



ISSN: 2602-3385

# **JOURNAL OF BUSINESS MANAGEMENT AND ECONOMIC RESEARCH**

Volume: 4  
Issue : 4  
Year : 2020



# Journal of Business Management and Economic Research

ISSN: 2602-3385

2020, Vol: 4, Issue: 4

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ISSN: 2602-3385



## **Effect of Firm Characteristics on Dividend Policy in Firms Listed in Nairobi Security Exchange, Kenya**

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#### **Abstract**

The main aim of the paper was to establish the mediating effect of firm characteristics on dividend policy. The study is informed by Catering theory of dividends. This study was informed longitudinal research design. The target population comprising forty three (43) banks will be retrieved from the Central Bank of Kenya (CBK) and Nairobi Securities Exchange (NSE). Each bank was analyzed annually for 10 years giving 430 firm year observations. A census approach was used to include commercial banks registered with the CBK and banks listed in the NSE. The data collection instrument to be used in this study was content/document analysis. a panel data framework using fixed and random effect was used to test the hypotheses. Findings from random model showed that firm portability, ownership, leverage and liquidity had significant effect on dividends policy. Thus, based on the evidence from study findings, firms with higher profitability and higher liquidity will pay more dividends. In addition, banks with high level of ownership concretion and liquidity have high probability for paying dividends. The key contribution of this study is that it helps shed additional light on the inconclusive issues regarding the effects of ownership structure, profitability, liquidity and leverage on dividend policy in banks. In addition, Financial managers in banks can use the findings to improve the payment of dividends, investment policy and capital budgeting decisions of banks. Consequently, government and relevant regulatory agencies would formulate policies and regulatory framework that take cognizance of the influence of firm characteristics on dividend policy. This is the first study that investigates ho bank specific characteristics affect the propensity to pay dividends and dividend payout along with long-term relationships in a single study

**Keywords:** Profitability, ROA, Liquidity, Dividends Policy

#### ***Suggested Citation:***

Buigut, K. K. & Soi, N.C. (2020). Effect of Firm Characteristics on Dividend Policy in Firms Listed in Nairobi Security Exchange, Kenya. *Journal of Business Management and Economic Research (JOBMER)*, Vol: 4, Issue: 4, 299-317.

## **1. Introduction**

According to Al-Masum, (2014) there is a potential impact by Dividend policy to investors. Dividend policy is also a factor in evaluating the ability of a firm to produce optimistic money movement. Stouraitis and Wu (2004) propose that excess investment difficulties of organization can be done away with, through dividend policy. Investors can use dividend policy in decrease of broker charges and also to help as a sign to a company's health. Certainly, dividend strategy is one of the vital tools of a business's strategies (Miko and Kamardin, 2015). According to Sharma and Wadhwa, (2013), Dividend policy is defined as payment plan that a company's follows in **deciding** the scope and design of issuing profit to investors over-time. Dividend plan research can be traced back to the powerful work of Miller and Modigliani (1961) they display that dividend strategy has no result on the worth of the business given a capital market that is perfect with usual conduct and perfect certainty and borrowing decisions and investment given. DeAngelo and DeAngelo (2006) re-scrutinizes, report and challenges the idea of dividend strategy being irrelevance in the original Miller and Modigliani (1961) ideal and gives a the foundation for the importance of dividend strategy.

Baker and Wurgler (2004) in their study, dividends in decision making by investors seems to be considered as one of the important indicators. Various investors look stocks that pay dividends. Overall, a dividend is what investors like in a firm. Some earlier research shows that investors like to see the similar amount of dividends or rise over time. Tse (2005) proposes that dividends are used as a sign for companies' future projections. Some international business context and managers' behavioral features has been used to examine dividend payout design. There is correlation among dividend strategy, agency system and business exact characteristics (Porta et al. 2006).

Corporate dividend policy and firm value can be affected both directly and indirectly by some factors in firm characteristics. For example, Al-Najjar (2009); Al-Shubiri (2011) cited that profitability, company size, ownership, financial power, and investment opportunity as key determinants of dividend policy. Similarly, Hafeez Ahmed & Attiya Javid (2009) also listed factors affecting dividend policy as the following, ownership, leverage, company size, company age, profitability, investment opportunities, and liquidity as factors affecting dividend policy. Botoc and Pirtea (2014) find that DPR in 16 emerging markets is positively determined by liquidity and profitability. While Kuzucu (2015) claims that DPR in Turkish listed firms is negatively determined by profitability, while liquidity is regarded as a unimportant forecaster. However, in spite of many researches being carried out on the determining factor of dividend strategy in listed

companies, these researches have conveyed mixed results which are not constant and lacking any consensus on the greatness and direction of profitability, liquidity, ownership and leverage on dividend policy mostly in developing economies more so on companies registered in N.S.E

The state of Kenya since the early 1990s, has pursued a thoughtful divestiture strategy intended at diminishing government ownership of organizations with a vision of inviting private sector contribution in running of the inexperienced government organization. Prediction was given that this plan would improve performance of these corporations due infusion of more effective management designs. The uniqueness of firm tenure in Kenya by other companies is that the holding companies are usually big organizations with the power to restructure their division/associate processes to bail out non-performing associates (Ongore, 2011).

Various studies have tried to discover matters concerning the dividend dynamics and dividend policy determinants. Study by Black, (1976), Brealey and Myers, (2006) states, there is no most accepted clarification on bonus conduct of companies. The subject of dividend in Kenya has been a puzzle as most companies listed at the NSE mostly pay cash bonus shares and dividends at the end of second quarter and the last dividend payout at the end of the financial year. Companies pay an extra dividend when there is unexpected income. However, various firms do not pay dividends for numerous years because to financial difficulties. Largely, most companies listed at the NSE have perfect and well-defined dividend strategies that are in tandem with the overall dividend exercise in the industry. The difference in payment of dividends among businesses listed in NSE raises a question of dividend policy determinant in Kenya banking sector. There is need to study and establish a correlation among company features and dividend strategy in regard to the above difficulties.

## **2. Theoretical explanations of dividend policy**

### **Bird-in-the-Hand Theory**

This theory says that dividends are significant. Dividend income plus capital gains equals total returns. Gordon (1963) and Lintner (1962) according to this calculation are supposed that overall return would reduce as a firm's dividends payout increase. There is an investor concern that when a company raises its payout share, business's forthcoming capital profit will disappear because the retained income that the firm re-invest the corporate will be less (Eugene, 1990). Gordon (1963) and Lintner (1962) claimed that decision making related to stocks, shareholders value dividends in contrast to capital gains. This theory of Bird-in-

the-hand may sound conversant as it comes from early proverb that a bird in the hand is more valuable than two in the bush. The bird in the hand is dividends and in the bush is the capital gain in regard to this theory.

### **Signaling Theory**

The notion that mediators send statistics to the principal so as to produce a good affiliation is termed as signaling theory. Company executives have information which is more actual than company's investors, but are usually unwilling to give clear information to investors. Therefore, dividend policy is purposely used for information and also as a indication of the business's upcoming forecast. Information dissemination to investors about the company's value is leading role that is played by dividend policy Miller and Rock (1985) and Li and Zhao (2008).

Bhattacharya, (1979); Miller and Rock, (1995) says that signaling concept recommends that information to investors about firm earnings in future is delivered by dividends. This signal is reliable only if it is not too expensive for lesser quality companies to imitate. Predictions of signaling theory is supported by several evidence studies from empirical researches. For example, Ofer and Siegal (1987) says that dividend declarations are associated with rise stock price, whereas dividend slashes are connected with stock price decline. In the same vein, Bancel et al.,(2009), in an assessment of CFOs from 16 countries in Europe and Brav *et al.*,(2005), in a research of CFOs from US, discovered a proof proposing of the existence of unwillingness by executives to change dividend strategy. Thus, dividend strategy is an expensive sign that may alter shareholder's views about a company's earnings projections.

### **Catering Theory of Dividends**

The dividend theory of catering is the most recent concept that was developed by Baker and Wurgler (2004). Reducing research undertaken by Modigliani and Miller (1961), of the supposition of faultless markets and well-organized markets and considering mental and formal reasons, Baker and Wurgler (2004) came up with a simple theoretical model. First, on dividend-paying stocks they claimed that some shareholders have less informed and perhaps time changing demand. Second, buying and selling of stocks plays unsuccessfully in setting apart the payers and non-payers dividend prices. Thirdly, investors demand is sensibly provided for by directors by compensating investors when they put prices higher on payers, and they do not compensate when investors prefer non-payers.



Dividend theory of catering proposes that actual monetary markets are inadequate and ineffective, and companies make dividends beginning and continuation verdicts by taking care of the shareholders' dividends demand (Tsuji, 2010). Normally, shareholders' dividends demand can be taken as the difference between non-payers' and payers' Market to Book (M/B) ratio, which business executives can know via financial markets. Hence, According to Tsuji, (2010) catering model foresees that when the payers' M/B ratio is higher than the nonpayers' M/B ratio business executives make dividend beginnings or dividend continuations by taking care of shareholders' dividend demands.

## **2.1 Review of Literature (Development of the Hypothesis)**

This section focuses on the applicable empirical proof, expansion of the study theories and operationalization of the research variables that supports determinants of dividend policy.

### **Profitability**

The equation of measuring profitability according to Amidu and Abor (2006), Boțoc and Pirtea (2014), Wang et al. (2016) and Al-Kayed (2017) is the yield on equity ratio. Net income of a firm comprises of dividends that are apportioned to shareholders. According to Chang, (2009); Abor and Bokpin, (2010) company predictions shows firms offer higher dividends when the firm's profitability and cash flow is higher. Hafeez & Attiya, Javid (2009) examined 320 non-financial companies listed in Karachi Stock Exchange during the period of 2001 to 2006 on the altering features and factors of dividend strategy. For the research Lintner (1956) dividend ideal was used and its lengthy versions in dynamic setting. Firms with larger dividend payout were found to be profitable with more steady net incomes and can have the funds for greater free cash movements. Explanation of the relationship between profitability and dividends may be provided also by the pecking order theory and signaling theory Fama and French, (2002); Yarram and Dollery, (2015). Kimie and Pascal (2011) and Kuzucu (2015) found that profitability as a factor with an adverse effect on corporation dividend strategy. In contrast, Amidu and Abor (2006), Al-Malkawi (2007), Al-Najjar (2011), Bokpin (2011), Patra et al. (2012) and Botoc and Pirtea (2014) recognize profitability as a factor with a positive effect on company dividend strategy.

*H<sub>1</sub>: High profitable companies will have a higher probability of of paying dividends.*

## **Liquidity**

Patra et al. (2012), Kuzucu (2015), Boțoc and Pirtea (2014), Turner et al. (2013) and Al-Kayed (2017) in their study defines current percentage as current assets divided by current obligations as our liquidity measure. Dividend policy has been investigated and shows liquidity as one of its factor. Lintner (1956) in his qualitative research of 28 firm executives recognized liquidity as a less commonly known determinant. Baker et al. (1985), developed a new argument which says that liquidity is the key factor of dividend strategy. "Liquidity hypothesis of dividends," according to Banerjee et al. (2007) is a negative correlation between liquidity and dividend policy, an ideal supported by Zhiqiang et al. (2015). Baker and Kapoor (2015) disclose that robust support for the liquidity model for stock dividends in Indian situation. In a comparative research of Australia and Japanese firms, Ho (2003) conversed that out of all the retreated variables of power, uncertainty, asset mix, liquidity, profitability, degree, and development, the dividend policies are certainly affected by magnitude in Australia and liquidity in Japan and negatively by risk in Japan only.

The determinant of dividend payment ratio of the Indian Information Technology industry was observed Anil and Kapoor, (2008). They also found that liquidity and beta (year-to-year variability in incomes) as per the proofs collected for seven years were found to be significant causes. In contrast, Abdelsalam *et. al.*, (2008) also studied the dividend policy of 50 listed companies in Egypt for the period 2003-2005. Important positive correlation between dividend policy and liquidity were shown to exist from the results of the research, therefore grounded on this inconstancy of results on the relationship between divided policy and liquidity. The study theorized that;

*H<sub>2</sub>: High liquid firms will have a higher probability of paying dividends.*

## **Ownership**

Following Ankudinov and Lebedev (2016) and Setiawan et al. (2016), tenure organization is here applied to mean the ratio of percentage controlled by firm largest investors. According to Shleifer and Vishny (1997), La Porta et al. (2000), Claessens et al. (2000) and Faccio et al. (2001), most firms' shows focused tenure and are managed by families, governments, or single owners. Due to this reason, payments of dividends are made to aggravate agency challenges between directors and shareholders. Hence, ownership organization need also be considered a determinant of dividend policy. In Turkey, Al-Najjar and Kilincarslan (2016) revealed that a small dividends payment in Turkey is connected with foreign ownership

and government ownership. In contrast, Setiawan et al. (2016) recommend that dividend policy affected positively by the overall ownership arrangement.

*H<sub>3</sub>: Highly ownership concentrated firms will have a higher probability of paying dividends.*

### **Leverage**

Leverage is calculated as total debt to total equity ratio according to (Al-Malkawi 2007, Abor and Bokpin 2010, Patra et al. 2012, Boțoc and Pirtea 2014, Kuzucu 2015 and Al-Kayed 2017). As discoursed by Taranto (2002) a relation between financial powers with dividends policy raises from limiting debt contracts (including limitations of dividends payment) of creditor to look after its benefits. Rozeff (2002) says that transaction charges and the certainty of the companies is increases due to high leverage. Profitability companies with a strong leverage ratio have high secure payments for using exterior financing. Dividend policy is impacted but also liquidity situation of a firm is affected. Companies with insufficient level of cash are less likely to pay dividends than companies with high level of cash. Thus, the likelihood a company will pay money when dividends are positively related to liquidity (Kaźmierska-Jóźwiak, 2015).

Best dividend policy together with optimal leverage is researched in certain theories, such as, one established by Fan and Sundaresan (2000) which rotates around the flow-based insolvency. Evasion happens when the voucher to be paid is higher than shifting cash level. Best dividend policy look after distribution differences between the cash and the voucher, when positive. Financial policies, such as leverage and dividend, will impact administrative strategy and decision of directors to join as owner of the company. Lintner (1956) recognizes financial obligations as a less significant determinant of firm dividend policy. Rozeff (1982) expresses that a firm with high financial leverage is likely to have low payouts proportions, contrary to business deal costs connected with outside financing. According to this argument, Al-Malkawi (2007) recommends that companies with high financial obligation ratios are likely to pay smaller dividends. In accordance with Lintner's (1956) consequences, Abor and Bokpin (2010) says that exterior financing, financial obligation and financial power are less significant determinant of dividend policy. Bokpin (2011), Patra et al. (2012) and Arko et al. (2014) recognize financial power as a main cause of company dividend policy. Yusof and Ismail (2016) identify financial obligation as a negative determinant of firm dividend policy in Malaysia. Centered on the beyond mixed outcomes on consequence of leverage on dividend strategy, this research theorized that;

*H<sub>4</sub>: High leveraged firms will have a higher probability of paying dividends.*

### **Control variables**

Big companies are more likely to pay dividends due to easy access to capital markets (Ho, 2003; Aivazian, Booth and Cleary, 2003). According to the agency charge theory, the widespread ownership arrangement in larger companies lessens shareholders' abilities to run financing activities, causing in more asymmetric information and higher agency charges. Al-Malkawi (2007) therefore recognizes company's size as an important factor of dividend strategy. Al-Najjar (2011) and Bokpin (2011) castoff any important effect of company size on corporate dividend strategy. However, Harada and Nguyen (2011) recognize company size as an adverse factor in the Japanese setting. Patra et al. (2012), Kuzucu (2015) and Yusof and Ismail (2016) recognize company size as a positive factor of dividend strategy.

### **3. Material and methods**

This research adopted longitudinal research plan which involves tracking changes over time on a broad range of population members. The objective population included 43 banks under central bank of Kenya. Empirical analysis is of 10 years period from 2005 to 2015. A census approach was used, and thus the sampling frame of 43 banks from 2005-2015. Ultimately, 430 firm-year data of 43 banks were included in the sample (unbalanced panel data). An unbalanced panel is one where there are a different number of observations for each cross section unit (or vice versa). These observations may be contiguous, or there may be holes in the data (Kwak, 2011). That is, for the example dataset, the study used seven years of data for First Community Bank (2008 to 2015) and six years for UBA Kenya Bank Limited (2009 - 2015). The data collection instrument to be used in this study was content/document analysis guide. The study was conducted using secondary sources which were achieved by analyzing the content of financial reports of 43 banks quoted in NSE and registered with Central bank of Kenya. This was suitable for this study because all the audited information about the companies will be readily available for the public as required by the company law of Kenya Act.

### **Measurement of Variables**

According to Hussainey *et al.*, (2011), dividend payout ratio is the ratio of dividends per share to earnings per share for all available years. Salari *et al.*, (2014) also calculated dividend payout ratio by dividing dividends per share to earnings per share and the average is taken.

Return on assets (ROA), the ratio of operating income to total assets, is used to control for firm's profitability. Firms with higher profitability tend to pay higher dividends than firms with lower profitability. Therefore, a positive relationship between ROA and dividends is predicted ((Thanatawee, 2013).

Liquidity was measured using current ratio which simply compares all liquid assets with all current liabilities. The current ratio is calculated by dividing current assets by current liabilities (Khidmat and Rehman, 2014).

Ownership was a proxy of ownership concentration and measured by the percent of shares owned by the five largest shareholders (TOP5) (Harada and Nguyen, 2011) and Khan , 2006).

Leverage (LEV) is total debt divided by book value of total assets. Since firms with higher debt are more likely to be financially constrained and should be less able to pay dividends, a negative relationship between leverage and dividend payments is expected accordingly ((Thanatawee, 2013).

Firm size (SIZE) is the logarithm of total assets. Compared with smaller firms, larger firms tends to be more mature, have higher free cash flows, and are more likely to pay higher dividends. Thus, a positive relationship between firm size and dividends is expected (Thanatawee, 2013). Firm age will be measured using firm age foundation or incorporation (Albitar, 2015).

**Table 1.** Measurement of Variables

<b>Variables</b>	<b>Indicators</b>	<b>Measurement</b>	<b>References</b>
<b>Dependent Variables</b>			
Dividend Payout Policy	DIV	This is the ratio of dividends per share to earnings per share for all available years	(Hussainey <i>et al.</i> 2011)
<b>Independent Variables</b>			
<b>Firm Characteristics</b>			
Profitability	PF	Net income / total assets	Cole and White(2012)
Leverage	LEV	Total debts / total asset	Thanatawee (2013)
Liquidity	LIQ	Current asset/current liabilities	Khidmat and Rehman, 2014
Ownership	CO	ownership concentration is measured by the percent of shares owned by the five largest shareholders (TOP5)	Harada and Nguyen (2011) and Khan (2006)
<b>Control Variables</b>			
Firm Size	FZ	Natural log of total assets	Thanatawee (2013)
Firm Age	FA	Years since incorporation	Albitar, 2015

### **Model specification**

A panel data framework is used to test the hypotheses. Panel data, as noted by Hsiao (1986), has several distinct advantages: it provides more degrees of freedom, increases variations in the data and thereby reduces the chances of multicollinearity, and makes it possible to control for fixed effects. Panel data have the strength of accommodating more observations hence increases the degrees of freedom. In addition, it reduces the problem of collinearity of regressors and modelling flexibility of behaviour differences within and between countries and/or groups or institutions (Biwott, 2011; Hsiao, 2007). Panel data will be analyzed using fixed effect model (FEM) and random effects model (REM). Fixed effects model is used when controlling for omitted variables that differ between individuals but are constant over time. If some omitted variables might be constant over time but vary between individuals, and others might be fixed between individuals but vary over time, then random effects model will be of help in taking the two types into account. The random effects model would be appropriate if data are representative of a sample rather than the entire population, because the individual effect term can be a random outcome rather than a fixed parameter.

According to Lee (2008) in order to compare the usefulness of these models, three tests will be run. First, fixed effects will be tested by F test and the null hypothesis--all individual effects terms except one are zero--will be rejected at 0.1% significance level. This suggests that the fixed effects model is better than the pooled OLS model. Second, random effects will be examined by the Lagrange multiplier (LM) test and the null hypothesis--cross-sectional variance components are zero--will be rejected at 0.1% significance level. This argues in favor of the random effects model against the pooled data model. Finally, Hausman test will be used to compare fixed effects and random effects and the null hypothesis-- there is no significant correlation between the individual effects and the regressors--is rejected at 0.1% significance level in this test. This confirms the argument in favor of the fixed effects model against the random effects model. In sum, the test results will confirm that the fixed effect model is superior to any other models in dealing with the data

### **4. Findings and Discussions**

This section presents the results from all those procedures and analyses. The results presented here are organized under five key sections: descriptive statistics, diagnostic tests, correlation analysis, and hypothesis testing.

**Descriptive Statistics**

The data comprised of 42 banks observed over a period of ten years that is from the year 2006 to 2016. The findings are as presented in Table 2. Basing on the results in the table, the dividends paid out to shareholders relative to the company's net income was at a mean of 0.5965 with a maximum value of 3.87. On the other hand, the profitability levels were at a mean of 6.860. The minimum profit level was 0.18 while the maximum was 9.4. Furthermore, liquidity levels ranged between 0.2 and 62.91 with an overall mean of 1.545.

**Table 2.** Descriptive statistics

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Dividend payout	499	0	3.87	0.5965	0.54753	2.143	5.959
Profitability y	490	0.18	9.4	6.8602	1.66527	-2.403	6.601
Liquidity	490	0.2	62.91	1.5452	5.2335	7.473	66.411

**Robustness Checks**

Prior to selecting which panel regression model to use, and in order to identify potential endogenous variables, some robustness tests have to be carried out, such as a normality tests, multicollinearity, unit root test, test for heteroscedasticity , autocorrelation test ad specification error test

For the Jarque-Bera Test, if the p-value is lower than the Chi (2) value then the null hypothesis cannot be rejected. It can therefore be concluded that the residuals are normally distributed. As per Table 2, the chi (2) is 5.37 which is greater than 0.05 meaning that the null hypothesis cannot be rejected. The implication is that there is no violation of the normal distribution assumption of error terms as the residuals are coming out to be normal.

To conduct the heteroskedasticity test, this study uses Breusch-Pagan test for heteroskedasticity. The results shown below Table 3 indicate heteroskedasticity problems. The results required to use the cluster-robust standard error estimator in order to control heteroskedasticity. By using this robust standard error estimator (cluster), the study assumed that observations should be independent across clusters (Rogers, 1993).The study tested heteroskedasticity using Breusch-Pagan / Cook-Weisberg test. The findings indicated that Chi2 (1) was 153.910, p value of 0.060 revealing that null hypothesis was not rejected

suggesting that assumption of constant variance was not violated. Findings are presented in table 3. The study tested homoskedasticity using White test. The findings indicated that Chi2 (16) was 112.01, p value of 0.4277 revealing that null hypothesis was rejected suggesting that assumption of homoskedasticity was not violated. Findings are presented in table 3:

**Table 3.** Normality and Heteroskedasticity Tests

	<b>Chi2</b>	<b>Prob&gt;chi2</b>
Jarque-Bera normality test	5.57	0.0619
Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity	153.91	0.06
White's Test for heteroskedasticity	72.15	0.057

The results of the VIF test as shown in Table 4 ranged between 1.09 and 4.09. All the variables are less than 10 thereby; our model does not suffer from multicollinearity problems. The VIF values in table 4.6 were less than four meaning that there was no multicollinearity.

**Table 4.** Multicollinearity

Variable	VIF	1/VIF
Profitability	1.22	0.819729
Liquidity	1.19	0.840076
Mean VIF	2.44	

### **Unit root test**

Looking at the *p*- values in Table 5, the null hypothesis can be rejected at all conventional significance levels for all the variables of the study, which means that there is no unit root in our data. This implies that the means and variances in our data do not depend on time, hence the application of OLS can produce meaningful results (Gujarati, 2012).



**Table 5.** Unit root test

	Levin-Lin-Chu	Breitung	Im-Pesaran-Shin	ADF-Fisher chi square	PP_Fisher Chi square	Hadri LM test
Divided policy	-8.58	-3.26	-1.63	90.84	2.59	8.74
p value	0.00	0.00	0.01	0.01	0.00	0.00
Liquidity	-12.03	-2.12	-1.51	115.70	4.82	9.01
p value	0.00	0.02	0.07	0.00	0.00	0.00
Profitability	2.42	10.68	-1.74	520.15	41.14	25.11
p value	0.02	0.00	0.04	0.00	0.00	0.00

### Autocorrelation Test

By the *p-values* in table 5, the null hypothesis cannot be rejected at the 5% significance level, which means that there is no autocorrelation in the data.

**Table 6.** Wooldridge test for autocorrelation in panel data

H0:	no	first-order autocorrelation
	F(	1, 30) = 0.910
		Prob > F = 0.3478

### Specification Error Test

Table 6 highlights the results of the Ramsey RESET test. From the findings in the table, the probability values of the computed statistics in the Ramsey RESET test are more than the threshold value of 0.05, it implies that the model does not seem mis specified. This implies that our model was correctly specified (Studenmund, 2000).

**Table 7.** Ramsey RESET (test using powers of the fitted values of FP)

Ho:	model has no omitted	variables
	F(3, 296) =	11.97
	Prob > F =	0.08

### Empirical Results and Discussion

The results regarding the correlation results were summarized and presented in table 7. Pearson correlation results in the table showed that ownership concentration is positively related with dividend policy with a

Pearson Correlation coefficient of  $r = .628$  which is significant at  $p < 0.01$ . The output also shows that ROA is positively related with dividend policy, with a coefficient of  $r = .482$  which is also significant at  $p < 0.01$ . Also, the correlation results indicated that liquidity is positively related with dividend policy as shown by a coefficient of  $r = 0.215$  which is significant at  $p < 0.01$ . Besides, firm age is positively related with dividend policy, with a coefficient of  $r = .360$  which is also significant at  $p < 0.01$ . In addition, firm age is positively related with dividend policy with a Pearson Correlation coefficient of  $r = .360$  which is significant at  $p < 0.01$ . The output also shows that firm size is positively related with dividend policy, with a coefficient of  $r = .376$  which is also significant at  $p < 0.01$ .

To decide between fixed or random effects one can run a Hausman test where the null hypothesis is that the preferred model is random effects compared to the alternative the fixed effects (see Green, 2008). From the Hausman test Table 7 which shows summary of the results, the conclusion is that, there is a failure to reject the null hypothesis of "difference in coefficients not systematic" to determinants of dividend policy. This is because the chi-square value of 7.76 was not significant,  $p\text{-value} = 0.2561$ . Therefore, this implies that, effect of hypothesis is tested using the random effects model. This means that the most appropriate model is the random effects.

The regression results for the random model are as illustrated in table 7. The random model showed that profitability, liquidity, firm age and firm size explained 71.26% variation of dividend policy.

Hypothesis 1 stated that *highly profitable firms will likely pay dividends*. Findings showed that profitability had coefficients of estimate which was significant basing on  $\beta_1 = 0.132$  ( $p\text{-value} = 0.000$  which is less than  $\alpha = 0.000$  hence it was concluded that profitability had a positive and significant effect on dividend policy. This finding infers the more profitable a firms is the higher the probability for dividend payout. These findings are similar with Yarram and Dollery, (2015), Kimie and Pascal (2011) and Kuzucu (2015) findings that profitability positively affect dividend policy.

Hypothesis 2 stated *High liquid firms will have a higher probability of paying dividends..* Findings showed that liquidity had coefficients of estimate which was significant basing on  $\beta_2 = 0.029$  ( $p\text{-value} = 0.005$  which is less than  $\alpha = 0.000$  hence liquidity has a positive and significant effect on dividend policy. This suggested that the more liquid a firms is the more probability it will pay dividends.

Hypothesis 3 stipulated that *highly ownership concentrated firms will have a higher probability of paying dividends*. Results showed that beta coefficient for ownership was  $\beta_3 = .178$ ,  $p < .05$  inferring that hypothesis

3 was accepted. This indicates that a highly concentrated ownership in firms will increase probability of paying dividends.

Hypothesis 4 stipulated that *highly leveraged firms will have a higher probability of paying dividends*. Results showed that beta coefficient for leverage was  $\beta_4 = .417$ ,  $p < .05$ , hence the hypothesis was accepted. This shows that firm with high level of leverage will pay dividends. The findings tally with DeAngelo et al. (2004) observation that Leverage also influences the dividend behavior of companies, provided the level of the leverage is high, which means that investment in the firm is comparatively riskier in the manners of cash flow. On the other hand, the view of Jensen et al. (1992) was different in that they believed financing from equity is more attractive to firms having high dividend ratios than from debt, so low ratios of long-term debt to the book value of total assets often happen in these companies.

**Table 8.** Housman test

	Random Effect	Fixed Effect	Correlation
	Coef.	Coef.	
Profitability	.132**(0.014)	.132**(0.015)	.482**
Liquidity	.029**(0.01)	.021(0.012)	.215**
Ownership	.178**(0.014)	.170**(0.016)	.627**
Leverage	.417**(0.018)	.413**(0.020)	.700**
firm age	-0.057*(0.023)	-0.082(0.043)	.360**
Firm size	-0.303**(0.023)	-0.298**(0.029)	.376**
_cons	0.116(0.519)	0.155(0.429)	
sigma_u	0.011	0.052286	
sigma_e	0.155	0.154525	
rho	0.005	0.10273	
R-sq: within	0.7126	0.7133	
between	0.9444	0.9413	
overall	0.7912	0.79	
Wald chi2(6)	1831.73		
Prob > chi2	0.000		
F(6,447)		185.37	
Prob > F		0.000	
Obs 449			
<b>Housman test</b>			
chi2(6)	7.76		
Prob>chi2	0.2561		

\*\* $p < .01$ . \* $p < .05$

## **5. Summary and Conclusion**

Profitability as measured by return on asset (ROA) had a positive and significant influence on the dividend policy. The results support the notion that firms that make consistent high profits are expected to pay high dividends to shareholders. The reason for this is that shareholders tend to buy shares from firms that are perceived profitable or are performing. Furthermore, if firms have adequate cash flows, it distributes its cash dividend in order to keep its shareholders contented. Firms will however be required to make their dividend payments in cash so that they are liquid enough to distribute dividends and also to remain solvent. Finally, the extent to which the banks are financed by debt has a positive influence on the dividend policy. It appears therefore that the banks are lowly leveraged as they have a propensity to pay dividends. This means that the banks are not financially constrained. As such, they are not monitored by debt holders who reduce management capability of paying dividends.

### **Theoretical and managerial implication of the study**

In light of the study findings and conclusion of the study, it is recommended for firms to have a concentrated ownership as it leads to the distribution of a great percentage of dividends and shows a positive relation with dividends policy. Moreover, there is need for institutional ownership since they interfere less when supervising the directive role and have a preference towards the recovery of their investments through the payment of dividends. This in turn reduces the opportunistic behavior of the management.

Also, the study found profitability to influence the dividend policy. It is therefore important for banks to adopt a dividend policy that they are able to maintain even during the years that the banks report minimum profits, this is crucial because it satisfies the shareholders and avoids promising the shareholders high earnings that they cannot maintain in the future.

Moreover, liquidity positively influenced the dividend policy. This study recommends that a comprehensive assessment of the banks' immediate liquidity position should be undertaken before any dividend payout is declared to the shareholders. This is because the bank' liquidity position is of high importance since it influences the banks' current operations.

The main objective of this study was to establish the effect of bank characteristics and dividend policy among banks in Kenya. Valuable insights have been found however it is important to reflect on the

conducted work so that further research opportunities can be pointed out. First and foremost, there is need for further research since there is limited literature on the influence of leverage on dividend policy. Also, the study utilizes only secondary data from annual reports. It is therefore recommended that in future researchers can extend the study longitudinally based on the company's website or a survey which is preferable for eliciting more detailed information on a particular subject. Finally, a further study needs to be conducted using more variables that may be relevant to this study since there is no evidence that dividend policy is entirely dependent on the four variables.

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## **Does Corporate Governance Mechanisms Matter in Explaining Risk Management? Evidence from Non-Financial Kenyan Listed Firms**

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### **Abstract**

This study attempts to investigate the relationship between corporate governance and risk management in Kenyan listed non-financial firms. The study employed a longitudinal research design and the study's target population was 67 companies. Inclusion-exclusion criteria were used and only 41 listed non-financial firms showed consistency from 2010-2017 giving a total of 328 firm-year observations. Using binary logistic regression analysis, descriptive and inferential statistics were used to analyze data and hypotheses were tested. The regression results revealed that board independence ( $\beta = -1.14, \rho < 0.05$ ) and CEO tenure ( $\beta = -0.56, \rho < 0.05$ ) had a negative and significant effect, while board financial expertise ( $\beta = 0.56, \rho < 0.05$ ) had a positive and significant effect on risk management with the predictive power of Pseudo  $R^2 = 28.16$  percent. The study concluded that the independence of board members was detrimental to hedging activities. Long-tenured CEOs were less likely to use financial derivatives tools to hedge risks while financially knowledgeable boards have a better understanding of the sophisticated financial tools involved in risk management mechanisms. The study recommends the reduction of board members' independence and CEO tenure so as to increase hedging activities. It is imperative for the board members to have financial expertise so that they can ascertain risks which are valuable to shareholders.

**Keywords:** Board Independence, CEO Tenure, Board Financial Expertise, Corporate Governance, Risk Management, Agency Theory

### ***Suggested Citation:***

Tarus, T. K. (2020). Does Corporate Governance Mechanisms Matter in Explaining Risk Management? Evidence from Non-Financial Kenyan Listed Firms. *Journal of Business Management and Economic Research (JOBMER)*, Vol: 4, Issue: 4, 318-334.



## **1. Introduction**

Following the 2007-2008 corporate failures, numerous governance initiatives have been suggested to improve corporate governance with significant emphasis on the role of risk management. In this respect, the use of financial derivatives tools (a risk management proxy) to handle risks has become increasingly important owing to enhanced risk complexity and the growth of legislative frameworks among companies (Lechner & Gatzert, 2018). The establishment of robust risk appetite across all enterprise levels (Gatzert and Martin, 2015) is vital in ensuring proper synchronization and functionality of the risk management system. The holistic perspective on a firm's risk portfolio is anticipated to create value for companies by optimizing their risk-return trade-off and thus creating long term competitive advantage as equated to firms which ascertain, monitor and handle risks individually (Nocco and Stulz, 2006).

Risk management has developed as a key success factor and a priority for companies (Grove and Clouse, 2016) because financial management entails managing risks using a different set of financial instruments. Traditionally the tool of risk management comprised portfolio diversification which was predominant in the previous years. However new tools were developed in the 1970s in the form of financial transactions called derivatives (Grove and Clouse, 2016). Derivatives tools are important elements of the global economy with an estimated market size surpassing \$700 trillion by 2001 (Bartram *et al.*, 2009). International Swaps Derivatives Association survey of 2009 reports, 94 percent of the world's 500 biggest corporations employ derivatives to manage corporate risks. Therefore, an effective risk management structure is perceived to aid the organization realized its business objectives, enhance its financial reporting as well as safeguarding its reputation. Miccolis & Shah (2000) pointed out that managers need to manage financial tools that stimulate risk so that they can pursue strategic advantage and opportunities attributed to the risks. During periods of uncertainty and global financial unrest, the function of risk management becomes more essential for company activities (Grote, 2015).

Recuperating from the shocks of corporate failures, representatives and stakeholders are demanding better oversight from organizations particularly from the board of directors for managing and taking responsibility for key risks which firms faced (Maruhun *et al.*, 2018). They further noted that poor corporate governance mechanisms have been identified as the main cause of risk management failure and thus contributed to the global decline of major companies. The impact of the economic crisis had been the wake-up call for most firms when they were unprepared and surprised by the extensions of the debacle (Harner, 2010). The literature has disclosed that the connection between corporate governance and financial risk management aided companies to recognize the risks, mitigate and handle

those risks in an appropriate way (Zahiruddin & Norlida, 2013). Management of risk is a crucial mechanism in the company governance framework used as a surveillance instrument to align the principal-agent link so as to reduce the agency issues (Maruhun *et al.*, 2018).

According to Hentschel & Kothari, (2001) they postulated that over time corporate governance aspects have improved risk management activities such as identifying, measuring and monitoring as well as estimating the efficiency of management controls in managing risks. Nevertheless, despite Kenya's capital market improvement on corporate governance, recent studies in the Kenyan markets have focused on the challenges facing the introduction of derivative tools and reasons why Kenyan firms do not employ derivatives in risk management. According to Murungi *et al.*, (2014), financial derivatives usage among Kenyan firms is low because of managerial skepticism, limited derivative microstructure and limited knowledge on the availability of derivative instruments. Other studies by (Kintu and Ngugi, 2013; Livingstone and Ngugi, 2019) report that Kenyan listed firms exercise a variety of derivative instruments to manage financial risks. Despite research in advanced nations (Bartram *et al.*, 2009; Allayannis *et al.*, 2012; Asghar, 2018), the impact of corporate governance and financial risk management in the Kenyan context has not been adequately documented. To fill this gap and contribute to the body of knowledge, this research attempted to explore the effect of corporate governance attributes on risk management in Kenyan non-financial listed firms.

### **1.1. Theoretical Framework**

The Corporate Governance framework according to Fama and Jensen, (1983) has its roots in agency theory derived from the idea of separating ownership and control. In this regard, the theory, therefore, contracts with the resolution of problems occurring between the principal and the agent. In most cases, agents are delegated to act in the best interest of the principal, but occasionally they may fail and be concerned with advancing their individual interests resulting in sometimes denoted agency conflict as the agency problem. To minimize this agency conflict (Jensen and Meckling, 1976), a contract is commonly executed between the principal and the agent. The focus of agency theory on the relationship between the principal and agent has created uncertainty owing to numerous information asymmetries (Deegan, 2004). This implies that the separation of ownership from running the firm can lead to managers taking action that may not maximize shareholders' wealth due to their firm-specific knowledge and know-how which may benefit them and not the shareholders thus monitoring mechanism is intended to protect the owners' interest (Jensen & Meckling, 1976).

The agency problem of risk management occurs when the principal and the agent have different views on the amount of residual risk to be borne by the entity. According to Smith and Stulz (1985), agents

will incline to be more risk-averse than the shareholders of the company because a bigger portion of their assets together with their human capital will be connected to the company's accomplishment and continuing existence. Given their command over working strategies, executives have the authority to set the level of risk that maximizes their own usefulness in relation to the level that maximizes shareholder value (Jankensgård, 2019). The theory also clarifies a probable discrepancy between owners, managers and debt holders due to asymmetries in income distribution, which can result in the business taking too much danger (Mayers and Smith, 1987). Agency theory subsequently shows that hedging policies have a significant impact on shareholder value (Fite and Pfleiderer, 1995). Finally, agency theory delivers strong support on hedging as a reaction to the divergence between managerial incentives and shareholders' concerns. This basic principal-agent model can also create information asymmetry, which allows managers to withhold important information to maximize personal interests (Godfrey *et al.*, 2003).

## **2. Literature Review**

### **2.1. Board independence and risk management**

Agency theory advocates claim that a board with a substantial amount of non-executive directors has a better chance to operate in the best interests of shareholders and improving risk management through efficient supervision of management functions (Klein, 2002). The independence of the board relates to the ratio of non-executive directors to the total number of executives on the board (Reddy *et al.*, 2008). The argument about the need for non-executive directors is grounded on agency theory where shareholders have no control over the company's day-to-day operations (Mizruchi, & Stearns, 1988; Hillman and Dalziel, 2003) while executives are seen to possess the firm-specific understanding and managerial skills. A potential conflict of interest requires monitoring procedures aimed at safeguarding the interests of the shareholder owners of the company (Jensen and Meckling, 1976). Greater representation of autonomous managers on the board enhances the level of control and enables the board to conduct its strategic tasks more efficiently (Coles *et al.*, 2001).

Previous studies present mixed evidence on how board independence affects firm risk. The study by Pathan (2009) discovered that powerful boards have a positive and significant impact on firm risk. In addition, Borokhovich *et al.*, 2004 discovered a significant and positive connection in their research between the number of derivatives used by corporations and the percentage of external directors on the board. More results by Tai *et al.*, (2014) indicated that the percentage of autonomous managers was significantly and positively linked to the hedging operations of the firm among non-financial companies. However, Brick and Chidambaran (2008) report a negative association between board

independence and firm combined hedging. In line with their results, Osuoha and Osuoha (2015) discovered that board independence had a negative and significant impact on the relationship between corporate governance and derivatives utilization. Marsden and Prevost (2005) pointed out that companies with a greater proportion of autonomous managers on the board tend to reduce derivatives used as a means of risk management.

Some studies found that board independence is insignificantly related to derivative utilization in risk management (Ho *et al.*, 2013). According to the research by Dionne and Triki (2013), they discovered that the percentage of autonomous managers on the board has no significant effect on the decision to hedge in their study. Moreover, Shiu *et al.*, (2009) also discovered that the proportion of autonomous outside executives on the board is insignificantly linked to risk management. Thus, based on this inconclusive and absence of results on how the presence of non-executive members in the board affects risk management or rather the utilization of financial derivatives, this research hypothesized that;

*H<sub>1</sub>: Board independence has no significant effect on risk management*

## **2.2. CEO tenure and risk management**

Previous studies by (Payne *et al.*, 2009; Vafeas, 2003) highlighted the importance of the tenure of CEOs who expressed that a long-term tenure increases the performance of the board as it is linked with higher expertise, dedication, and understanding about the enterprise and its company environment. In the context of corporate governance, CEO tenure refers to the number of years that the CEO has been in the company (Souder *et al.*, 2012). The findings by Lewellyn & Muller-Kahle (2012) revealed that CEO tenure was statistically significant and negatively related to the firm's decision to perform risk management actions. According to Campbell *et al.*, (2011) on their study found that tenured CEO has a negative and significantly associated with risk management. In another study by Chen and Zheng (2014), they found that an entrenched CEO may enjoy the benefits of more control hence they might become less motivated to make risky decisions

In the same line, Tufano (1996) argued that newly appointed CEOs were more motivated to implement risk management procedures based on the use of derivatives. Results based on 48 companies in his study disclosed that the length of CEO tenure was significantly and positively associated with the application of risk management. According to Xu (2011), the results showed that CEO tenure is positively associated with capital expenditure and research and development expenditure, and CEOs do not perform better when they have a shorter horizon and an influence on investment. Brennan and Conroy (2013) found that the longer-tenured CEO the more likely a CEO is to consider risky alternatives

instruments for hedging purposes. Belkhir (2006) indicated that a manager may be more conservative behavior and want to protect his job hence CEO would be inherently cautious based on individual human capital in the company. Moreover, Bebchuk and Spamann (2009) suggested that CEOs playing the dominant roles and they tend to make more risk-averse decisions. Pathan, (2009) provides that a CEO has more power to influence any decisions of the board and take the lower risk because managers have un-diversifiable wealth including human capital and comparatively fixed salary. However, Dionne and Triki (2013) argue that CEO tenure is insignificant related to hedging decisions when using the delta percentage as the hedge variable in the gold mining industry. According to Boubaker *et al.*, (2010), the likelihood of derivatives usage decreases with the number of years spent by the CEO in the firm which is negatively and statistically insignificant. Malmendier *et al.*, (2011) found an insignificant result for the relationship between CEO tenure and risk management.

*H<sub>2</sub>: CEO Tenure has no significant effect on risk management*

### **2.3. Board financial expertise and risk management**

Following the latest wave of accounting scandals, regulators have stressed the need for more financial experts on boards arguing that they will need to have stronger board supervision and serve the interests of shareholders (Güner *et al.*, 2008). Corporations that lack the financial expertise of board members played a major role in the crisis period (Kirkpatrick, 2009). Financial experts must have the ability to oversee accounting controls and the financial reporting of the firm, thus preventing possible reporting failures, litigation, and scrutiny from policymakers. Those directors specializing in different industries monitor and give advice to firms in those sectors because their financial expertise gives them an edge (Güner *et al.*, 2008). In addition, Fama and Jensen (1983) indicated that since the board was mandated to oversee the organization, they were needed to have the understanding that would enable them to execute their responsibilities perfectly. To monitor the process of financial reporting, the directors must have accounting knowledge, in order to control manipulation and to make information more transparent (Yunos *et al.*, 2012).

Financial knowledge is crucial to comprehend the company's complicated operations and the risks connected with the company's policies, but sometimes company boards lacked sufficient financial expertise to identify and control exposures to risk (Srivastav & Hagendorff, 2016). When there is a shortfall of knowledge, many board members remain silent to save face, which makes them ineffective. In reality, boards of members do often lack in-depth know-how in auditing, risk management and communication (Hilb, 2005). Among a broad spectrum of abilities that managers may have, Chhaochharia and Grinstein (2007) proposed that financial literacy is crucial in any board to work

efficiently. According to Harris & Raviv (2008), they indicated that board financial experts have reduced expenses in obtaining data about the complexity and related risks of certain financial operations and are therefore better prepared to track senior management effectively. They also observed that a more financially knowledgeable board can acknowledge risks that are unsound for the firm's economic stability and advise senior executives to prevent such risks. Badolato *et al.*, (2014) report that financial expertise is associated with less usage of financial derivative and better internal control. With regard to the financial competence of the board, the results did not show any important connection between board competence and firm risk (McNulty *et al.*, 2012).

Financial experience among autonomous managers may encourage senior management to use financial derivative tools to hedge against future uncertainties (Acharya *et al.*, 2010). Similarly, Datta *et al.*, (2009) confirmed that board professional experience is a key determinant of boards' ability to make firm strategic decisions regarding hedging mechanisms. However, financial experts may affect firm policies beyond more accurate disclosure and better performance of the audit committee (Krishnan, 2005) and thus managers spend a substantial part of their time advising rather than supervising (Adams & Ferreira, 2007). Financial board specialists can identify risks that are more useful to shareholders in ordinary times and stimulate management to take on those risks. The results are in conformity with that of Dionne and Triki, (2013) which established that having directors with a university education on the board is an important determinant of the hedging level.

*H<sub>3</sub>: Board financial expertise has no significant effect on risk management*

### **3. Research Methodology**

According to International Accounting Standards (IAS) 32 and 39, listed firms must disclose their usage of risk management tools in their financial statements. In this regard, a longitudinal research design was used and the data were collected from audited financial statements of non-financial firms from January 2010 to December 2017. The target population of the study was 67 listed firms in Nairobi Securities Exchange as of 31 December 2017. Based on the inclusion-exclusion criteria, a total of 17 financial firms including banks and insurance companies were excluded from the study. Another 7 investment companies were also excluded because they invest in other firms listed at the securities exchange and their performance and operation activities are highly correlated with other firms. Data for two firms were missing thus remaining with 41 listed non-financial firms that fit the requirements of the study. The final sample comprised 41 non-financial listed firms and 328 firm-year observations.

The study used a binary variable as the dependent variable, one for financial derivative users and zero for non-users as a tool for risk management. The ordinary least square technique can no longer generate the best linear unbiased estimator when a dependent variable is binary. In this situation, a non-linear binary variable adopts the maximum likelihood (ML) estimation technique which requires an assumption about probability distribution like logistic function. The binary logistic regression model applies in the case where the dependent variable is binary and the predictor variables are a mix of a categorical and continuous variable and the data not normally distributed (Hosmer and Lemeshow, 2013).

The study proceeds towards testing the proposed hypotheses where the researcher analyzed the influence of board independence, CEO tenure and board financial expertise that may have an impact on risk management using binary logistic regression. The effect of firm size and firm performance was controlled whose impact on risk management is evidenced in the prior literature. Following the work of (Fok *et al.*, 1997; Géczy *et al.*, 1997; Allayannis and Ofek, 2001 and Purnanandam, 2008), the study used logistic regression analysis to examine the effect of corporate governance attributes on risk management and econometrically, binary logistic regression estimates a multiple linear regression function defined as;

$$\textit{logit} = \beta_{0it} + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}$$

Where; C = Control variable (firm size and firm performance),  $X_1$  = Board independence,  $X_2$  = CEO Tenure,  $X_3$  = Board financial expertise,  $\beta_0$  = Constant and  $\beta_1 - \beta_3$  = coefficient of estimates, *logit* = is the probability of using derivatives as a measure of risk management,  $\varepsilon_{it}$  = error term.

### 3.1. Summary of Variables

**Table 1:** Measurement of Variables

<b>Variables</b>	<b>Measure</b>	<b>Empirical Studies</b>
<b>Dependent Variable</b>		
Risk Management	Dummy variables 1 for financial derivative users and 0 for non-users	Géczy <i>et al.</i> , 1997; Purnanandam, 2008
<b>Independent Variable</b>		
Board Independence	The number of non-executive directors divided by the total number of directors on the board.	Ferreira & Kirchmaier, (2013)
CEO Tenure	The number of years the CEO has been in the company.	Souder <i>et al.</i> , (2012)
Board Financial Expertise	The number of board members with financial experience.	Minton <i>et al.</i> , (2014) Aebi <i>et al.</i> , (2012)
<b>Control Variable</b>		
Firm Size	Natural log of total assets.	Laeven <i>et al.</i> , (2014)
Firm Performance	Measured as return on assets	Chen <i>et al.</i> , (2005)

## 4. Findings

The section presents data analysis, presentation, and interpretation of the findings and discussions of the results.

### 4.1. Descriptive Statistics

The statistical summary for risk management, board independence, CEO tenure, board financial expertise, firm size, and firm performance are presented in Table 2. Findings showed that non-financial listed firms had board independence with a (Mean = 0.659, SD = 0.20, Skewness = 0.059 and Kurtosis = 3.149) implying that the proportion of non-executive directors to the total number of directors on the board on average was at 65.9 percent. A review of CEOs tenure which is indicated by the number of years the CEO has been in the company revealed that CEOs have been in the company between a minimum of 2 years and a maximum of 10 years (mean = 4.554 SD = 2.212, Skewness = 0.072 and Kurtosis = 1.947). This implies that on average the CEOs have been in the company for four years.

Statistical results of board members with financial expertise revealed that (mean = 1.198, SD = 1.228, Skewness = 0.714 and Kurtosis = 2.439) implying that members with financial expertise are mandated by the shareholders to oversight the complex operations of the firm and the risks associated with the firm's so as to serve their interests of value maximization. More findings revealed that risk management which is a practice of creating economic value in a firm by using financial instruments to manage firm



risk, exposures and hedge against uncertainties was at a (mean = 0.488, SD = 0.501, skewness = 0.049 and kurtosis = 1.002). Statistical results suggest that 48.8 percent of firms have adopted financial derivatives instruments as risk management tools, implying that there is relatively low usage of the financial derivative by non-financial listed firms in Kenya.

**Table 2.** Descriptive Results of Study Variables

Stats	Obs	Min	Max	Mean	Sd	Skewness	Kurtosis
Risk Management	328	0.00	1	0.49	.50	0.05	1.00
Board Independence	328	0.07	1.5	0.66	.20	-0.06	3.15
CEO Tenure	328	2.00	10	4.55	2.21	0.07	1.95
Board Financial Expertise	328	0.00	4	1.20	1.23	0.71	2.44
Firm Size	328	8.25	11.28	9.68	.61	0.07	3.16
Firm Performance	328	-1.04	0.34	-0.02	.19	-1.96	9.48

**Source:** The author

#### 4.2. Hypothesis testing

The hypotheses were tested using a random effect model. As suggested by Kohler and Kreuter (2009), the random effect estimator model handles better models that contain time-invariant variables which are commonly omitted by the fixed-effects model. The statistical findings revealed by the logistic regression model showed Pseudo  $R^2 = 0.2816$  implying that approximately 28.16 percent of the variation in the output can be explained by the predictor variables in the model. The contribution was statistically significant at  $p < 0.05$  level of confidence.

Hypothesis one ( $H_1$ ) stated that Board independence had no significant effect on risk management among listed non-financial firms. Findings in Table 3 showed that board independence had coefficients of the estimate which was negative and statistically significant based on ( $\beta = -1.14$ ,  $p < 0.05$ ) values. This suggested that there was up to -1.14 unit decline in financial risk management for each unit increase in board independence. The results are consistent with the findings of Osuoha and Osuoha (2015) who found that board independence had a negative and significant effect on the relationship between corporate governance and derivatives usage.

The second ( $H_2$ ) hypothesis stated that CEO Tenure had no significant effect on risk management among listed non-financial firms. Further, the findings revealed that CEO tenure had coefficients of the estimate which was significant and negative based on ( $\beta = -0.56$ ,  $p < 0.05$ ) values. As such, the longer CEOs serve in the firm, the more the decline in risk management. The results conform to the findings of Campbell *et al.*, (2011) on the association between CEO tenure and derivatives and they found that CEO tenure was significant and negatively related to risk management.



hence, they are unlikely to be at the forefront in the use of financial derivative instruments to manage risks. The literature does not reach a clear consensus on the impact of board independence on risk management. However, the research is opposite to the argument that hedging increases with outside directors. To enhance the use of financial risk management, there is a need for the independent members of the board to have a minimum level of financial knowledge (education, experience, and accounting) to monitor risk management activities.

The statistical findings revealed that CEO tenure is linked with a decline in risk management. The implication is that long-tenured CEOs are less likely to use financial derivatives to manage risks since they tend to be less receptive to new business ideas that require hedging activities. It implies that an increase in CEO tenure means a reduction in hedging activities. It is therefore important for CEOs overseeing risk management to understand that the utilization of derivatives instruments increases shareholders' value as well as their own incentives. Also, it is essential to appoint new CEOs once the term of the existing ones expires since newly appointed CEOs are more likely to consider risky alternatives and are more receptive to new business ideas that enhance firm value.

Finally, board financial expertise enhances the risk management of non-financial firms. The findings suggest that members of a board that are financially knowledgeable have a better understanding of the sophisticated financial tools involved in risk management activities hence they engage more actively in hedging the firm's exposure to risk and to enhance its shareholder's value. Board financial expertise is essential to enabling risk management and therefore it is vital that board members have financial experience to identify risks that are more useful to shareholders in ordinary times and promote management to take on those risks. Moreover, all non-financial firms must have at least one independent qualified financial expert sitting on the board to help the firm use sophisticated financial instruments for hedging.

## **5.1. Recommendation**

### **5.1.1. Managerial and policy implication**

The study results have important implications for practicing financial managers. The results will form the basis for the understanding of risk management through the use of financial derivative instruments for hedging against exposures and thus will be helpful to financial managers when making risk management decisions. This is in line with Asghar *et al.*, (2018) who found that corporate governance within a firm encourages managers to use derivative instruments as risk management tools along with investment, financial, and operational strategies for the best interests of the business and its

shareholders. This study provides policy guidelines for listed firms in Kenya that aim to make optimal use of derivative instruments for reducing interest rates, foreign exchange rates, commodity prices, and equity price exposures. The study also recommends that policymakers must develop a well-established derivative market in Kenya to create awareness of derivatives' usage and to facilitate firms that have high foreign transaction can get benefit by optimally utilizing hedging techniques. As a result, it will not only facilitate the firms to achieve their primary goal of shareholders' wealth maximization but may enhance economic growth.

### **5.1.2. Theoretical implication**

The research extends the literature on risk management by employing financial derivatives instruments. This study is among the few that provided insights into a comprehensive set of corporate governance attributes such as board independence, CEO tenure, and board financial expertise. The study also adds to the strand of corporate governance literature by extending the current literature on corporate governance and risk management activities. Though this area has been vastly researched in the financial sector, there is a dearth of such studies in non-financial firms. The research makes a contribution in this area and is the first few studies to document the hedging behavior of firms on corporate governance attributes, and financial risk management among listed non-financial in Kenya. Further research is needed to explore the roles of directors' knowledge and experience in the processes of risk management. While this study only examined internal governance mechanisms, it is possible that external governance factors not explored may have an effect on risk management. This points to the need for future researchers to explore the effect of external corporate governance factors.

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## **Investigating the Existing Barriers in Export Performance of Small and Medium Scale Enterprises Case Study: Iran's Isfahan Stone Industrial Cluster**

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### **Abstract**

The governments across the world have recognized the importance of small and medium-scale enterprises and their role in economic growth, social solidarity, employment, and regional and local development. This study aims to investigate the existing barriers in export performance of small and medium-scale enterprises. It is causal research and has an applicable purpose. In order to test the proposed hypotheses and perform statistical analyses, field study has been utilized. The required data has been gathered by means of questionnaire. The statistical population included 1400 managers and deputies of Isfahan Stone Industrial Cluster among which 211 persons were selected. Confirmatory factor analysis was employed to confirm validity and reliability of the questionnaire which was obtained through the Cronbach's alpha coefficient equal to 0.744. The hypotheses were tested by means of structural equation modeling and Lisrel software. Given data analysis, the results indicate that internal barriers of the firm, including companies' internal barriers and product barriers, as well as external barriers, such as industry entry barriers, market barriers and environmental barriers, are effective on export performance of the firm.

**Keywords:** Internal barriers to exports, external barriers to export, export performance, small and medium- scale firms, Isfahan stone industrial cluster

### ***Suggested Citation:***

Dehaghi, M. R. (2020). Investigating the Existing Barriers in Export Performance of Small and Medium Scale Enterprises Case Study: Iran's Isfahan Stone Industrial Cluster. *Journal of Business Management and Economic Research (JOBMER)*, Vol: 4, Issue: 4, 335-350.

## **1. Introduction**

The ultimate goal of any economy is to enhance people's welfare through sustainable growth and development which is impossible in the current world without paying attention to the industry and industrialization. Many believe that higher welfare can be achieved by improved industrial performance as the driving engine of economic growth (Mohtashami, 2015). The idea of developing export of non-oil products has long been considered extensively by economic experts and has passed many ups and downs theoretically and practically. Clearly, a vast country like Iran that has affluent natural resources must be able to obtain a special status by manufacturing and exporting non-oil products in the world especially the Middle East.

But during the past fifty years, oil has not only been the most important export product but the effective and dictating factor of economic plans and changes. Today, production and export play a major role in the framework of any healthy economy in the global economy. The role of export and its importance in the growth and prosperity of economy of developing countries has been recognized well. One of the important economic issues that many countries especially developing countries are now suffering is deficit in external balance and lack of currency which will be led to foreign exchange imbalance, decreased value of national currency and capital outflow. Although there are various ways to supply foreign exchange deficit but it must be stated that the most suitable and fundamental method is increased exports which is a basic and economic solution.

Export development has played an important role in economic development of some countries and specifically the newly industrialized Southeast Asia. However, it is noteworthy that simultaneous implementation of two strategies of import substitution and export development has been the key to success of the above-mentioned countries. Developing export of non-oil products has a specific priority not only from foreign exchange viewpoint but also in terms of creating employment in the country. It seems that variety of export of non-oil products is effective economically and as a political solution to proceed the government's purposes. Fortunately, the authorities and people nowadays know that the real and sustainable progress of economy depends to a large extent on export development and achieving secure markets in various countries.

The governments across the world have recognized the importance of small and medium-scale enterprises and their role in economic growth, social solidarity, employment, and regional and local development. Due to recognizing the potential of growth of small and medium-scale enterprises, most governments in developing countries have preferred them through supports and other incentives. Preferably, small enterprises must be supported comprehensively and through different institutions at

all export levels. The major reason for helping the small and medium-sized enterprises is to improve their competitiveness in global markets and help develop the export of a country. Unfortunately, small and medium-scale enterprises do not constitute a homogenous group and the research has shown that needs of enterprises are changed in terms of the level of export development and industry type. Export development programs of the government should be designed and executed considering the audience or target companies. Moreover, these programs must be evaluated regularly for offering appropriate services to those needs and also, they must correspond with the customers' needs (Ebrahimi et al., 2013).

Export development in small and medium-scale enterprises not only has positive effects on trade balance but leads to more employment. In all newly industrialized economies, small and medium-scale enterprises have a major role in the development strategy based on increased export. Studies show that small and medium-scale enterprises have allocated 25-30 percent of the global export averagely. In the US, small and medium-scale enterprises allocate nearly 33.7 percent of export. This is equal to 31 percent in the EU countries, about 40 percent in India, 18 percent in Indonesia, more than 25 percent in Pakistan, about 20 percent in Philippines, and 60 percent in China. Increasing role of small and medium-scale enterprises in export of various countries has been due to adopting appropriate policies. Many countries have proposed various policies to develop, reinforce and enhance competitiveness of small and medium-scale enterprises in the global markets. There might be few countries in which there are not any rules to support such enterprises (Monavarian et al., 2012).

Despite numerous potentials of small and medium-scale enterprises for export development, several barriers and limitations may decrease activity, growth and competitiveness of these enterprises and thus, their access to a suitable market share. According to a survey by one of the non-governmental organizations in the US, 95.1 percent of small and medium-scale enterprises is destroyed up to five years after beginning to work. The changing economic environment and socio-economic forces decrease the effect of policies and services offered by public firms. Export development policies are effective on export performance directly and indirectly. Export development programs can be effective on export performance through enterprises' access to export capabilities or elimination of export barriers. Other study explored the effect of export support programs and export performance. They believe that policymakers should help small and medium-scale enterprises overcome export barriers. Export barriers of small and medium-scale enterprises root in various factors. Some problems are related to the small nature of these firms and lack of a prominent individual and significant role in the industry. Some of them are due to market inefficiency and some other are because of weak and discriminatory policies. The studies reveal that the barriers facing small and medium-scale enterprises are different in various countries depending on the level of development or economic system. Thus,

the present study seeks to answer this question: how is the effect of pre-identified factors on export performance of Isfahan Stone Industrial Cluster which are mostly small and medium-scaled?

## **2. Theoretical Review**

Various studies have been conducted about the effective factors on export performance. In each study, some variables have been taken into account which influence export performance directly or indirectly according to the author's viewpoint. The variables under study are to some extent extensive so that contradictory conclusions, ambiguities and findings have also been obtained. Most primary studies on export have been about recognition of exporters from non-exporters. It means that the internationalization process of the company has mostly been considered. Since then, the researchers explored the effective external factors on export behavior like accurate incentive programs. In the third phase, the researchers investigated the factors related to behavior of companies which were proportional to export and its results. The researchers of the fourth group explored the factors which were effective on export performance or success of companies.

For instance, Kasikead et al. (1996) explored the effect of three factors of objective characteristics of a firm, variables associated with recognition of export (export size and experience, export motivation, export difficulties, competitive advantages) and commitment to export (distinct export sector, entering a foreign market and customer selection standards, permanent visiting of the export market, planning and export control) on the export performance in European countries through proposing a model. White et al. (1998) analyzed several measurement methods of export performance in service sector. Valos and Baker (1996) proposed a model for the effective variables on export performance in Australia. They divided the variables into two classes, i.e. intangible (attitude, skill, knowledge) and tangible (distribution, product, customer relationship, control, suppliers). Shoham and Kropp (1998) explored the effect of marketing mix variables (product, price, place, and promotion) on export performance. In the same year, Zou and Stan (1998) introduced a framework for classification of various effective factors on export performance through reviewing previous studies. This framework classifies the effective factors on export performance into two dimensions: controllability versus uncontrollability and inter-organizational versus extra-organizational. By combining these dimensions, four quarterages are created for division of the effective factors on export performance.

Deal et al. (2000) investigated the effect of firm characteristics (firm size, degree of perceived barriers to entry and years of the firm engagement in business), firm competency (export experience) and export marketing strategies (focus on the market versus variability as well as acting actively versus acting passively) on export performance of the firm (Kordenaeeij et al., 2005).

Some researchers found evidences of the positive effect of export on economic growth and some studies indicate that export development will create more employment comparing with import substitution. There are also evidences that show export development and import substitution have positive and negative correlation with total factor productivity, respectively. Shabani et al. (2012) indicated that internal barriers of a firm, barriers to product, market barriers and macro-environmental barriers have a negative, converse and significant relationship with export performance and barriers to entering an industry do not have a significant relationship with export performance. The study of (Haddoud et al., 2017) also finds that whilst both informational and experiential export promotion programs improved all forms of SMEs' relationships, only experiential forms had an indirect effect on export performance. Further, only relationships with foreign buyers had a positive impact on export performance

### **2.1. Internal and external barriers to export**

Wach describes that the path chosen for internationalization depends on both internal and external factors and they can be classified as (i) exporting modes like indirect, direct and cooperative export, (ii) contractual modes like contract manufacturing, assembly operations and licensing and (iii) investment modes like foreign branch, joint venture subsidiary and wholly owned subsidiary (Wach, 2014c).

External environmental (or exogenous) barriers include issues associated with economic, political-legal and socio-cultural environment of the external market in which the firm is operating in (Wach, 2015). Internal barriers to export are related to lack of adequate resources. For instance, the issue related to correspondence and supplying the importer's standards, proportional designing for the export market, the issues associated with weakness of export unit, lack of a capable human resource to control export activities, inability in financing export activities, and lack of adequate information about external markets are effective on export performance. These barriers can be divided into two sections, i.e. firm-related barriers and product-related barriers.

Many scholars have found that many export problems originate from the external environment. The nature of such problems is diverse: difference in demands and priorities of the foreign customer, unfamiliar rules and situations, competitive intensity, foreign exchange rate and limit. It is possible to classify these problems as the barriers related to the industry, export market and the macro environment (Shabani et al., 2012). Modern approaches by SMEs are also effective in handling most of the traditional challenges posed in internationalization. Firms have evolved in handling internal barriers by finding dynamic solutions from within. SMEs need support from governmental and policy makers to overcome external barriers (Narayanan, 2015).

### **3. Literature Review**

Numerous studies have been carried out about the existing barriers on export performance of small and medium-scale enterprises. Some of these studies are mentioned below.

AL-Hyari et al. (2012) divided the export barriers into two internal and external classes. Internal barriers include information weakness of foreign markets, deficiency in the required abilities for export, financial barriers, product-related barriers and barriers associated with procurement logistics. And external barriers include the current procedures in export activities, inadequate governmental support, intensive competitions in foreign markets and environmental, political, economic and cultural barriers.

Serra et al. (2012) examined the effective factors on tendency toward export of textile companies in England and Portugal. The most important factors on companies' tendency were firm size, competitive advantage, technology and purposefulness.

Ebrahimi et al. (2013) believed that six factors including internal factors, domestic demand conditions, the related and supporting industries, strategy, structure and competition, role of the government and unpredicted events are effective on weakness of stone export in Lorestan province considering the Diamond Model by Porter.

In a survey, Alrashidi (2013) pointed out that export barriers of companies include lack of efficient and educated personnel in export, lack of managers' experience in foreign markets, little awareness on research in foreign markets, lack of support of the government from export, high cost of importing the raw material, changing of monetary policies and tax, intensive competition and domestic security of countries.

Shah Hosseini and Faghih Aliabadi (2013) explored and identified the challenges of export development of technical and engineering services in oil and gas. This study was carried out thru qualitative method and content analysis approach. They obtained a conceptual model consisting of eight main themes including the developmentalist government, industry, oil and gas industry, legal factors, financial factors, technical technological factors, structural factors and managerial systems.

Yusefi et al. (2014) divided internal barriers to export into factors of firm, product and marketing. They concluded the positive effect of these factors on decreased export.

In a survey, Ranjbar et al. (2014) divided external barriers to export into factors of industry, market and macro environment. The results have confirmed the positive effect of these factors on decreased export.

Karbasi and Tohidi (2015) estimated the demand function for pistachio export in Iran. The results show that preparing and implementing supportive policies to decrease marginal cost of pistachio manufacturers is essential given the demand conditions in destination markets.

Pidani and Mahmood (2016) explored the relationship between the use of exploitation capacity of firms and increased competition in the global markets in ASEAN countries. The results reveal that there is a positive and significant correlation between the use of capacity of small and medium-scale enterprises and their export level. Similarly, capacities, competitiveness and organizational performance are important for the growth of small and medium-scale enterprises as priorities.

Amiri Kachami and Chubchian (2017) investigated date export barriers in south of Kerman province. The results demonstrated that four factors explain relatively 73 percent of date export barriers. The highest eigen\_value is related to the factor of lack of knowledge which has allocated 43 percent of export barriers in south of Kerman province. The next factors are policymaking, infrastructure and financial factors.

Hassangholipour et al. (2017) identified and prioritized the key success factors of decorative stone exporters in Iran. The obtained results reveal that Iran has an appropriate status in the stone industry in the world in terms of production level of the mines and processing units as well as stone consumption but does not have a suitable status in the field of exporting and importing of worked and unworked stones. It is necessary to improve the competitive status of Iran in decorative stone export through identification of the key success factors in exportation.

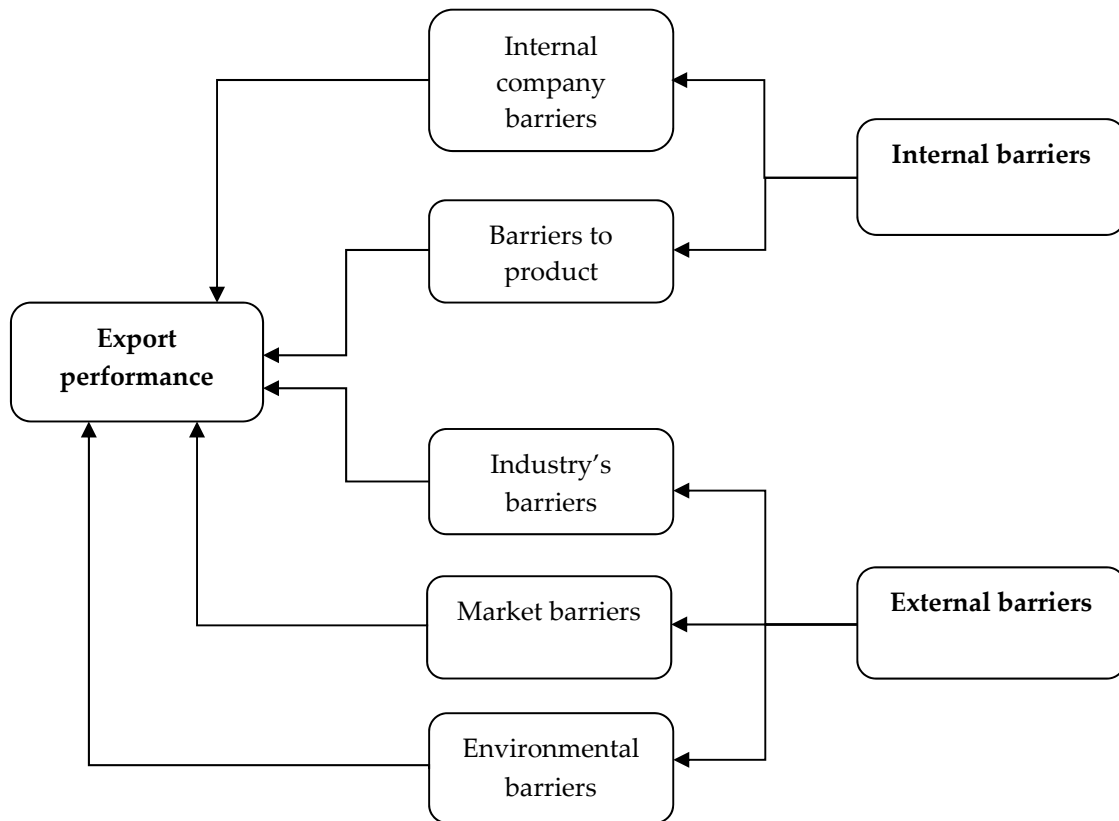
Breckova (2018) mentioned that regulation/bureaucracy and the need for compliance with regulations or local customs proved to be the strongest perceived barriers to foreign trade also year-on year. It can be argued that high bureaucracy is generally the main barrier of domestic SMEs, which may be reflected in their lower performance.

Despite the above-mentioned studies, other studies have also been conducted such as Nazemi and Khani (2010), Gharehche and Shamschiri (2010), Khattak et al.'s (2011), Rahmani et al. (2013), Mehrabani and Tayebnia (2013), Pourashraf (2014), Karani et al. (2014) and Justin (2017). This issue has been explored in each study using various methods and data.

#### **4. Conceptual Model**

According to the literature review, the research conceptual model is summarized in Figure 1. The framework defines the connection between the main concepts of a study. This study

seeks to investigating the existing barriers in export performance of small and medium-sized enterprises.



**Figure 1.** Conceptual model

## 5. Research Hypotheses

Given the nature of the model, the hypotheses are formulated as below:

Hypothesis 1. Internal company barriers are effective on export performance of the firm.

Hypothesis 2. Product barriers are effective on export performance of the firm.

Hypothesis 3. Industry entry barriers are effective on export performance of the firm.

Hypothesis 4. Market barriers are effective on export performance of the firm.

Hypothesis 5. Environmental barriers are effective on export performance of the firm.



## 6. Research Methodology

This study is applicable from objective aspect and is causal from methodological aspect since the researcher intends to explore the effective barriers on export performance of small and medium- scale enterprises. Field study has been utilized for data collection.

The required data was gathered using the questionnaire. Reliability of the questionnaire was confirmed thru the Cronbach's alpha coefficient and its validity was determined thru SPSS software. The obtained Cronbach's alpha coefficient was equal to 0.744 that showed adequate reliability of the questionnaire. The statistical population included managers and deputies at Isfahan Stone Industrial Cluster (1400 stone cutting units). Considering that the structural equation modeling was used for data analysis, 211 persons were selected as the sample size via the below formula:

$$5q \leq n \leq 15q$$

Finally, structural equation modeling was carried out with the help of Lisrel software in three sections. First, goodness of the model, i.e. data quality is explored. Second, factor analysis of the model, i.e. quality of questions is explored and third, t-statistic is used for testing of hypotheses.

## 7. Research Findings

### 7.1. Factor analysis- the first step

The first section explores goodness of the model based on the collected data.

**Table 1.** Exploring goodness indexes

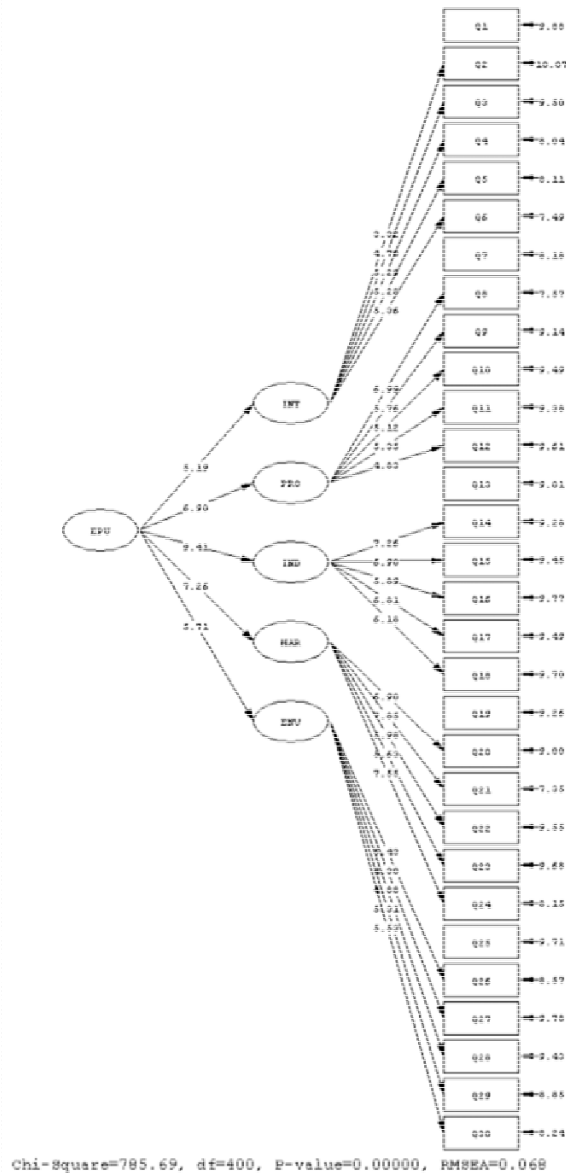
Goodness index	The standard value/source		The estimated value
Chi square to degree of freedom (x2/ df)	<3	Carmines and McIver (1981)	1.98
Root mean square error of approximation (RMSEA)	<0.08	Hair et al. (1998)	0.068
Rot mean square residual (RMR)			0.052
Non-normed fit index (NNFI)	>0.9	Bentler and Bonett (1980)	0.92
Comparative fit index (CFI)	>0.9		0.93
Incremental fit index (IFI)	>0.9		0.93
Goodness of fit index (GFI)	>0.8	Etezadi-Amoli and Farhoomand (1996)	0.80

As it is observed in Table 1, all goodness indexes are according to the standard value and show that the model's goodness is confirmed by the collected data.

### 7.2. Factor analysis- the second step

In the second step, the effective indexes on export performance of small and medium -scale enterprises are explored that are observed in diagrams 1 and 2.

As it is observed in Diagrams 1 and 2, all goodness paths are according to the standard value and indicate confirmed quality of questions.



**Diagram 1.** P-value model for factor analysis- the second step

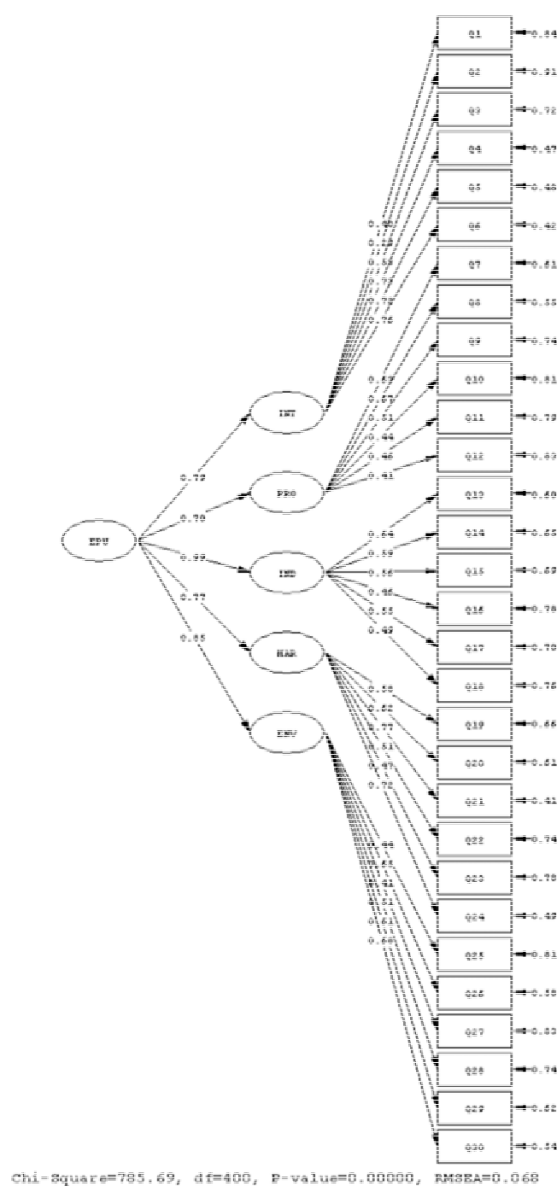


Diagram 2. Model of standard coefficients for factor analysis- the second step

### 7.3. Testing of hypotheses

In order to explore significance of the indexes, t-statistic was used. Summary of the results is shown in Table 2.

**Table 2.** Results of hypotheses

<b>Hypotheses</b>	<b>t-statistic</b>	<b>Standard coefficient</b>	<b>Result</b>
1: Internal barriers	5.19	0.79	The hypothesis is confirmed
2: Product barriers	6.90	0.70	The hypothesis is confirmed
3: Industry entry barriers	9.41	0.99	The hypothesis is confirmed
4: Market barriers	7.26	0.77	The hypothesis is confirmed
5: Environmental barriers	5.71	0.85	The hypothesis is confirmed

As it is observed in Table 2, given that all t-statistics are equal to 5.19-9.42 and the values are not in the interval 1.96 to -1.96, it can be concluded that all hypotheses are significant. It means that internal barriers, barriers to product, barriers to entering an industry, market barriers and environmental barriers have a significant effect on export performance of the firm. On the other hand, path coefficients are equal to 0.70-0.85 and are positive and significant. Given the obtained results from the hypotheses, internal barriers of the firm, barriers to product, barriers to entering an industry, market barriers and environmental barriers have a positive effect on export performance of Isfahan Stone Industrial Cluster and all hypotheses are confirmed.

The results of hypotheses 1 and 2 are consistent with the results of studies performed by Shabani et al. (2012) and Yusefi et al. (2014), because they concluded, too, that internal barriers of the firm like lack of knowledge related to export markets or inadequate information about the market as well as low quality of the products or not manufacturing the products proportional to the customers' needs in different markets can be effective on failure of export performance.

The obtained result from hypothesis 3 is not consistent with the result of Shabani et al.'s study (2012), since they concluded that barriers to entering an industry are effective on failure of export performance and also, they are not effective on export performance. But the result of this hypothesis is consistent with that of Ranjbar et al.'s study (2014).

The results of hypotheses 4 and 5 are consistent with the results of Shabani et al. (2012) and Ranjbar et al.'s study (2014), as they concluded that one of the effective factors on failure of export performance can be market barriers such as cultural and linguistic differences, the foreign customer's recognition of the brand. Besides, other macro-environmental variables contain the factors which are out of the company's control such as foreign exchange rate, export promotion policies, international trade agreements, and so on. Public institutions can increase export barriers, for instance, lack of rules which support the exporters and lack of export infrastructures and shipping problems are the effective factors on failure of export performance. Exporters suffer from weakness in collecting and supplying information about identification of export opportunities and lack of suitable promotion programs,

because lack of knowledge about foreign markets is one of the major effective factors on export. The government can have a main role in creating the required infrastructures to facilitate export. On the other hand, exporters in some developed countries are faced with infrastructural problems. A product which has been designed well and produced with a high quality cannot safely be reached to the importing country without a suitable transportation system.

## **8. Conclusion and Recommendations**

Considering the role of export in creating employment opportunity and supplying foreign currency for imports especially in developing countries, permanent presence in the international markets is vital for many countries from political and economic aspects and survival of economy of countries depends on presence in international markets. From this aspect, accurate decision-making and adopting appropriate policies at various levels have become essential given the complexity of increasing competitions. Thus, it can be concluded that many problems and barriers to export development in small and medium-sized enterprises have structural nature and these enterprises cannot overcome them alone. Moreover, many of the existing barriers root in information weakness of the firms and the current process of export. Therefore, proposing strategies to provide the required business information for exporters and facilitate foreign trade especially in export field is one of the strategic necessities in export development.

Hence, the following applied recommendations are proposed:

- Companies which intend to enter foreign markets for the first time must gain the related information to be able to achieve suitable knowledge about these markets or implement their own policies and programs.
- It is recommended to utilize high quality raw material and produce high quality new products to achieve foreign customers' satisfaction and finally, enhance export performance of the firm.
- It is recommended to develop the company through cooperation with competitive firms which act in the same field to enjoy high technical level and technological power and manufacture products thru cooperation agreements and distribute them in foreign markets by offering competitive prices proportional to the expenses.
- It is recommended to hire proficient people from the countries which intend to be active there and make it possible to become familiar with cultural characteristics and differences of the intended country so that they can create an appropriate market through manufacturing products that are proportional to their culture.

- It is recommended to exploit the government's supports maximally by aligning with the enacted rules and regulations by the government in order that they can increase their liquidity for purchasing suitable raw material and supplying expenses such as warehousing, buying equipment, shipping, etc. thru receiving loans and facilities.

## **9. Acknowledgment**

The author is extremely grateful to Engineer Mohammad Jafari Fesharaki for his administrative and technical support in the process of this study.

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## **The Influence of Behavioural Intention to use the ICT Tax System on Tax Compliance Behaviour: The Efficacy of Mediating Effect**

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### **Abstract**

The purpose of this study was to estimate the effect of behavioural intention to use the ICT tax system (ICTTs) as a mediating factor on the tax compliance behaviour in Tanzania. The sample size for this study was made up of 109 taxation students from higher learning institutions. Partial Least Square Structural Equation Modeling was used to analyze the data in two stages; firstly, the measurement model and secondly, the structural model. The study findings depict that the use of the ICTTs to influence compliance behaviour is partially mediated by behavioural intention. Moreover, the results indicate that performance expectancy and effort expectancy have both significant direct and indirect effects on tax compliance behaviour (complementary mediation). That means, in introducing technology, the government has to ensure the technology is simple, and enhance performance and productivity. We recommend the government to continue investing in technology awareness campaign which has an impact on improving tax compliance behaviour for both current and future taxpayers.

**Keywords:** ICT tax system, Tax Compliance Behaviour, Mediator Variable, UTAUT

### ***Suggested Citation:***

Masunga, F. J., Kiria, L. & James, M. (2020). The Influence of Behavioural Intention to use the ICT Tax System on Tax Compliance Behaviour: The Efficacy of Mediating Effect. *Journal of Business Management and Economic Research (JOBMER)*, Vol: 4, Issue: 4, 351-370.

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## **1. Introduction**

The inception of information technology is perceived as means of bringing great impact in tax compliance behaviour especially in developing countries. In developing world, businesses and agencies of the government are turning into e-government and e-business as an efficient means of accomplishing business transactions.

ICT tax system has brought new slant of managing and doing business and providing services to customers and has modernized and transformed government, business entities in digital form (Kirti and Agrawal, 2014). The application of modern electronic tax system plays an important role in minimizing operational costs and promoting efficiency and effectiveness in service delivery in all walks of life including tax assessment and payment transactions (Harrison & Nahashon, 2015).

In developing countries about 35 billion US Dollars to 160 billion US Dollars revenue from corporate taxpayers vanished mainly due to low compliance caused by poor application of technologies in tax transactions (Cobham, 2005). Tanzania being one of the developing countries has been structuring tax operations by modernizing and improving the tax system since 1960s to improve tax compliance behaviour. The reforms have been important in driving taxpayers to pay their taxes voluntarily and maximizing the revenue collection (Fossat and Bua, 2013; Kloeden, 2011). Reforms comprehended the introduction of value-added tax, programs to improve taxpayer services and the inception of the ICT tax systems (OECD, 2017).

ICT tax system facilities such the emphasize in adopting and use of Electronic Fiscal Devices (EFDs), the online registration system for Taxpayer Identification, online processing for the motor vehicles (CMVRS), Automated System for Custom Data (ASYCUDA++), the system for drivers' license (CDLS), filing of tax returns electronically and other tax related documents and many more have been introduced by many tax authorities in developing countries (TRA, 2010).

Despite the adoption of several ICT tax system initiatives in developing countries, evidences of changes in voluntary tax compliance behaviour among taxpayers is not well documented (OECD, 2014). Empirical evidences are required in the ICT perspective and tax amenability behaviour in order to support the massive investments in the ICT tax system related decision strategies from current taxpayers and the future taxpayers.

This study examined the influence of behavioural intention to use the ICT tax system on tax compliance behaviour in measuring the efficacy of behavioural intention on interceding the associations amongst technology and tax acquiescence behaviour by applying the combined theory of acceptance and use of technology (UTAUT).

Previous studies on the ICT tax system and tax compliance used tax specialists, individual taxpayers and tax officers as unit of analysis (Fagbemi, Uadiale & Noah, 2011). This study focused on students who were taking taxation as one of their module in accountancy. The use of higher learning students as unit of analysis in this study is justified by the fact that higher learning students are future taxpayers. Examining this group is important as this will figure out whether taxation students have the knowledge on the ICT tax system. Further to this, examining the manner and conduct intention (BI) to use the ICT tax system in tax transactions on this particular group is important because the way a certain group has an influence over a certain action (SN) and a way a person or society is capable to execute or control over a given behaviour (PBC) the factors of BI can yield different results in students setting as opposed to working environment (Taylor and Todd, 1995).

Taxpayers tax compliance behaviour is often determined by changes in tax rates, auditing prospect, taxpayers' perception of the government spend on taxes collected, the interest of late payment or submission of tax returns, total ways of particular society, individual and social behaviour (Kirchler, 2007). However some modern factors apart from the listed above have emerged due to the growth of technology. These include and not limited to the level of transforming the ways of tax assessment, collection and accounting from digital business and e-government (Omar *et al.*, 2008). Many studies on the ICT tax system are much prevalent in industrialized countries (Razak & Adafula, 2013; Admasu & Daare, 2017). Few are available in developing countries (Rukundo, 2016; Muita, 2011). As such, empirical studies on the influence of the ICT tax system and the effectiveness of mediating effect on tax compliance behaviour still scant.

## **1.1. Review of Literature**

### **1.1.1 Theoretical review**

This study used UTAUT to explain the ways taxpayers can adopt new technologies and their plan to use. The theory is the blend of a number of models from different theories that address the behaviours of individuals and taxpayers in using technology in tax paying practices. Explaining the

concept of using the ICT tax system, UTAUT theory was preferred in this study because it has high volume of variances in describing the behaviours of users in adopting the technology. According to UTAUT theory, four constructs namely performance expectation (PE), effort expectation (EE), social inspiration (SI) and facilitating conditions (FC) form the basis in explaining tax compliance behaviour and intention to use technology. This theory further describes how technology expected to improve the performance and yield more results by changing the behaviour of the users.

It has been identified that the theory of combination is a prevailing model following its usefulness structure with higher explanatory power ( $R^2$ ). Despite its usefulness its efficacy and relevance is questionable due to the fact that it fails to examine the direct influence which might reveal new relationships as well as other important factors of the study (Bagozzi, 2007). However using PLS-SEM in analyzing the model, it overcomes the problem of this theory following its ability of analyzing total effects (Hair *et al.*, 2017). Performance Expectation is the point in which users are in opinion that practice in a specific technology will facilitate and cause increased efficiency and hence maximize tax compliance level (Hericko *et al.*, 2010). Previous studies revealed that PE has a positive effect on tax compliance behaviour (Hericko *et al.*, 2010). Empirical studies show that performance expectation has a great influence on the behavioural intent to use the ICT tax system (Addo, 2014; Viswanath *et al.*, 2001). Liu (2009) and Park, Yang, and Lehto (2007) show that, PE has statistical significance influence on intention of society to accept and use the ICT tax system. Effort expectation or expectancy (EE) concerns with the extent to which technology is easy to be used by users, the model reported that EE has substantial effect on the adoption and use of technology (Alawadhi & Morris, 2008; Alshehri & Drew, 2012). Resulting are the propositions:

*H<sub>1a</sub> : Performance expectation (PE) on the use of the ICT tax system has a direct positive effect on behavioural intention to use the technology.*

*H<sub>2a</sub> : Effort expectation (EE) on the use of the ICT tax system has a direct positive effect on behavioural intention to use the technology*

### **1.1.2 Empirical evidence**

Tax compliance is articulated as adhering to all tax duties as the law requires which encompasses the payment the correct assessed taxes (Marti, 2010). It is also the way of submission of all tax documents as required by the tax laws ; declaring all the amount required to be taxed openly and

remitting all taxes within the stated time willingly (Singh 2003; Chepkurui *et al.*, 2014; Musimenta *et al.* 2017). ICT tax system is defined as online method and process which assists taxpayers to access all services electronically without come into contact with tax authorities (Wasao, 2014; Night, 2019).

Empirical literatures indicated that behaviour to perform (BI) has a positive relationship on actual usage of the ICT tax system (Makokha & Ochieng, 2014; D'Ambra, Wilson, & Akter, 2013). However some studies confirm that there is a negative effect of BI and actual usage (tax compliance behaviour) (Cho *et al.*, 2015). Studies by Meftah, Gharleghi, & Samadi (201) and Mohammadi (2015) affirm that when users of the ICT tax system are informed and educated of the values of using the ICT tax system in reporting their tax material, assist taxpayers in their records and time of paying taxes then the probability of using the technology increases. This suggests that awareness creation among prospective tax payers and policy makers including higher learning students is of paramount importance to create good future taxpayers who have true picture of the technology used for tax compliance behaviour purpose. Tan (2013) postulates that behavioural intention has a positive effect on the actual usage behaviour of the technology. This means if taxpayers have an intention to use the technology in preparing, paying and submission of tax documents will use the technology repeatedly.

Empirical evidences on the use of technology reveal that social influence plays a fundamental role in influencing individuals in accepting and use of technology (Mandari *et al* 2017). The central to this idea is; adoption and use of technology depends on how users of the ICT tax system consider individuals and entities close to them will view them as an outcome of using that technology (Viswanath Venkatesh & Brown, 2001). Social inspiration plays a great role in influencing users to use technology in their business endeavors which in return will have an impact in tax compliance attitude (Viswanath Venkatesh & Morris, 2000). This notion has been supported by empirical studies like; Fu, Farn, & Chao, (2006); Hung, Chang, & Yu, (2006); Hong, & Kang, (2011). Facilitating condition refers to all necessary facilities and technical assistance to use the technology. The concept implies all resources and support that should be given to individuals to allow easy deployment of the technology for compliance (Brown & Venkatesh, 2005). There is ample evidence which confirms that facilitating condition affects actual usage behaviour of an individual's tax compliance (Honore, Yaya, Marimon, & Casadesus, 2013; Mahzan & Lymer, 2014; Sambasivan, Patrick Wemyss, & Che Rose, 2010). The following propositions were proposed:

$H_{3a}$  : *Social influence (SI) on the use of the ICT tax system has a direct positive effect on behavioural intention to use the technology.*

$H_{4a}$  : *Facilitating condition (FC) on the use of the ICT tax system has a direct positive effect on behavioural intention to use the technology*

Literatures on the ICT tax system and tax compliance behaviour have been in general directed to e-Government services, SMEs, tax specialists and relied more on the segmentation approach by studying the direct effects which has a little knowledge contribution (Yildiz 2007; Fagbemi, Uadiale & Noah, 2011; Razak and Adafula, 2013; Amayi and Clifford, 2013). It is this reason which created a motive to conduct this study under students setting by identifying the efficacy of mediating effect and determining if there are others effects rather that the direct effects (transmittal approach) between the explanatory variables and explained variable (tax compliance behaviour). Through this study the government can come out with strategies to impart awareness for the current and future taxpayers (students). Notwithstanding ample evidence on the influence of the ICT tax systems on the compliance behaviour have been identifies (Kamau, 2014; Mongwaketse, 2015 ;Ngowi, 2014; Ikasu , 2014). Conversely empirical evidence on the efficacy of mediating factor on tax compliance behaviour and the transmittal approach which is a key in determining the indirect effects of independent variables and dependent variables through the mediating variable is insufficient. Studying efficacy of mediating factor of behavioural intention on tax compliance and the indirect effects are of paramount significance as they add more knowledge on understanding nature of the effects and challenges the studies which relied on direct effects only; henceforth the basis of this study.

## **2. Material and Methods**

A survey design was adopted in this study where data were collected at once and intended to test and analyze research model. Development of survey instrument was informed by relevant measurement items adapted from previous relevant studies on identifying suitable and valid measurement items. A self-administered questionnaire, in particular, close-ended type structure was preferred in this study by virtue of its ability to improve responses relative to open ended questions. The level of influence was anchored to five –point Likert scale, in which 1 indicated strongly disagree

and 5 strongly agree. This study took taxation students from higher learning institutions namely Tumaini University and National Institute of Transport as the sample with total of 109 respondents. Data were analysed using Partial Least Square Structural equation modeling (PLS-SEM) which consists of two stages: the measurement model and the structural model (Henseler, Ringle, & Sarstedt, 2015).

PLS-SEM works efficiently on small sample sizes and complex models and relevant for determining direct and indirect effect (Chin & Newsted, 1999; Hui & Wold, 1982). Sample selection was based on rule of thumb which is equivalent to saying that the minimum sample size should be 10 times the maximum number of arrowheads pointing at a latent variable anywhere in the PLS path model (Hair *et al.*, 2016). In examining the influence of behavioural intention to use the ICT tax system on tax compliance behaviour, two modes involved as proposed in PLS-SEM model that are measurement models and structural model as presented in the data. However more emphasis was in the effect of BI as the mediator between UTAUT constructs and tax compliance behaviour and the indirect effects. The following items were reflectively measured; internal consistency reliability using composite reliability (CR), the reliability of indicators (MV) by employing the indicators' outer loadings (OL), and validity of indicators to constructs (CV) using average variance extracted (AVE) and validity of constructs to constructs (DV) using heterotrait monotrait ratio (HTMT). The constructs association were tested using path coefficients, collinearity using variance inflation factor (VIF) and the indirect effects of ICT on tax compliance behaviour (TCB) through behaviour intention (BI).

Indicators of a reflective construct are treated as different (alternative) approaches to measure the same construct (Henseler *et al.*, 2015). Outer loadings of the indicators and average variance extracted used to validate convergent validity of reflective independent variables. On the other hand discriminant validity implies that a construct is exclusive and captures phenomena not represented by other constructs in the model (Voorhees, Brady, Calantone, & Ramirez, 2016). To evaluate discriminant validity; heterotrait-monotrait ratio was used. HTMT was more preferred to assess discriminant validity because the other two methods prove failure and not recommended in recent studies (Henseler *et al.*, 2015). Explicitly, cross-loadings fail to indicate a lack of discriminant validity when two constructs are dreamily correlated. Correspondingly, the Fornell-Larcker criterion performs very poorly, especially when indicator loadings of the constructs under consideration differ only slightly (Voorhees *et al.*, 2016). In addition before data analysis, data were screened for

missing values and other problems such as same values for all questions, inappropriate value assignment and a total of 109 questionnaire remained for analysis.

### 3. Results and Discussion

#### 3.1 Results

##### 3.1.1. Measurement Model (Reflective Measurement)

In the first stage; this study tested items loading with significant t-statistics and p values (Lowry & Gaskin, 2014). Where the empirical t-value greater than the critical value; we concluded that the coefficient was statistically significant at a certain error probability. The common used and suggested critical values for two-tailed tests in social science studies are 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.57 (significance level = 1%) (Hair *et al.*, 2016). Table 1 show that all reflective indicators of the constructs are statically significant except one indicator of social influence indicator that is (t-value > 1.96 and p-value < 0.05). For that reason the results confirm strong convergent validity in the model.

**Table1.** Mean, STDEV, T-Values, P-Values of Indicators

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
<b>bi &lt;- BI</b>	1.000	1.000	0.000		
<b>eff_1 &lt;- EE</b>	0.805	0.797	0.090	8.944	0.000
<b>eff_2 &lt;- EE</b>	0.791	0.777	0.086	9.193	0.000
<b>eff_3 &lt;- EE</b>	0.817	0.810	0.068	12.001	0.000
<b>fac_1 &lt;- FC</b>	0.744	0.699	0.182	4.085	0.000
<b>fac_2 &lt;- FC</b>	0.879	0.830	0.172	5.096	0.000
<b>fac_3 &lt;- FC</b>	0.757	0.692	0.223	3.393	0.001
<b>perf_1 &lt;- PE</b>	0.904	0.890	0.118	7.686	0.000
<b>perf_2 &lt;- PE</b>	0.617	0.563	0.215	2.873	0.004
<b>perf_3 &lt;- PE</b>	0.759	0.699	0.187	4.069	0.000
<b>so_1 &lt;- SI</b>	0.889	0.768	0.265	3.360	0.001
<b>so_2 &lt;- SI</b>	0.515	0.458	0.338	1.525	0.128
<b>so_3 &lt;- SI</b>	0.764	0.652	0.260	2.935	0.003
<b>tcb_1 &lt;- TCB</b>	0.613	0.599	0.116	5.267	0.000
<b>tcb_2 &lt;- TCB</b>	0.922	0.920	0.016	56.539	0.000
<b>tcb_3 &lt;- TCB</b>	0.892	0.893	0.031	28.710	0.000



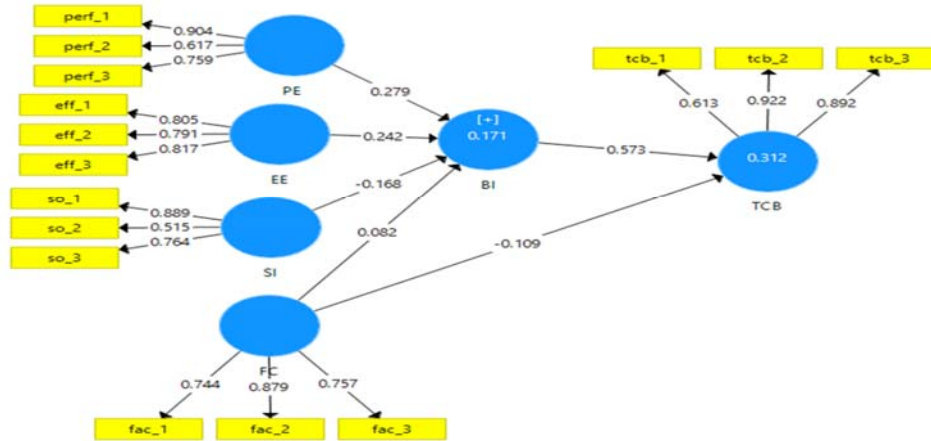


Figure 1. Measurement and structural model evaluation

### 3.1.2. Discriminant validity evaluation

In evaluating discriminant validity); the heterotrait-monotrait ratio (HTMT) was used. HTMT is the average of all relationships of indicators across concepts. It is the heterotrait-heteromethod correlations relative to the geometric mean of the average associations of indicators measuring the same construct (Henseler *et al.*, 2015). HTMT emphasizes on the true relationship between two concepts if were persistently measured. Based on previous studies' results, Henseler *et al.* (2015) suggest a threshold value of 0.85 to 0.9. Threshold above 0.9 suggests a lack of discriminant validity.

HTMT was converted by using the following formula:

$$HTMT \text{ of the constructs} = \frac{\text{between-trait correlations}}{\text{GM of the average correlations}} = \frac{\text{Mean of Between trait correlation}}{\text{GM of the average correlations}}$$

$$\text{Within trait correlation} \quad \text{GM of the average correlations}$$

$$HTMT \text{ ration} = \frac{(0.332+0.727+0.594+0.210+0.122+0.469+0.606)}{7} = 0.437/0.513$$

$$\frac{0.437}{0.513}$$

$$\sqrt{(0.394+0.257+0.752)/3 \times (0.743+0.269+0.676)/3}$$

Hence; HTMT = 0.852 ≈ 0.85.

The value is higher as suggested in the threshold. This means the results strongly confirm the discriminant validity of the constructs. The calculated result indicated that constructs are really distinctive from other constructs by empirical standards (table 2).

**Table 2.** Evaluation for Discriminant Validity

	BI	EE	FC	PE	SI	TCB
BI						
EE	0.394					
FC	0.257	0.752				
PE	0.332	0.727	0.594			
SI	0.210	0.903	1.133	0.743		
TCB	0.606	0.469	0.122	0.269	0.676	

Where: BI: Behaviour Intention; PE: Performance Expectancy; EE: Effort Expectancy; FC: Facilitating Condition; SI: Social Influence; TCB: Tax Compliance Behaviour.

### 3.1.3 Test for internal consistency reliability

In testing internal consistency reliability, composite reliability was preferred for this study due to its sensitivity of overcoming the problem of cronbach’s alpha of conservative measure of reliability. Cronbach’s alpha has a weakness of producing low reliability values (Wong, 2013). It tends to underestimate the internal consistency reliability. Values of 0.70 to 0.90 of composite reliability are regarded as statistically significant and values below 0.6 are an indicative of lack of internal reliability ((Drolet& Morrison, 2001; Hayduk & Littvay, 2012). Basing on our results as indicated on table 3 all the reflective constructs have a value above 0.7 which confirm strong internal reliability except for performance expectancy (PE) and social influence (SI) which have moderate reliability.

**Table 3.** Assessment of consistency reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BI	1.000	1.000	1.000	1.000
EE	0.732	0.742	0.724	0.572
FC	0.719	0.793	0.728	0.687
PE	0.716	0.857	0.641	0.541
SI	0.617	0.777	0.631	0.605
TCB	0.756	0.845	0.781	0.562

### 3.1.4. Mediation analysis

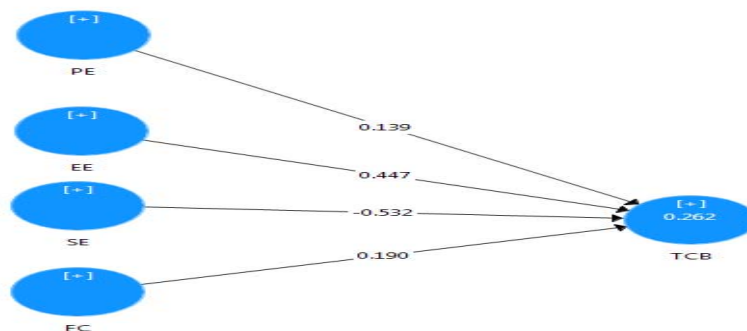
In evaluating the mediating effect of BI on UTAUT constructs and Tax compliance behaviour the test for mediation is of paramount importance. Bootstrapping is recommended approach for evaluating mediation using variance accounted for (VAF). Bootstrapping is robust when applied to large and small sample sizes and no distribution assumption is required (Hair *et al.*, 2016) Mediator is a variable that accounts for part or all of the relationship between predictor and outcome (Baron and Kenny 1986, p. 1176). Mediation can be full, partial or no mediation at all that is when VAF is greater than 0.8 or 80% there is full mediation, value  $0.2 \leq VAF \leq 0.8$  indicate partial mediation and value less than 0.2 means no mediation (Shrout & Bolger, 2002; Zhao, Lynch & Chen, JCR, 2010). With full mediation we mean a situation in mediation analysis that occur when the mediated effect is significant but not the direct effect (indirect only mediation). Partial mediation means a mediator variable partially explains the relationship between an exogenous and an endogenous construct. Partial mediation can be in the form of complementary and competitive mediation, depending on the relationship between the direct and indirect effects.

Recommended formula for testing mediation:  $VAF = \frac{(P_{12} \cdot P_{23})}{(P_{12} \cdot P_{23} + P_{13})}$

Where by  $P_1$  and  $P_2 =$  direct effect,  $P_3 =$  indirect effect)

Or  $Z^*(d) = \frac{\beta^*(d) - \alpha}{\mu^*(d)}$

in which  $Z^*(d)$  is the Z value for the  $d^{\text{th}}$  bootstrap sample,  $\beta$  is the original sample estimate of the mediator effect  $P_{12}, P_{23}$  and  $\beta^*(d), \mu^*(d)$  are the estimated value and standard error of  $P_{12}, P_{23}$  for the  $d^{\text{th}}$  bootstrap sample. The test for mediation uncovered the following results: There is significance direct effect of performance expectancy, effort expectancy and facilitating condition on behavioural intention to use the ICT tax system ( $\beta=0.279; P<0.05$ ), ( $\beta=0.242; P<0.05$ ) and ( $\beta=0.082; P<0.05$ ) respectively. There was significant direct effect of behavioural intention on tax compliance behaviour ( $\beta=0.573; P<0.05$ ). When controlling for mediator variable behavioural intention (shown in figure 2) the direct effect of UTAUT constructs on tax compliance reduced by  $\beta=0.329$  that is both constructs of UTAUT on tax compliance behaviour yield  $\beta=0.244$  while that of mediator on tax compliance behaviour is  $\beta=0.573$ . This indicates that behavioural intention to use the ICT tax system is partially mediated by behavioural intention to use the technology. The essence of testing the relationship without mediator variable is to see how much of the direct effect does indirect effect absorb to see if there is partial or full mediation.



**Figure 2:** Test for significance of direct relationship without mediator variable

### 3.1.5. Assessing the indirect effects

The indirect effects involve many associations with at least one mediator variable linking the associations (Hair *et al.*, 2016). The essence of evaluating the indirect effects is to identify which antecedent variable(s) has a strong influence on the outcome variable for decision making. The results of our study indicate that performance expectancy plays a great role on influencing compliance behaviour through the mediator variable (behavioural intention). That is, performance expectancy has the strongest indirect effect on tax compliance behaviour. On other way, the effect between performance expectancy and tax compliance behaviour is mediated by behavioural intention followed by effort expectancy on tax compliance behaviour (table 4). However insignificant indirect effect between facilitating condition and tax compliance behaviour through behavioural intention was identified followed by social influence on tax compliance behaviour.

**Table 4.** Mean, STDEV, T-Values, P-Values of Indicators

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
EE -> BI -> TCB	0.139	0.068	2.045	<b>0.041</b>
FC -> BI -> TCB	0.047	0.083	0.564	<b>0.573</b>
PE -> BI -> TCB	0.160	0.070	2.305	<b>0.022</b>
SI -> BI -> TCB	-0.096	0.097	0.989	<b>0.323</b>

### 3.1.6. Structural model evaluation (Test for constructs Measurement)

The structural model evaluation involved the measurement of one construct to another construct within the model. The following items were tested; analysis of mediation, Path coefficients, Coefficient of determination ( $R^2$ ), collinearity by applying the variance inflation factor (VIF) and evaluation of direct and indirect relationship. When interpreting the results of a path model, it was of paramount significance to test the significance of all structural model relationships using t values, p values, and the bootstrap confidence intervals. The bootstrap confidence interval allows testing whether a path coefficient is significantly different from zero. It provides information on the stability of the estimated coefficient by offering a range of conceivable population values for the parameter dependent on the variation in the data and the sample size.

### 3.1.6.1 Collinearity evaluation

Multicollinearity or simply collinearity also was tested, this occurs when two variables are highly associated. Collinearity of indicators were assessed using indicator's Variance Inflation factor (VIF) and the value should be lower than 5. In PLS-SEM perspective, a tolerance value of 0.20 or lower and a VIF value of 5 and higher consistently show a potential collinearity problem (Hair *et al.*, 2011). More precisely, an indicator's VIF level of 5 indicates that 80% of its variance is accounted for by the remaining indicators associated with the same construct. Collinearity valuation of our model shows that all the construct values of predictor variables are below 3.0 (as indicated in table 4).

**Table 5.** Collineriaty validation

	BI	EE	FC	PE	SI	TCB	TEC
BI						1.239	
EE	1.929						
FC	3.580					1.363	
PE	2.153						
SI	2.686						
TCB							
TEC	1.813			1.000		1.425	

### 3.1.6.2 Coefficient of determination (R<sup>2</sup>)

R<sup>2</sup> measures the model's predictive power and is computed as the squared correlation among the specific endogenous construct's actual and predicted values (Rigdon, 2012; Sarstedt, Ringle, Henseler, & Hair, 2014). The coefficient represents the exogenous latent variables' combined effects on the endogenous latent variable. That is, the coefficient represents the amount of variance in the endogenous constructs explained by all of the exogenous constructs linked to it. PLS-SEM aims at maximizing the R<sup>2</sup> values in the effect of latent variable(s) in the path model. The exact analysis of the R<sup>2</sup> value depends on the certain model and research discipline; generally R<sup>2</sup> values of 0.75, 0.50, or 0.25 for the outcome construct can be described as respectively substantial, moderate, and weak. In the case of our model exogenous constructs explain about 31.2% to endogenous constructs which is moderate as suggested in a critical value (figure 1).

### **3.2. Discussions of the Findings**

The purpose of this paper was to study the influence of behavioural intention to use the ICT tax system on tax compliance behaviour, and, more specifically survey the efficacy of mediating factors on behavioural intention to use technology and identifying the indirect effects. The analyses of statistical results show that performance expectancy (PE), effort expectancy (EE) and facilitating condition influence behavioural intention (BI) to use the ICT tax system. The results are consistent with the findings from the previous studies e.g. Bhuasiri *et al.*, 2016; Carter, & McBride, 2010; Shafi & Weerakkody, 2009). The findings support the generalizability of results to other backgrounds and context for this reason; we accept the alternative hypotheses H<sub>1a</sub>, H<sub>2b</sub> and H<sub>4a</sub>. Users' behaviour on the use of ICT depends on how well the technology is simple to be used, can increase productivity and performance and has the required facilities (Sumak, Polancic, & Hericko, 2010; Viswanath Venkatesh & Brown, 2001). By contrast, social influence (SI) on behavioural intention (BI) did not support the proposition (H<sub>3a</sub>). As such, the results of SI on BI to use the ICT tax system were not statistically significant. Mandari *et al.* (2017), Gu, Lee, & Suh, (2009) had similar results of SI on BI. Thus; the influence of other groups like co-users and important groups is insignificant on the behavioural intention to use the ICT tax system (Mandari *et al.*, 2017).

The results further indicated that PE has a strongest statistical significance influence on intention to use ICT ( $\beta=0.279$ ) followed by effort expectancy (EE) ( $\beta=0.242$ ) and facilitating condition (FC) ( $\beta=0.082$ ). Similar results were achieved on the indirect effects which indicated that, performance expectancy has the strongest significant indirect effect on tax compliance behavioural through behavioural intention followed by effort expectancy. This situation is what referred to complementary mediation (both direct and indirect effects are significant and are in the same path). The result that stands out here advocates that the use of technical know-how depends on how well the technology can perform, brings about changes and increase productivity (Yuen, Yeow, Lim, & Saylani, 2010). That means, in designing or introducing the technology, authorities, governments, private and public organisations need to emphasize on the performance of the technology and how well the technology is understood and easy to be used by the users. The findings confirm empirical studies which concluded that PE is the strongest antecedent of behaviour intention (Anderson, Schwager, & Kerns, 2006; Bandyopadhyay & Katherine, 2007)

The effect of behavioural intention to use the ICT tax system on tax compliance behaviour also became evident in this study ( $\beta=0.573$ ). Result that stands out here suggests that in order to determine whether users of the ICT tax system accept and use the technology, their intention should be converted to actual use, that is, tax compliance behaviour (Delone & McLean, 2003). The transforming of BI into tax compliance behaviour (actual use) involves the measuring the correlation between behavioural intention and tax compliance behaviour. Previous studies argued that BI has a positive relationship on tax compliance behaviour (Venkatesh & Davis, 2000). The present study support previous studies by indicating that BI has a positive relationship with tax compliance behaviour ( $\beta=0.573$ ). Regarding the efficacy of mediating factors, the findings indicate that the influence of the ICT tax systems on tax compliance behaviour is partially mediated by behavioural intention (BI) (24.4%) which describes the source and nature of relationship.

### **3.3. Conclusion and Recommendation**

The purpose of this paper was to study the influence of behavioural intention to use the ICT tax system on tax compliance behaviour, contributes to the debate and literature on e-tax system and tax compliance behaviour and, more specifically provides useful insights on the efficacy of mediating factors on social intention to use technology and determine the indirect effects. The study objectives were explored through questionnaire in which 109 students from higher learning institutions were involved in the survey. Data were analyzed using Partial Least Square Structural equation modeling (PLS-SEM) which consists of two stages: the measurement model and the structural model. Results show that the influence of ICT tax systems, more specifically e-tax system, on tax compliance is partially mediated by behavioural intention to use the technology. The results further indicate that performance expectancy and effort expectancy have significant indirect effects on tax compliance behaviour through the behavioural intention. The findings suggest that tax compliance behaviour is directly and indirectly influenced by intention to use the ICT tax system. Based on this conclusion, we advance a need for government to invest more on awareness creation campaigns regarding usefulness of the ICT tax systems to both, current taxpayers, students as future taxpayers and the government. We also advise the government to focus more on performance, simplest and productivity when designing the system.

The findings of this study call for a need for the government to emphasize and prepare a complying behaviour and environment for future taxpayers by training and educating students especially those



in higher learning institutions. It is important that they are trained on the importance of using technology on tax payment, as this may in the future minimize the extent of non-compliance behaviour. Admittedly, frustrating experience encountered while introducing electronic fiscal devices (exemplar the Electronic Fiscal Device) and many other tax reforms in Tanzania could be leveraged in presence of this kind of awareness. Our study appreciates and underlines the importance and influence of e-tax system on tax compliance behaviour. Currently, it is large taxpayers only who are fully fledged with e-tax system for compliance purpose. This calls for reviewing our tax regime and policies to extend the application of e-tax system and its practices beyond large tax payers.

This study is not without limitations. Although inherent limitations of a survey apply to this study, two specific limitations need to be articulated. The first limitation concerns the possibility to generalize the study findings outside Tanzania following concentration of the study in Tanzania as the study area, and using a limited unit of analysis. We suggest future studies to take a comparative approach (in which, a number of countries will be studied on a comparative basis) and extended units of analyses to improve the results.

A second limitation is the nature of our study. We used self-administered questionnaire that do not allow intervention. Approach that allows minimum intervention would have helped us in gaining more insights especially on the responses with regard to factors responsible for non-compliance. Further to this, the study was quantitative in nature which is deficient in exploring research problem in an in-depth manner. We propose future studies to consider combining both, quantitative and qualitative techniques in a single study to complement the weaknesses of the quantitative approach.

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