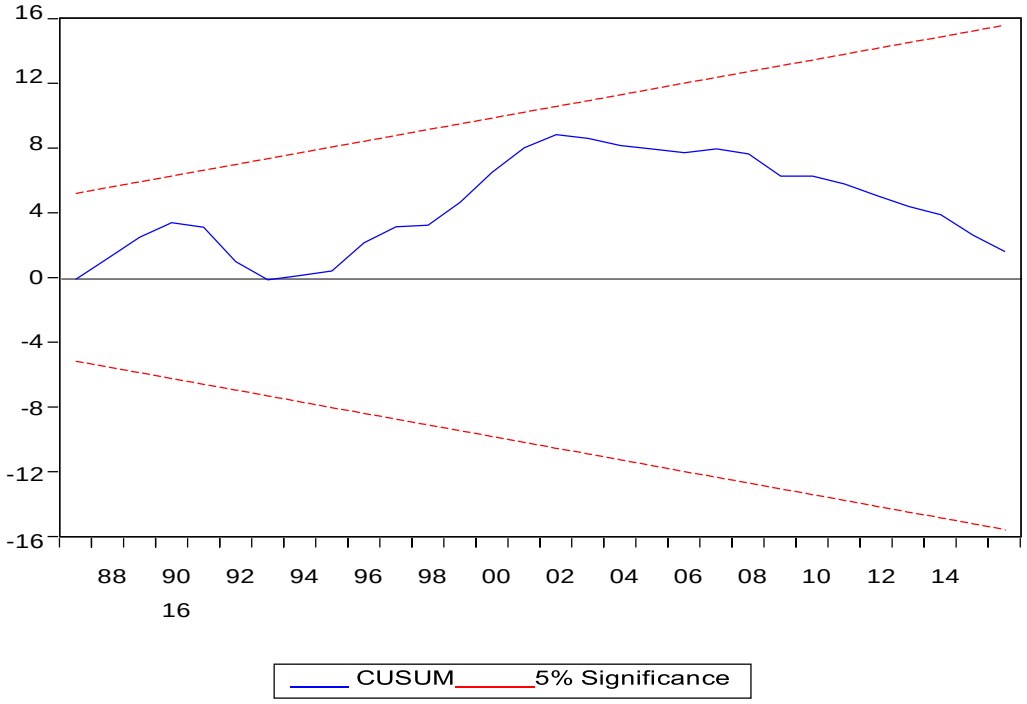
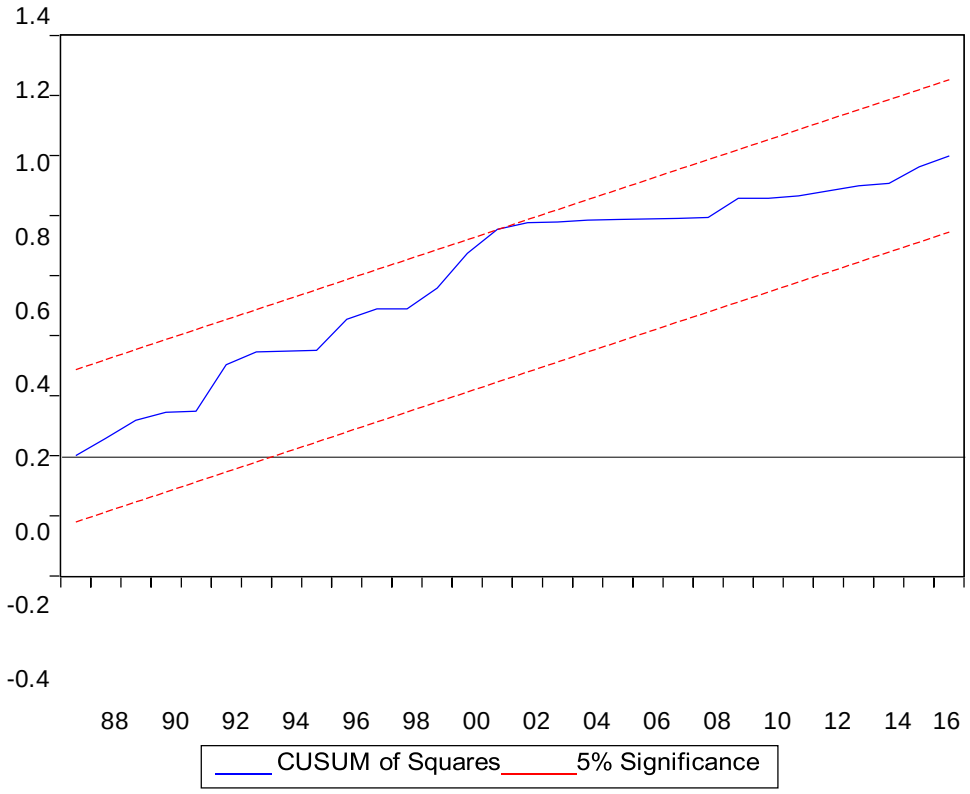


**Figure 2: Plot of Cumulative Sum Of Squares Of Recursive Residuals**




### *4.2.6 Granger Causality Test*

Table 7. Causality test

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|---|---|---|---|
| GT does not Granger Cause TL | 15 | 0.22209 | 0.8047 |
| TL does not Granger Cause GT | | 4.65554 | 0.0372 |

The outcome of the Granger causality test indicates that there is a statically significant negative relationship from taxation to gross turnover by 0.0372 at a 95% significance level.

As shown in the table there exist a causal relationship between tax liability and gross turnover at 0.0372 but in one direction so that changes in tax liability have effects on gross turnover and not vice versa, where tests showed causal there was no effect of changes in gross turnover on tax liability.

This means that an increase or a decrease in tax liability can affect and causes gross turnover at a 95 % significant level. On the other hand, gross turnover does not seem to Granger Cause tax liability. This suggests that information about gross turnover in past periods cannot explain the behavior of tax liability in the present time.

## 5. Conclusion

This paper has examined the relationship between tax liability and gross turnover of small and medium enterprises in Kampala using descriptive statistics from the primary sourced data.it as well as used secondary data obtained from Uganda Revenue Authority for causality tests over the period from 2002 to 2018. The outcome revealed that the majority of small and medium business owners in Kampala city are male, literate, and also it was observed that the majority of the businesses of this kind do not last for more than three years in operation.

The study also employed the Autoregressive Distribution Lag (ARDL) approach to co-integration to examine the short-run and long-run relation among the variables in the question. The outcome shows that taxes have a negative impact on economic growth and are significant in the short- run and long –run. This is in line with Atems (2015), Stoilova (2017), and Badri and Allahyari (2013)

The results showed that most small and medium enterprises are not registered for tax and the ones that are registered for taxes get low after-tax returns. Due to a lack of awareness of tax obligation upon small and medium enterprises, these businesses fail to meet their obligations and as result this they go out of business.

Granger causality was used to test the causal relationship between taxation and the contribution of the gross turnover of small and medium enterprises to economic growth. The results show that there is evidence of unidirectional causality between tax liability and the gross turn of small and medium enterprises in Kampala. The direction of causality runs strictly from taxation to gross turnover to economic growth. Finally, for the case of Kampala, this paper provides a suggestion for policymakers that taxation substantially affect the economic growth.

The study recommends that government authorities should consider tax restructuring to help small and medium enterprises so as for these firms to contribute to economic growth. it also suggests that authorities responsible for tax collection and administration like URA (Uganda Revenue Authority) play important role in providing tax educatıon programs to taxpayers, especially small business enterprises. This should be done through various platforms such as newspapers, local radio, and television stations. The tax education should be carried out in languages that taxpayers can understand. The tax collectıng body should also undertake a nationwide registration exercise for all small firms since a majorıty of them are not registered.

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