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Full Length Research Paper

Effect of executive compensation and share ownership on financial performance of listed deposit money banks in Nigeria

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It has remained a paradox whether people will be motivated if they believe that strong effort will lead to good performance and good performance will lead to desired rewards. Studies in this area have reported conflicting findings. To this end, the study examines the effect of executive compensation and share ownership on financial performance of listed Deposit Money Banks in Nigeria. Executive compensation variables were proxied with Chief Executive Officer (CEO) Pay, Chairman's compensation and highest paid director, while percentage of shares owned by executive represent the share ownership. Financial performance was measured using net interest margin. Robust Ordinary Least Square regression technique was used for the estimation, while Stata 13 was employed as tool of data analysis. Secondary source of data was utilized and were obtained from the annual reports and accounts of the banks over the period 2007-2018. Robustness tests such as normality test of error term, multicollinearity and heteroscedasticity tests were conducted to validate the results. The findings reveal that, CEO Pay has significant positive effect on financial performance of banks, while chairmen compensation and highest paid director have negative influence on financial performance of banks. Furthermore, the increase in share ownership of the executives in the banking sector is an effective means through which the financial performance of the banks could be enhanced. It is therefore recommended that the management should tie the payment of CEO of the banks to performance. The regulators such as Central Bank of Nigeria and Securities and Exchange Commission) should encourage the banks management to be mindful when increasing the level of compensation paid to chairmen and highest paid directors without commensurate share ownership in the banks by them as they may become complacent towards encouraging increased financial performance.

Key words: Net interest margin, executive compensation, share ownership and pay-performance theory.

INTRODUCTION

Executive compensation is composed of the financial and non-financial compensation or rewards received by an executive from their firm for services rendered to the organization (Farouk et al., 2015). Executive

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compensation differs substantially from typical pay packages for either hourly workers or salaried management and professionals in that executive pay is heavily biased toward rewards for actual results. Hence if a company underperforms, the executives typically receive a smaller fraction of their potential pay. Executives who are improperly compensated may not have the incentive to perform in the best interest of shareholders, which can be costly for those shareholders. Series of empirical studies have been conducted to assess executive compensation importance on organizational financial performance.

However, there is still lack of agreement on the main characteristic of executive compensation and performance concepts as to what it really represent (Bebchuk et al., 2002). This may be due to the vagueness and intangibility of the terms (Ferri and Meber, 2009), its ambiguity (Eriksson, 2005) or simply to the fact that, compared to other reward systems, executive compensation appeared as a legitimate area of inquiry in the main stream management literature in most recent time in Africa (Denis et al., 2006).

The question on executive compensation and how much to be paid is increasingly becoming a target by media, shareholders, policy makers and government regulators which saw the Central Bank of Nigeria (CBN) in its prudential guidelines for deposit money banks requiring all compensations and bonuses paid and payable to executive directors of all banks including profit sharing arrangements and share options to be fully disclosed in the annual audited financial statements. It has been questioned why executives continue to receive bonuses and other benefits despite the fact that their companies are making losses and decreasing shareholder value (Aduda, 2011).

In the recent years there has been a debate about the level of compensation and the bonuses given to CEOs triggering their rationality and justifications. One may ask, are these CEOs being paid for their performance or is it just a trend everyone is following? In the past we have seen that the CEOs' pay has been increased without being justified by their performances (Ferri and Maber, 2009). They further asserted that countries like Britain have developed new legislations like "say on pay" to control the pays of the chief executive officer and influence it through the voice of the shareholders.

However, the debate of CEOs being paid exorbitant sums is not a new one. Investors expect the CEO who is being paid high to perform and prove his worth. According to Deysel and Kruger (2015), the average CEO compensation is about 209 times that of a typical U.S factory worker. Although in other countries like Germany and Japan, it is not that high (25 and 20 times respectively), but still great disparity exists between the two classes. Conventionally the executive compensation had been linked to performance and it was deemed that the high pay for a CEO (for his/her expertise) was

justified. But there has been an exponential increase in all the pay levels of CEOs irrespective of their performances (Deysel and Kruger, 2015).

It is also believed that when executives own large shares in the organization in which they manage, their interest may become aligned with that of other shareholders and as such act in the best interest by ensuring higher financial performance. Higher percentage of shares held by executive directors is expected to translate into higher return for them. With this in mind, the executive will pursue increased financial performance in order for their investment through share ownership to attract higher return.

The decision to focus on the deposit money banks (DMBs) stems from the point that the banking is one of the vibrant sectors that drive the economy of Nigeria. There is a need for adequate focus on such sector. Also, the justification for choosing DMBs is premised on the fact that, it is still an area with paucity of studies on this topic also particularly in terms of investigating the banks based on high and low levered categories.

The listed deposit money banks in Nigeria cannot be exonerated from the bogus executive's compensation as witness in other parts of the world. Omoregie and Kelikume (2017) argued that there is an increasing interest towards the relationship between executive compensation and bank performance in Nigeria in recent years following the profligate lifestyle of some bank executives. This has raised the question of whether the banking sector performance justifies bank executives' compensation. Hence, the need for this study to examine the effect of executive compensation and share ownership on financial performance of listed deposit money banks in Nigeria. The findings from this study contributed to both practice and theory. The study importance emerged from the fact that the banking sector plays a significant role in enhancing the country economy, and providing critical services for people in Nigeria. As such, the continuous existence and financial strength is very paramount, hence the need for the study in examining factors that enhances the banks financial performance. The remaining part of the paper covers empirical literature review and review of theory underpinning the research. Methodology adopted was also discussed followed by the results and discussion of the findings. The paper ends with conclusion and recommendations from the findings.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Yamina and Mohamed (2017) examine the impact of firms' performance on executive compensation in France with a sample of 90 companies included in the SBF 120 over 2004 and found that the level of total executive compensation that is linked with relatively improved

performance. Yuan et al. (2017) examine the relationship between financial characteristics; corporate governance; executive compensation; say on pay votes and found that there is a stronger association between high CEO pay and low say-on-pay vote support for firms with negative financial performance. It was documented that poor performance in an organization is associated with increase in the sensitivity of CEO pay. Adegoroye et al. (2017)'s findings from majority of the studies show that the executive compensation has a significant effect on firms' performance. Qiao and Wang (2016) examine the effect of executive compensation of State-owned listed companies on corporate financial performance of 80 companies in Shanghai and Shenzhen between 2013 and 2015 and it was found that a relationship exists between executive compensation and financial performance.

Lindström and Svensson (2016) examine if there is a relationship between the top management variable compensation and firms' performance in Swedish context and it was found that incentive systems of the top management have no significant effect on firms' performance. Rampling (2015) investigates the relationship between executive director and CEOs' remuneration and corporate performance of USA, UK and Australia firms ending 2001 – 2012 of 305 public listed companies. The results revealed that there are significant relationships between corporate financial performance and CEO remuneration. Kutum (2015) reveals no significant relationship could be established between CEO remuneration and bank performance except a weak positive relationship with ROA. Buachoom (2015)'s study shows that compensation of executives in Thai firms corresponds to firms' performance, and compensation of executives leads to an improvement in subsequent performance of Thai listed firms.

Hong et al. (2015) findings provide evidence identifying corporate governance as a determinant of managerial incentives for social performance. Demirer and Yuan (2013) examine effect of executive compensation on firms' performance in the U.S. restaurant industry. Their results also reveal that compensation in the form of salary affects restaurant firms' performance negatively. Berthelot et al. (2013) results show that although the tenure of independent directors has a positive impact on senior executives' compensation, it has no significant impact on corporate financial performance. Manders (2012) research shows that firms' performance is positively related to the percentage of compensation of CEOs that is equity-based. It also found a much stronger relationship between equity-based compensation and companies' performance than total compensation and companies' performance.

Oyerogba et al. (2016) results revealed that a significant positive relationship exists between the directors' cash incentives, bonus issue of share and earnings per share. The relationship between non cash incentive and earnings

per share was insignificant implying that non-cash incentive does not significantly influence earnings per share of companies in Nigeria. Ruparella and Njuguna (2016) find a significant relationship between board remuneration and DY, but not ROA, ROE, and EPS. Ogbeide and Akanji (2016) find that executive remuneration has negative but insignificant effect on firms' performance. Sheikh and Khursheed (2016) investigate whether compensation (that is, salary, bonus and allowances) offered to chief executive officers and an executive affects the performance of Takaful (Islamic insurance) companies in Pakistan. Their results indicate that compensation offered to CEOs and executives is statistically significant and negatively related to all performance measures. Kyalo (2015) established that a unit increase in executive compensation has a commensurate decline in ROA for the firms to the extent of 0.027. Based on the aforementioned reviews, the study therefore hypothesized that:

Ho₁: CEO Pay has no significant effect on the financial performance of listed deposit money banks in Nigeria;

Ho₂: Chairman compensation has no significant effect on the financial performance of listed deposit money banks in Nigeria;

Ho₃: Highest paid director has no significant effect on the financial performance of listed deposit money banks in Nigeria.

Ho₄: Executive share ownership has no significant effect on the financial performance of listed deposit money banks in Nigeria.

Theoretical framework

The rationale behind pay-for-performance theory is that connecting pay to performance can inspire people to accomplish or manage more noteworthy performance levels (Heneman and Werner, 2005). Along these lines, various types of pay-for-performance plans have been advanced (Park, 2008). The parts of CEO pay are significantly heterogeneous in pay practice over firms and industries. Most executive pay bundles contain four fundamental segments: a base salary, a yearly bonus connected to accounting performance, stock choices, and long-term motivator plans. Additionally, executives take an interest in employee advantage plans furthermore get exceptional advantages, for example, life insurance and supplemental executive retirement plans (Murphy, 1986).

The discussion over CEO remuneration mirrors an observation that CEOs viably set their own pay levels. In many organizations, the last choices over executive pay are made by individuals outside the board of directors who are definitely mindful of the irreconcilable circumstances in the middle of managers and shareholders over the level of pay. Be that as it may, the CEOs and other top managers apply in any event some

Table 1. List of variables and their measurements.

S/N	Variable	Status	Measurement	Justification
1	NIM	Dependent	Net Interest Income minus net interest paid divided by net interest income	Olalekan and Bodunde (2015)
2	CEO's Pay	Independent	The pay of the CEO	Kruger and Deysel (2015).
3	Chairman's Compensation	Independent	The compensation of the Chairman	Ozkan (2011).
4	Highest Paid Director	Independent	Pay of the Highest Paid Director	Krauter and Sousa (2013)
5	Executive Share Ownership	Moderator	Number of shares held by executive directors divided by total shares in issue.	Yan-Jun and Yan-Xin (2017)
6	Firm Size	Control	Customers' Deposit	Olalekan and Bodunde (2015).

Table 2. Descriptive statistics.

Variables	Min	Max	Mean	Std. Dev.	Sktest	Swilk
NIM	28.19	85.00	60.56	11.38	0.0537	0.02501
CEOP	15.63	22.14	19.35	0.960	0.0023	0.00555
CCOM	13.01	18.09	16.36	1.025	0.0225	0.00021
HPDI	13.99	19.68	17.87	0.818	0.0000	0.00022
ESOW	0.0001	0.347	0.069	0.078	0.0000	0.00000
FSZ	18.35	22.13	20.42	0.86	0.0924	0.12134

Source: Descriptive Statistic Results Using STATA 13.

impact on the level and on the structure of their pay (Jensen and Murphy, 1990). Moriarty (2009) demonstrated that CEOs are, actually, not paid like civil servants, but rather that there is a solid relationship between firms' performance and CEO compensation. It is additionally enticing to recommend that these issues can be explained by better compensation conspires or enhanced strategies to connection CEO pay to stock performance (Nulla, 2015).

METHODOLOGY

The study adopted the Ex-post facto research design. The design for the study is considered appropriate, in that, it is better in determining the effect of executive compensation on financial performance in our study which permitted prediction. The population of the study was the fourteen listed deposit money banks in Nigeria listed on the Nigeria Stock Exchange (NSE) as at December 31st, 2018. Census approach was adopted by using the entire population to achieve a desirable of precision. This study utilizes secondary data source and data were obtained basically from the published annual reports and accounts of the listed Deposit Money Banks in Nigeria. The robust ordinary least square regression was used. To validate the results from the regression, robustness tests which include multicollinearity test, normality test, heteroscedasticity test and normality test of the standard error were estimated.

Model specification

The following models have been developed following the literatures

reviewed in respect of the variables. First the model showing direct relationship between the independent variable and dependent variable is presented and followed by the models where the independent variables were moderated with share ownership as against financial performance.

$$NIM_{it} = \beta_0 + \beta_1 CEOP_{it} + \beta_2 CCOM_{it} + \beta_3 HPDI_{it} + \beta_4 TCOM_{it} + \beta_5 ESOW_{it} + \beta_6 FSZ_{it} + \epsilon_{it}$$

Where:

NIM= Net Interest Margin (Financial Performance), TQ= Tobin's Q (Financial Performance), CEOP= CEO Pay, CCOM= Chairman's Compensation, HPDI= Highest Paid Director, TCOM= Total Compensation, ESOW= Executive Share Ownership, FSZ= Firm Size, ϵ = Error term, i and t = banks i and year t.

RESULTS AND DISCUSSION

Descriptive statistics

Hejase and Hejase (2013) posit that "Descriptive Statistics deals with describing a collection of data by condensing the amounts of data into simple representative numerical quantities or plot" (p. 272) (Table 1). The descriptive statistics obtained in this research are presented in Table 2 showing the minimum, maximum, mean, Standard deviation, Skewness, Kurtosis and Shapiro wilk of the variables of the study. Data used in this research which were mostly in Naira were converted. For the purpose of analysis, the raw data (Naira) were used.

Table 2 shows the minimum value for financial

Table 3. Correlation matrix.

Variables	NIM	CEOP	CCOM	HPDI	ESOW	FS
NIM	1.0000					
CEOP	0.1684*	1.0000				
CCOM	-0.1742*	0.0501	1.0000			
HPDI	-0.2232*	0.1881*	0.0602	1.0000		
ESOW	0.2217*	-0.0137	-0.1112	-0.0468	1.0000	
FS	0.1185	0.3692*	-0.1320	0.5356*	0.1302	1.0000

* 5% level of significance.

performance proxied with net interest margin (NIM) which is 28.19 implying that the least value for financial performance was 0.2819 within the banks and period. When compared with the highest level of financial performance, it depicts that NIM was at its highest to the tune of 0.85. The mean value further substantiates the fact that financial performance measured using net interest margin was high within the study period. CEO pay recorded a minimum value of 15.63 and maximum value of 22.14, implying that within the banking sector and the study period, there were banks that pay their Chief executive officer below a million naira indicating the least pay. While the highest pay for CEOs was about 4 million naira within the study period.

Chairman's compensation had a minimum value of ₦1,500,000 and a maximum value of ₦6, 600,000 implying that the lowest amount paid by banks to their chairman on board of directors was at one million five hundred thousand naira; the highest amount paid to the chairman of the board within the study period stood at about six million naira. Highest Paid Director had a minimum value of ₦1,700,000 and a maximum value of ₦6,850,000 implying that there was a board of directors whose least pay amongst the highest paid director stood at one million, seven hundred thousand Naira, while, the highest amount recorded for highest paid director amongst the board members was about six million naira.

Executive share ownership recoded a minimum value of much less than 1% and a maximum value of 34.7 for all the banks within the study period. The mean value of about 6.9 implies that, on the average, most of the banks directors occupy at least 7% of the entire shares held in the banks within the study period. The p-value from the Jacque Bera test for normality indicates that only highest paid director and executive ownership variable are normally distributed. This does not in any way affect the inferences to be made from the result.

Correlation analysis

Table 3 shows the Pearson's correlation values between the dependent and the independent variables. It also shows the relationship amongst the independent

variables. Table 3 shows that financial performance represented with NIM is positively correlated with Chief Executive Officer Pay to the tune of about 17%. This implies that financial performance has direct correlation with CEO Pay. Chairman's compensation is found to have negative relationship with financial performance to the tune of 17% which imply an indirect correlation between the two variables. Financial performance recorded a negative relationship with highest paid director variable at a magnitude of 22%. This shows a correlation between the two variables moves in opposite direction. Executive share ownership has a positive correlation with financial performance of banks in Nigeria thus implying a direct relationship at a magnitude of 22%. Firm size has positive correlation with financial performance at a magnitude of about 11% implying direct relationship between firm size and financial performance.

Generally, the relationships among the independent variables of the study were found to be mostly insignificant as expected. Therefore, on the overall, according to Cassey and Anderson (1999), to establish the presence of multicollinearity, the Variance Inflation Factor (VIF) and tolerance values were estimated (Appendices figures), and thus indicate absence of multicollinearity. To further substantiate this position, the mean VIF of 1.29 was used and it indicates that multicollinearity is not a problem. The allowable VIF is that it must be consistently less than 10 in all situations to be adjudged free from multicollinearity problem. VIF results are similar to what Chehimi et al. (2019) obtained in their research, values of VIF (as shown in this paper's Appendix) show that these do not exceed 2 indicating no multicollinearity presence. Therefore, "there is no correlation or bidirectional relationship among the predictor variables, and all the predictor or explanatory variables are suitable to form a causal relationship using regression" (p.1911).

Presentation and interpretation of regression results

This section presents the regression results of the parsimonious models of the study. This is followed by its interpretation, analysis, discussion and test of

Table 4. Summary of Regression Result (Robust OLS) Model I.

Variables	Coefficient	Z-Statistics	Prob. Value	Cumulative results
Constant	74.4	7.09	0.000	
CEOP	9.28	2.40	0.018	
CCOM	-7.26	-1.50	0.137	
HPDI	-1.75	-3.70	0.000	
ESOW	.011	2.59	0.010	
FSZ	3.09	2.31	0.022	
R ²				0.1882
F-Statistics				5.53
F-Sig				0.0001

Source: Result output from STATA 13.

hypotheses. The cumulative R² of 0.1882 for the study model, which is the coefficient of determination, gave the proportion of the total variation in the dependent variable as explained by the independent variable jointly (Table 4). Hence, it is signified that 18.82% of the total variation in financial performance of listed Deposit Money Banks in Nigeria is accounted for by the variation in CEO pay, Chairman Compensation, highest paid director, executive ownership and the total assets of the banks.

The Fisher Exact Statistics value of 5.53, for the model which is significant at one percent, indicates that executive compensation, share ownership and financial performance model is fit. It implies that for any change in executive compensation and share ownership of the listed Deposit Money Banks in Nigeria, their financial performance will be affected directly. The P-value of Fisher exact test which is statistically significant at a level of 0.0000 for the model implies that there is 99.9 percent probability that the relationship among the variables were not due to mere chance. As such, the results from the regression can be relied upon. In addition, it implies that the independent variables reliably predict the dependent variable of the study.

CEO pay and financial performance

From Table 4, it was observed that the t-value for Chief Executive Officer Pay (CEOP) was 2.40, while the coefficient value was 9.28 with a significant value of 0.018. This signifies that CEO pay has a statistically significant and positive effect on financial performance of listed deposit money banks in Nigeria. This implies that for every increase in the amount of pay to CEO on banks, their financial performance will increase by the coefficient value. This may be because compensation policy is one of the most important factors in an organization's success which may likely shape the behaviour of the Chief Executive Officers and also helps attract good and competent CEOs. This invariably may lead to higher performance. Based on the findings on the variable, the null hypothesis is hereby rejected.

Chairman's compensation and financial performance

The regression results revealed that Chairman compensation, as shown in Table 4, have a t-value of -1.50 and a coefficient value of -7.26 which is not statistically significant at 5% level. This indicates that chairman's compensation has a negative but insignificant effect on financial performance of banks. This implies that for every increase in the amount of chairman's compensation of listed deposit money banks in Nigeria, the financial performance of banks decreases insignificantly by the coefficient value. This may be as a result of the fact that most pay to chairman are done based on increase in bank size. It is most likely that such pays increase is pegged to bank size and therefore, this translates into reduced performance. Based on the findings in respect of the variable, the null hypothesis two failed to be rejected.

Highest paid director and financial performance

The highest paid director variable has a t-value of -3.70 and a coefficient value of -1.75 which is significant at 1% level. This shows that highest paid director has statistically significant and negative effect on financial performance of banks. This connotes that an increase in the amount received by highest paid director on the board; will decrease the level of financial performance of listed deposit money banks significantly. This may happen if the highest paid director does not contribute to the financial wellbeing of the bank to justify its pay. Ideally, the pay is expected to serve as motivation to do more in terms of efficiency and effectiveness in service delivery. Judging from the findings on the variable, the hypothesis is rejected based on the evidence of impact of the highest paid director on financial performance.

Executive ownership and financial performance

Executive ownership recorded a t-value of 2.59 and a

beta value of .011 which is significant at 1%. This indicates that the executive ownership of banks is statistically significant and positively influences their financial performance. This implies that when the amount of shares held by the board of directors' increases, the financial performance of banks increases significantly. This may be attributed to the fact that when the amount of shares held by managers is increased, their interest may become more aligned with that of other minority shareholders and thereby protect the interest of other shareholders by engaging in activities that will bring about higher return to his investment thereby benefitting other minority share owners. This is expected to affect the financial performance of banks positively. This finding is in line with the studies of Oyerogba, Riro and Memba (2016). However, it is in contrast to those of Abubakar et al. (2018) and Adegroye et al. (2017).

Bank size and financial performance

The size of the bank measured by their total assets recorded a t-value of 2.31, while the coefficient, in respect of bank size, is 3.09. This is significant at 5% level. It signifies that bank size has statistically significant and positive effect on financial performance of banks. This implies that for every increase in the size of the bank, the financial performance of listed deposit money banks will increase by the coefficient value significantly. This may be as a result of the fact that the level of activity of a bank is important in enhancing its effectiveness in improving performance and, hence, provide the much needed room to accommodate the various executive pays.

Robustness tests

This section presents the results from the robustness tests conducted. The robustness tests include: heteroscedasticity test, multicollinearity test and normality test of error term.

Heteroscedasticity test

Results obtained from the heteroscedasticity tests conducted for the regression indicates heteroskedasticity was not present among the panel of the study. This makes the interpretation of Robust Ordinary Least Square (OLS) because of the non-violation of one the essential assumptions of OLS. According to Chehimi et al. (2019), "If sig-value is less than 0.05, reject the null hypothesis. In this case Breusch-Pagan $P=0.87$ (Sig $P > \alpha = 5\%$), therefore accepting the Null hypothesis and heteroscedasticity is not present. Therefore, the variance of the errors from the regression is not dependent on the values of the independent variables" (p. 1914).

Normality of the error term (Kernel density)

Normality of the error term was conducted using the kernel density estimate and was found to be tolerably mild and neither skewed to the left or right. It also shows Peakedness of the distribution and the diagram lie almost at the centre of the distribution (See Appendix).

Multicollinearity test

The Variance Inflation Factor (VIF) and the Tolerance test estimated were found to be consistently smaller than ten and one respectively for all the variables (Appendices figures) indicating that multicollinearity was not a problem (Tabachnick and Fidell, 1996).

CONCLUSION AND RECOMMENDATIONS

From the presentation of results, interpretation, analysis and discussions, the study reached the following conclusions that:

- (i) High payment to chief executive officers of banks is associated with increased financial performance.
- (ii) High compensation to chairmen of the banks' board is a not guarantee for increased financial performance as it allows the chairman to become complacent over its oversight functions to attract higher performance to the bank.
- (iii) Highest paid director compensation increase is associated with less financial performance of listed deposit money banks in Nigeria. Most of the directors who received highest pay are foreign directors; their inability to influence financial performance positively could be their low interest in the banks in terms of share ownership.
- (iv) Increase in share ownership of the executives in the banking sector is an effective means through which the financial performance of the banks could be enhanced. This is because the executive high ownership interest in the banks makes them become aligned with that of the minority shareholders thereby protecting interest of the bank by pursuing higher return via increased financial performance.

Following this conclusions, the following recommendations are made in order to enhance financial performance of listed Deposit Money Banks in Nigeria.

- (i) On the payment of CEO of the banks, the management should tie their pay to performance. This is expected to increases the level of performance by CEO since their pay is tied to performance.
- (ii) The regulators such as Central Bank of Nigeria and Securities and Exchange Commission) should encourage the banks management to be mindful when increasing

the level of compensation paid to Chairmen as this may make them become complacent towards encouraging increased financial performance.

(iii) On highest paid directors, the management should decrease the amount paid to them as compensation and increase their ownership stake as this is expected to enhance the financial performance. The banks should give a condition of increased performance as a basis to get higher pay in order to encourage the directors to do more in attracting their performance.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Appendices figures

```
. xtset id year, yearly
      panel variable:  id (strongly balanced)
      time variable:  year, 2007 to 2018
      delta: 1 year
```

```
. xtsum nim ceop ccom hpdi esow fsz
```

Variable		Mean	Std. Dev.	Min	Max	Observations
nim	overall	60.56846	11.38745	28.19312	85.00183	N = 168
	between		7.035094	48.53602	71.48807	n = 14
	within		9.134633	31.29422	85.45638	T = 12
ceop	overall	19.35485	.9605896	15.63699	22.14953	N = 168
	between		.613914	18.61526	20.35548	n = 14
	within		.7554251	16.37658	22.09597	T = 12
ccom	overall	16.36031	1.025568	13.01478	18.0947	N = 168
	between		.6814414	15.20312	17.51174	n = 14
	within		.7861383	13.58417	18.70886	T = 12
hpdi	overall	17.8735	.8180742	13.99783	19.68198	N = 168
	between		.493065	17.08102	18.69663	n = 14
	within		.6649403	14.79031	20.01884	T = 12
esow	overall	.0693662	.0786224	.0001705	.3471054	N = 168
	between		.0514351	.0103294	.1546125	n = 14
	within		.0609112	-.0655332	.303697	T = 12
fsz	overall	20.42855	.861107	18.35943	22.13569	N = 168
	between		.6678305	19.10124	21.45408	n = 14
	within		.5699866	17.99635	22.3278	T = 12

```
. sktest nim ceop ccom hpdi esow fsz
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
nim	168	0.0030	0.0460	11.08	0.0039
ceop	168	0.0000	0.0003	28.16	0.0000
ccom	168	0.0000	0.0000	61.08	0.0000
hpdi	168	0.0698	0.8314	3.38	0.1844
esow	168	0.6579	0.0722	3.48	0.1757
fsz	168	0.3146	0.0237	5.94	0.0514

. pwcorr nim ceop ccom hpdi esow fsz, star (0.05) sig

	nim	ceop	ccom	hpdi	esow	fsz
nim	1.0000					
ceop	0.1684*	1.0000				
	0.0291					
ccom	-0.1742*	0.0501	1.0000			
	0.0239	0.5187				
hpdi	-0.2232*	0.1881*	0.0602	1.0000		
	0.0036	0.0146	0.4385			
esow	0.2217*	-0.0137	-0.1112	-0.0468	1.0000	
	0.0039	0.8604	0.1513	0.5466		
fsz	0.1185	0.3692*	-0.1320	0.5356*	0.1302	1.0000
	0.1259	0.0000	0.0880	0.0000	0.0925	

. reg nim ceop ccom hpdi esow fsz

Source	SS	df	MS	Number of obs =	168
Model	1292.2004	5	258.44008	F(5, 162) =	7.51
Residual	5573.79541	162	34.4061445	Prob > F =	0.0000
				R-squared =	0.1882
				Adj R-squared =	0.1631
Total	6865.99581	167	41.1137474	Root MSE =	5.8657

nim	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ceop	9.289974	4.308031	2.16	0.033	.7828359	17.79711
ccom	-7.265678	4.597121	-1.58	0.116	-16.34369	1.812328
hpdi	-1.755268	.4278926	-4.10	0.000	-2.600235	-.9103021
esow	.0117897	.0050984	2.31	0.022	.0017219	.0218576
fsz	3.091945	1.368776	2.26	0.025	.389001	5.79489
_cons	74.44094	10.11161	7.36	0.000	54.47338	94.40849

. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of nim

chi2(1) = 0.87

Prob > chi2 = 0.3508

. vif

Variable	VIF	1/VIF
fsz	1.70	0.588421
hpdi	1.46	0.683674
ceop	1.18	0.849724
ccom	1.06	0.942381
esow	1.05	0.954849
Mean VIF	1.29	

. reg nim ceop ccom hpdi esow fsz, robust

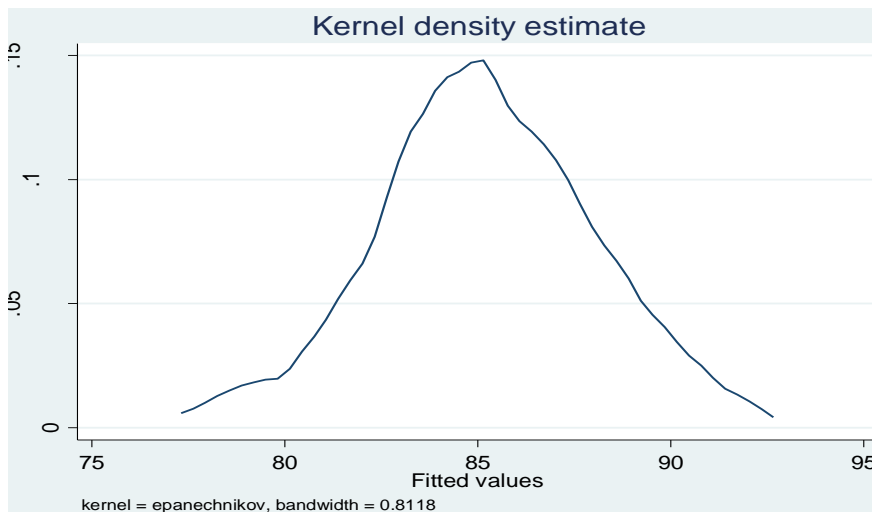
Linear regression

Number of obs = 168
 F(5, 162) = 5.53
 Prob > F = 0.0001
 R-squared = 0.1882
 Root MSE = 5.8657

nim	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
ceop	9.289974	3.876055	2.40	0.018	1.635866	16.94408
ccom	-7.265678	4.859526	-1.50	0.137	-16.86186	2.330505
hpdi	-1.755268	.4738239	-3.70	0.000	-2.690936	-.8196007
esow	.0117897	.0045536	2.59	0.010	.0027977	.0207818
fsz	3.091945	1.340141	2.31	0.022	.4455476	5.738343
_cons	74.44094	10.4944	7.09	0.000	53.71747	95.1644

. predict e
 (option xb assumed; fitted values)

. kdensity e



Full Length Research Paper

The impact of value-added tax (VAT) implementation on Saudi banks

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The study aims to identify the impact of value-added tax (VAT) on Saudi banks, through measuring the impact of changes in the banks before and after the implementation of Value Added Tax (VAT), in all of total assets, total liabilities, customer deposits, retained earnings, total operating income, total operating expenses and net operating income. The study targeted the fourth quarter of 2017 (before the implementation of VAT), and the first and second quarters of 2018 (after the implementation of VAT). The study found that there is a slight decline in total assets, total liabilities, customer deposits and current accounts, in addition to a significant decline in retained earnings, total operating expenses after the implementation of VAT. On the other hand, the study found that there is a slight increase in the total income of operations and a significant increase in net operating income after the implementation of value-added tax. Moreover, the study found that there are no statistically significant differences between total assets, total liabilities, customer deposits, current accounts, total operating income, total operating expenses, net operating income before and after the implementation of value-added tax; while there are statistically significant differences between retained profits before and after VAT.

Key words: Commercial banks, value-added tax (VAT).

INTRODUCTION

VAT is an indirect tax that first appeared in 1954 in France. Maurice Loretta is the one who proposed its concept and puts its main rules. It is a composite tax implemented on the difference between the cost and selling price of goods or services (Osaimy, 2018).

Value added tax was initially introduced to meet the increasing needs for revenues that could not be easily achieved by business taxes. There are many differences in the structure of VAT and the way of its implementation, but there is an international agreement on some of the main issues, such as making consumption the final base of this tax. In addition, it is characterized by a desirable

feature which is the tax does exceed the productive potential limits of economy. The 1990s saw a high rate of dependence on VAT; as it is nearly adopted by all countries of economic transformation (which reflects its need to change its traditional revenue resources), and a large number of developing countries (Awad, 2012).

The Kingdom of Saudi Arabia has adopted the unified value added tax agreement of the Gulf Cooperation Council (GCC) under the Royal Decree No. (M / 51) dated 3/5/1438 (the unified agreement on value added tax). Based on the provisions of the agreement, the Kingdom issued the Value Added Tax (VAT) system as

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well as the implementing regulations of the VAT system. VAT is considered as an indirect tax implemented on importing and supplying of goods and services at each stage of production and distribution, with some exceptions. VAT is implemented in more than 160 countries around the world. VAT can be defined as a consumption tax that is paid and collected at each stage of the supply chain, from the purchase of the raw material to the retailer's sale of the final product to the consumer, and other taxes¹.

The percentage of value added tax in the Kingdom of Saudi Arabia along with its partners (GCC countries) is 5%, which is the lowest percentage of value added tax in the world; whereas the rate of VAT in Australia is 10%, in Egypt is 13%, in Turkey is 18%, while in Germany it is 19%, in Morocco, UK, France is 20%, and Italy is 22%².

Therefore, the study focused on examining the following question: Has Value Added Tax (VAT) implementation affected total assets, total liabilities, customer deposits (current accounts), retained earnings, the total operating income, the total operating expenses, net operating income? The study aims to identify the impact of Value-added tax (VAT) On Saudi banks, through measuring the impact of changes in the banks before and after the implementation of Value Added Tax (VAT), in all of total assets, total liabilities, customer deposits, retained earnings, total operating income, total operating expenses, net operating income.

LITERATURE REVIEW

In general, taxes are considered as an important tool in achieving the objectives of countries. It is not only one of the main sources of finance, but also it is an effective means of enabling the state to intervene in economic and social life. Sales tax or value added tax represents great importance as a result of the accession of a large number of countries to the World Trade Organization agreement that raise or reduce tariff barriers. That led to the reduction of customs collections in most of the organizations and moving towards sales tax or value added tax to compensate for shortfalls of customs tax (Awad, 2012). The importance of the study is highlighted in the lack of studies about value added tax in the Kingdom of Saudi Arabia, as VAT was just implemented in 2018.

VAT is a major source of revenue in most countries. It is implemented in 51 countries around the world. Its revenues represent more than 52% of global tax revenues. This tax constitutes about one quarter of the tax revenues and about 5% of the total Gross domestic product (GDP). Among 184 member states of the two

international organizations (International Monetary Fund (IMF) and the World Bank), there are 118 implied VAT or sales tax (Ibrahim, 2015).

The adoption of VAT implementation as a condition of membership in the European Union has helped in spreading this tax in such countries (as well as non-member countries such as Norway and Switzerland), and has now been adopted in all OECD countries with the exception of the United States. Given the importance of taxation, countries strive to develop it in keeping with the global economic developments which impose integration into the economic system and the modernization of tax structures in the way of the adequacy of legislation and financial and tax regulations to become more compatible and integrated with the new world systems (Awad, 2012).

The study aims to tackle the need to amend the general sales tax to achieve maximum productivity and high economic efficiency. Through the extrapolation of tax systems in developed and advanced countries, where it was found that there is a marked tendency to depend on VAT, because it is characterized by achieving the maximum simplicity and tax neutrality in addition to the abundance of tax earnings. Tax burden also, is less than what is applicable in the form of general sales tax (Mohamed, 1999). The researcher found that VAT implementation would spare more revenue for the state at the lowest possible cost. In addition, Value Added Tax (VAT) system is characterized by the deduction system than other taxes on sales, which makes it neutral in tax and economic efficiency. Moreover, VAT implementation would contribute in improving the administrative efficiency of the tax system at large through coordination with the tax on commercial and industrial profits as well as coordination in the field of indirect taxation among States. VAT also helps in fighting fraud and ensuring effective control over the financiers, because of its high demand of submitting tax cards and invoices, which has helped in fighting tax evasion (Mohamed, 1999).

The study aims to examine the most important legislative problems that stand as an impediment to the process of VAT implementation in Egypt. The research was limited to the scope of general sales tax implementation to review the main obstacles that impede the implementation of value added tax in Egypt, and that is by accessing to legislative texts, previous studies, and scientific references in order to reach the ideal form of value added tax (Mehdi, 2013). The study reached a number of results that include: Tax deduction non-circulation in Egyptian law is one of the main obstacles to access the ideal form of VAT. In addition, the value added tax shall be a flat rate that is to be more simple and easy to implement. The tax examination according to the correct scientific methods is one of the most important steps to determine the correct tax base and to reduce the differences between the tax authority and financiers. One of the most important legislative problems that face tax assessor is the difficulty to define value added concept, and the lack of a fixed method of

¹ Financial Services Sector Manual, link: https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

² Value Added Tax Manual, in Saudi Arabia, 2017. First Edition link: https://www.vat.gov.sa/sites/default/files/2017-11-2/VAT_Manual_Arabic_16_Nov.pdf

measuring the tax base, and the problem of treatment of capital assets when determining tax base (Mehdi, 2013).

THEORETICAL FRAMEWORK

Concept of VAT value added tax

Value added tax (VAT) is a general tax introduced on business activities that produce and distribute goods and services. Value added tax is introduced on consumption because it is ultimately paid by the consumer, although it is gathered by the importer, producer or distributor (Ibrahim, 2015). Value added tax can also be defined as Osaimy (2018):

Cumulative Tax: Because the customs duty paid on the imported goods as well as other taxes and duties will be included in VAT base.

Comprehensive tax: The implementation of the tax law at a uniform and one rate throughout the state (although some countries apply multiple ratios).

It is a tax that is based on the principle of territoriality tax, the principle of levying tax only within the territorial jurisdiction in the borders of the state.

It is a tax that provides abundant and regular tax revenue, because it is levied several times a year

The tax is considered as an important incentive for investment as a result of the tax deduction. The tax is levied on consumer spending rather than investment spending.

General principles of tax treatment that levied on financial services

In this study, attention is focused on tax treatment that levied on financial services. The following statements illustrate the general principles of the tax treatment levied to financial services³ (Table 1):

VAT is levied on all financial services in the Kingdom of Saudi Arabia, and it is paid by a taxable person. It is paid as a fee, commission or express trade discount (not implied). The term "express fee" or "express commission" means the amount to be paid for the service, whether this amount is a specific monetary value or a percentage of a certain amount. While the trade discount is a fixed amount deducted from another due amount. The following example will illustrate this: A bank in Saudi Arabia provides mortgage loan to a customer who is a resident in Saudi Arabia. The customer will pay interest to the bank on the basis of interest rates offered by the bank. The bank will also levy an annual fee of 220 SR to the customer as an administrative fee for the bank. Accordingly, the interest received from the Bank is

³ Financial Services Sector Manual, link: https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

exempted from value added tax, as it is an implicit margin for financial services. VAT will be levied on the annual administrative fee (express fee)⁴.

Financial services sector products

We shall consider hereunder some of the products offered in the financial services sector to determine whether VAT is levied on them or not⁵:

Bank accounts: These include managing, operating and executing operations in bank accounts, whether current or savings account. These services are subject to tax exemption except in cases where there is an express fee, commission, or express trade discount.

Card services: means credit cards, debit cards, store credit cards and cash withdrawals, and these types are taxable services in case of charging any fees for subscription, renewal or using the card. Tax exemption levies on credit facilities that provided if the card services include providing credit services to cardholder and pays the consideration in form of an implicit margin (interest fees).

Money transfer: Financial services for VAT purposes include issuing, transferring, receiving, or dealing with money or any dealing with securities, or any banknotes or orders for payment. Such financial services are exempted from VAT, except where they are in return for service in a form of a fee, commission, or an explicit trade deduction.

Currencies: The profit margin earned by the provider of foreign exchange against currency exchange and deduction on the nominal value of the traveler's checks is considered from implicit margins made as remuneration for providing funds or bonds, so that the implied margin is exempted from VAT. In cases where an explicit fee or commission is levied on activities such as international remittance, these transactions will be subject to value-added tax with the core ratio.

Electronic funds transfer: Due to the commercial nature of modern cash management services and e-banking activities, the remuneration that financial services provider takes often involves a fee or commission (such as transaction charges and electronic payment fees) which is taxable.

Business services: Financial service providers always provide their customers with products like; bills of

⁴ Financial Services Sector Guide link : https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

⁵ Financial Services Sector Guide link: https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

Table 1. General principles of the tax treatment levied to financial services

(i) Financial services for which the consideration to be paid is in the form of an implied margin or an implied profit margin (to name a few interest, profit margins, difference in the price of supply and demand and commissions charged with an implicit profit margin).	Exempt from VAT
(ii) Similar financial equivalent which is collected from Islamic finance products.	
(iii) Issuing or transferring debt or capital securities	
(iv) Providing life insurance or reinsurance contracts	
(v) Financial services that offered within the Kingdom of Saudi Arabia for which the financial obligation is payable, such fees and commissions paid expressly commercial discounts.	Taxable by 5%
(vi) Providing other insurance contracts (without life insurance)	
(vii) Financial intermediaries fees	
(viii) Financial services provided to the recipients of the resident outside the Kingdom of Saudi Arabia	May be subject to zero percent or it may be outside VAT scope in Saudi Arabia

Source: Financial Services Sector Guide (2018:10).

exchange, letters of credit, guarantees and debt instruments bonds, for the purposes of facilitating domestic and international trade. All these products represent a commitment by the providers of such financial services to meet their obligations. The implicit margin paid for business transaction financing services is exempted from the value added tax such as revenue of nominal value discounts for debt instruments or interest. While any express fees or commissions levied on the Customer for these services shall be subject to the provision of VAT with the core ratio.

Borrowing: providing facilities through borrowing or credit may include the issuance of debt securities and charging interest on it. Such interest or borrowing fees levied as an implicit margin are treated as VAT-exempt financial services.

Syndicated loan: syndicated loan are provided through the partnership of a group of financiers. One of the financiers is the principal financier; he is responsible for the initial arrangement and management of the syndicated loan and collect the payments on behalf of the other lenders. If the principal financier acts on behalf of the other financiers in this way, the share of the financiers of accrued interest is considered as VAT exempt revenue.

Asset financing: Contracts that require transferring possession of goods to the customer with the possibility of transferring its possession in a time not later than payment date of the consideration of goods. Transferring goods under financing contracts where it is clear that the main purpose of the contract is to acquire goods which are the object of this contract and importing goods. Asset financing contracts generally have two components:

(i) The main component (supply / purchase asset), which is the value of the asset, the object of the contract and

any additional services such as insurance. This major component is taxed at 5%.

(ii) Reimbursement of the principal to the funder is considered to be outside the scope of the tax, while the interest of the loan is payable to the funder exempted from VAT if it is charged on the implicit margin.

Financial Markets / Currencies: Financial markets are the markets in which securities are traded. Issuing and transferring securities by a person acting on his behalf as principal, and the profits earned in the trading of other bonds such as derivatives, options, swaps and future contracts acquired by a person acting on his behalf as supplies exempted from VAT. Money market transactions are also exempted from VAT. The tax exemption does not apply to fees imposed by brokers or intermediaries who do not act as an agent acting in his or her own name. Below are some of the financial services that are outside VAT scope⁶:

Compensation: Where payments are made as compensation for damages or penalties that are not related to any supply by financial service provider outside the scope of VAT.

Third party costs classified as expenses: The financial service provider may collect the payment from the customer directly for a third party supply or cost. If the financial service provider acts on behalf of the customer, it is possible to transfer or charge those fees without adding VAT. In such a case, the financial service provider shall not treat the cost as expenditure incurred or deduct it as an input tax. Some of the products offered by the financial services sector are summarized in Table 2:

⁶ Financial Services Sector Guide Link:
https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

Advantages and disadvantages of VAT

The main advantages and disadvantages of VAT can be summarized as follows (Ibrahim, 2015).

VAT advantages:

- (1) Its fairness and breadth, as it includes all classes of society and not directed against a particular class.
- (2) Not against savings and investment
- (3) It works on reducing unwanted consumption because the tax raises the price of goods, which reduces the demand on it.
- (4) It works on increasing production in the society for people with low and middle income, where it is necessary to increase their work to compensate to make up the shortfall in their purchasing power.
- (5) Neutrality of the tax towards goods and services, whether local or imported or towards the production and circulation stages, and this would avoid double taxation.
- (6) Encouraging investment and directing it to the desired sectors.
- (7) Sovereign revenues are highly sensitive towards economic changes due to its rapid impact in the term of revenues on the level of general State revenues.
- (8) Reduce tax evasion or double taxation.

VAT disadvantages

- (1) Price increase and the emergence of waves of inflation in the economy at the beginning of taxation.
- (2) Rising prices cause low demand from low-income earners.
- (3) It is a semi-compulsory tax levied on most goods and services.
- (4) It never achieves social justice, where income is not an effective factor, as it is levied on the rich and the poor.
- (5) Its income may not be commensurate with the tax collection costs.
- (6) It requires a fairly advanced accounting system knowledge and understanding from companies and institutions.

Osaimy (2018) agreed that one of the disadvantages of VAT is that it is levied on various social strata with an equal percentage and it affects market prices directly or indirectly in addition to the full tax levied on the final consumer.

Registration in value added tax in Saudi Arabia

Types of registration in VAT could be divided into two types⁷: Mandatory Registration and Optional Registration. Registration is considered as mandatory if the total

taxable supply within 12 months exceeds 375,000 SR (registration limit). In this case, the person must register for VAT purposes. Supplies subjected to VAT do not include the following: Exempted supplies: such as exempted financial services or tax-free housing rent, purchases that fall outside the scope of the value-added tax in any (Gulf Cooperation Council) GCC member; while registration is optional for those who exceed the total taxable amount of SR 187,500 (optional registration limit) within 12 months. However, if the total taxable supply is less than 187,500 it is not required to register for VAT purposes.

MATERIALS AND METHODS

The study is based on the practical aspects of the commercial banks' financial statements in the Kingdom of Saudi Arabia, which are all 12 listed on the Saudi Stock Exchange, by identifying the following data that exist in financial position (total assets, total liabilities, customer deposits and retained earnings) in addition to the data in the statement of income (total operating income, total operating expenses, net operating income). In order to examine the impact of changes in banks before and after implementation of VAT, the study targeted the fourth quarter of 2017 (before implementation of VAT) and the first and second quarters of 2018 (after implementation of VAT). The reason for choosing two quarters in 2018 is that change needs a period more than 3 months.

Study hypotheses

- (1) There are statistically significant differences at the level of 0.05 and below between total assets before and after VAT implementation.
- (2) There are statistically significant differences at the level of 0.05 and below between total liabilities before and after VAT implementation.
- (3) There are statistically significant differences at the level of 0.05 and below between Total customer deposits (current accounts) before and after VAT implementation.
- (4) There are statistically significant differences at the level of 0.05 and below between total retained earnings before and after VAT implementation.
- (5) There are statistically significant differences at the level of 0.05 and below between total operating income before and after VAT implementation.
- (6) There are statistically significant differences at the level of 0.05 and below between total operating expenses before and after VAT implementation.
- (7) There are statistically significant differences at the level of 0.05 and below between net operating income before and after VAT implementation.

The study followed the inductive methodology in the theoretical part, which is the extrapolation of previous researches and studies related to the research subject either in the literature of accounting or in other sciences (Saad and Rahman, 2007). On the practical part, content analysis methodology was followed through analyzing certain financial statements items (Financial position statement, income statement). In financial position statement, the study focused on total assets, total liabilities, customer deposits, current accounts, retained earnings, while in income statement, the study targeted the following data (total operating income, total operating expenses, net operating income) from the data of 12 commercial

⁷ Link of Financial Services Sector Guide:
https://www.vat.gov.sa/sites/default/files/2018-02/VAT_Financial_Services_0702.pdf

Table 2. Financial services sector products.

VAT treatment	Financial equivalent	Product
		Bank accounts
Basic ratio	All fees, commissions, commercial discounts Fees of withdrawal from ATMs internationally Fees for issuing a certified check	Current account Savings account Deposit account
Exempt	The percentage of the annual interest rate, other implicit amounts	
Outside implementation scope	Fees of a penal nature Penalties fees (fines)	
Basic ratio	All fees, commissions, commercial discounts Fees of withdrawal from ATMs internationally Money transfer fees (external or internal)	
Exempt	The percentage of the annual interest rate, other implicit amounts	Electronic Funds Transfer
Outside implementation scope	Fees of a penal nature Penalties fees (fines)	
Basic ratio	All fees, commissions, commercial discounts Fees for issuing an additional check book Bank check certified cancellation fees	
Exempt	The percentage of the annual interest rate, other implicit amounts	Checkbooks
Outside implementation scope	Fees of a penal nature Penalties charges (fines)	
Basic ratio	All fees, commissions, commercial discounts International Balance Inquiry Fees Issuing fees bank account from branch	
Exempt	The percentage of the annual interest rate, other implicit amounts	Fees for issuing bank statement
Outside implementation scope	Fees of a penal nature Penalties fees (fines)	
		Card Services
Basic ratio	All fees, commissions, commercial discounts International authorization fees International cash withdrawal fees A fee for the international process Fees of issuing international card operations statement Fees of Issuing a lost / stolen card Annual fees, balance transfer fees	ATM cards credit cards Prepaid Cards
Exempt	The percentage of the annual interest rate, other implicit amounts The margin of differences in currency exchange rate	
Outside implementation scope	Fees of a penal nature Penalties fees (fines)	
Money transfer		
Basic ratio	All fees, commissions, commercial services External transfer fee Foreign service fee The international remittances fees Transfer commission fees	Money transfer

Table 2. cont'd

Exempt	The percentage of the annual interest rate, other implicit amounts	
Outside implementation scope	Fees of a penal nature Penalties fees (fines)	
Basic ratio	All fees, commissions, commercial discounts Renting a safe box inside the kingdom Fees for loss / replacement of treasury key	Safe deposit boxes
Exempt	Annual interest rate / other implicit amounts	
Outside implementation scope	Fees of a penalty Fines for delaying payment of rent	
	Business service	
	All fees, commissions, commercial discounts Admission fee Negotiate bills fees collection fee extension/renewal fee endorsement/ Ratification or amendment fees Shipping fee or postal transport	(traded or received) bills
Basic ratio		
Exempt	The percentage of the annual interest rate, other implicit amounts The income earned from discounted bills	
	Capital markets	
	All fees, commissions, commercial discounts Brokerage fee Supply of basic commodity Extension fee / renewal collection fee The subscription fee	
Basic ratio		
Exempt	The percentage of the annual interest rate, other implicit amounts Issuance of securities The sale and purchase of securities (trading as an asset) Option contracts allowances Trading revenues gained Trading gains	Securities operations
Outside implementation scope	Fees of a penal nature Early Recovery fine	

Fees of a penal nature are interpreted in a narrow range and applied only to separate charges for products/ services.
Source: (List of Financial Services that Subjected to Value Added Tax and exemptions, 2017)

banks in Saudi Arabia, all listed on the Saudi Stock Exchange. It should be noted that the analysis of the content depends mainly on the quantitative method in the analysis, but is applied for the analysis of different purposes, including comparison (Assaf, 1995), which finds the researcher suitable for the nature of the study. The study aimed at the period of time, namely the data for the fourth quarter of 2017 (before the implementation of VAT) and the data for the first quarter and the second of 2018 (after the implementation of VAT).

Study data

Financial Statements of Commercial Banks in Saudi Arabia According to the Saudi Stock Exchange are given in Table 3.

Statistical tests

The study included all 12 commercial banks in the Kingdom of Saudi Arabia. On the statistical side, the data were analyzed descriptively and testing interrelated samples using the SPSS program.

Data analysis (descriptive analysis)

Table 4 and Figure 1 illustrate the results of the comparison between the average of the total assets in Saudi commercial banks before and after implementation of VAT, where the data indicate a slight decrease in the total assets after implementation of VAT. Table 5 and Figure 2 illustrate the results of the comparison

Table 3. Financial statements of commercial banks in Saudi Arabia according to the Saudi stock exchange.

Bank No.1	After tax implementation		Before tax implementation
	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	215,476,278	213,670,065	216,282,171
Total liabilities	178,541,332	177,501,064	177,659,178
Customer deposits	153,418,142	151,921,098	154,365,549
Retained earnings	2,624,366	1,781,879	4,013,536
Total operating income	7,702,280	7,989,139	8,011,766
Total operating expenses	4,395,309	3,979,581	3,706,079
Net operating income	3,342,487	4,049,477	4,352,408
Bank No.2	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	69,764,537	67,976,487	68,287,455
Total liabilities	58,370,161	59,506,873	59,458,616
Customer deposits	49,775,115	52,621,181	52,284,748
Retained earnings	1,015,749	1,126,971	1,526,541
Total operating income	686,528	657,798	648,082
Total operating expenses	435,712	415,327	456,721
Net operating income	253,386	245,301	193,752
Bank No.3	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets			
Total liabilities	101,953,029	91,531,235	93,796,219
Customer deposits	87,441,176	76,810,160	79,517,152
Retained earnings	71,300,751	61,032,444	66,942,620
Total operating income	685,951	778,102	1,284,858
Total operating expenses	671,084	686,324	677,442
Net operating income	337,474	354,156	357,520
Bank No.4	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	84,884,278	88,803,427	99,869,830
Total liabilities	71,425,984	75,575,944	86,270,134
Customer deposits	66,180,048	70,501,590	78,274,963
Retained earnings	1,332,269	1,105,997	1,469,189
Total operating income	877,027	860,054	924,899
Total operating expenses	626,114	577,332	599,265
Net operating income	253,585	286,055	326,516
Bank No.5	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	188,918,291	184,017,627	192,928,881
Total liabilities	156,814,765	152,323,664	161,267,500
Customer deposits	146,704,729	141,943,684	150,954,187
Retained earnings	7,564,670	7,046,506	6,856,552
Total operating income	1,665,132	1,744,483	1,619,681
Total operating expenses	744,475	634,893	1,198,990
Net operating income	920,657	1,112,119	422,767
Bank No.6	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	183,013,114	182,622,033	187,615,344
Total liabilities	150,043,001	150,727,169	154,144,873
Customer deposits	135,930,778	138,416,248	143,238,261
Retained earnings	7,549,356	7,332,542	8,798,120
Total operating income	1,886,056	1,784,029	1,766,706
Total operating expenses	453,661	745,089	1,060,596
Net operating income	1,432,395	1,038,940	706,110

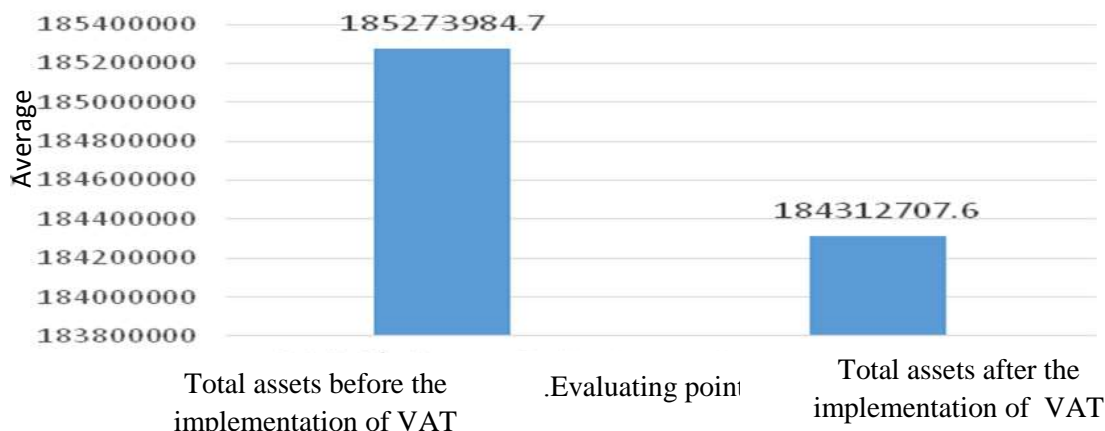
Table 3. Cont'd

Bank No.7	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	167,784,223	168,396,134	171,701,699
Total liabilities	142,456,389	143,257,206	146,635,734
Customer deposits	129,238,639	130,026,929	136,048,089
Retained earnings	4,555,135	4,434,359	4,445,494
Total operating income	1,646,249	1,533,159	1,584,652
Total operating expenses	731,223	708,296	953,721
Net operating income	919,101	816,498	634,430
Bank No.8	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	231,700,874	228,910,523	227,611,079
Total liabilities	188,234,181	185,346,303	182,928,927
Customer deposits	168,597,957	172,327,251	167,987,571
Retained earnings	6,942,531	7,166,507	8,543,111
Total operating income	2,078,543	1,939,021	1,903,012
Total operating expenses	678,364	633,707	690,096
Net operating income	1,400,179	1,305,314	1,212,916
Bank No.9	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	348,439,181	349,243,305	343,116,528
Total liabilities	295,648,670	298,803,087	287,365,610
Customer deposits	280,386,624	283,936,380	273,056,445
Retained earnings	15,154,275	12,702,596	17,969,236
Total operating income	4,288,070	4,142,405	4,198,453
Total operating expenses	1,719,236	1,759,799	1,745,485
Net operating income	2,568,834	2,382,606	2,452,968
Bank No.10	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	68,406,882	65,778,334	63,207,676
Total liabilities	60,693,188	58,057,729	55,618,883
Customer deposits	54,186,261	52,780,428	49,789,534
Retained earnings	1,016,470	990,572	770,805
Total operating income	842,677	790,974	784,397
Total operating expenses	566,779	534,862	558,537
Net operating income	275,898	256,112	225,860
Bank No.11	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	116,587,762	113,747,007	115,005,067
Total liabilities	97,000,135	93,568,290	94,407,914
Customer deposits	88,937,931	89,339,506	89,064,751
Retained earnings	2,442,449	3,049,148	3,088,493
Total operating income	1,231,004	1,109,760	1,298,660
Total operating expenses	606,259	532,660	738,875
Net operating income	621,325	581,812	560,054
Bank No.12	Second quarter 2018	First quarter 2018	Fourth quarter 2017
Total assets	454,374,068	437,506,289	443,865,867
Total liabilities	389,342,082	372,645,341	379,590,269
Customer deposits	317,652,668	309,000,832	308,942,120
Retained earnings	13,737,539	23,225,383	22,631,586
Total operating income	4,660,554	4,779,241	4,515,536
Total operating expenses	2,081,077	1,792,364	1,959,148
Net operating income	2,579,477	2,986,877	2,556,388

*All numbers are in a thousands.

Table 4. Comparison between total assets average before and after the implementation of VAT.

Variable	Average	Standard deviation
Total assets before the implementation of VAT	185273984.67	114404409.28
Total assets after the implementation of VAT	184312707.63	115929832.14

**Figure 1.** Comparison between the average of the total assets in Saudi commercial banks before and after implementation of VAT.**Table 5.** Comparison between total liabilities average before and after the application of VAT.

Variable	Average	Standard deviation
Total liabilities before VAT implementation	155405399.17	96512140.87
Total liabilities after VAT implementation	155005578.92	98581526.51

between the average total liabilities in Saudi commercial banks before and after VAT implementation. The data indicate a slight decrease in the total liabilities after VAT implementation. Table 6 and Figure 3 illustrate the results of the comparison between the average of customer's deposit in Saudi commercial banks before and after the VAT implementation, where the data indicate a slight decrease in customer deposits after VAT implementation. Table 7 and Figure 4 illustrate the results of the comparison between the average profits retained in Saudi commercial banks before and after VAT implementation, where the data indicate a significant decrease in profits retained after VAT implementation. Table 8 and Figure 5 illustrate the results of the comparison between the average gross operating income of Saudi commercial banks before and after VAT implementation, where the data indicate a slight increase in the total operating income after VAT implementation. Figure 6 illustrates the comparison between average total operating expenses before and after VAT implementation. Table 9 and Figure 7 illustrate the results of the comparison between the average net operating income of the Saudi commercial banks before and after VAT implementation. The data indicate a significant increase in net operating income after VAT implementation.

Testing the study hypotheses

The paired sample test, which is one of the T-Test tests was used. The T-Test is one of the most famous scientific tests used to compare two groups through their arithmetic mean. For regression

analysis; the test determines whether regression line coefficients are statistically significant (Shiraz, 2015:339).

First hypothesis: There are statistically significant differences at the level of 0.05 and less between the total assets before and after VAT implementation

Null hypothesis (H₀): There are no statistically significant differences between the total assets before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between the total assets before and after VAT implementation.

Table 10 indicates that the value of the significance level equals 0.542, which is greater than the significance level (0.05). We accept the null hypothesis which supposes that there are no statistically significant differences between the total assets before and after the implementation of value added tax.

Second hypothesis: There are statistically significant differences at the level of 0.05 and less between total liabilities before and after VAT implementation.

Null hypothesis (H₀): There are no statistically significant

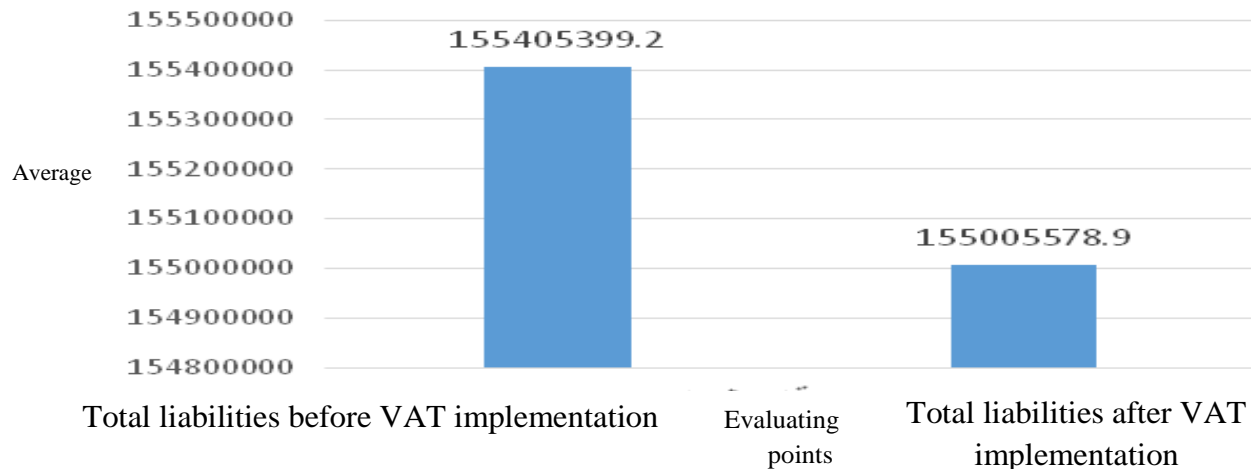


Figure 2. Comparison between the average total liabilities in Saudi commercial banks before and after VAT implementation.

Table 6. Comparison of average customer deposits - current accounts - before and after VAT implementation.

Variable	Average	Standard deviation
Customer deposits before VAT implementation	139245736.50	82543683.17
Customer deposits after VAT implementation	138173217.25	85269010.61

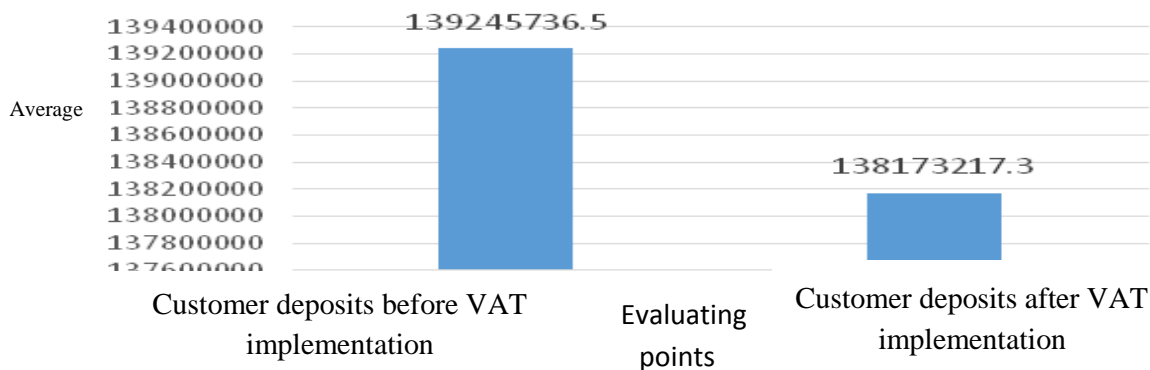


Figure 3. Comparison between the average of customer's deposit in Saudi commercial banks before and after the VAT implementation.

Table 7. Comparison between the average retained earnings before and after VAT implementation.

Variable	Average	Standard deviation
Retained Earnings before VAT implementation	6783126.75	6957663.62
Retained Earnings after VAT implementation	5640055.08	5633677.63

differences between total liabilities before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between total liabilities before and after VAT

implementation.

Table 11 indicates that the value of the significance level equals 0.816, which is greater than the significance level of (0.05); we accept the null hypothesis, which is supposed that there are no statistically significant differences between the total liabilities

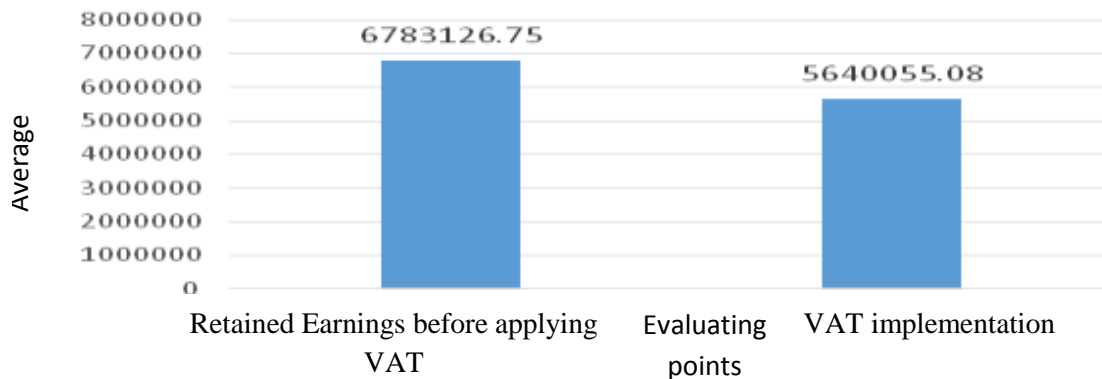


Figure 4. Comparison between the average profits retained in Saudi commercial banks before and after VAT implementation.

Table 8. Comparison between average gross operating income before and after VAT implementation.

Variable	Average	Standard deviation
Total operating income before VAT implementation	2327773.83	2197032.32
Total operating income after VAT implementation	2343816.29	2178803.59

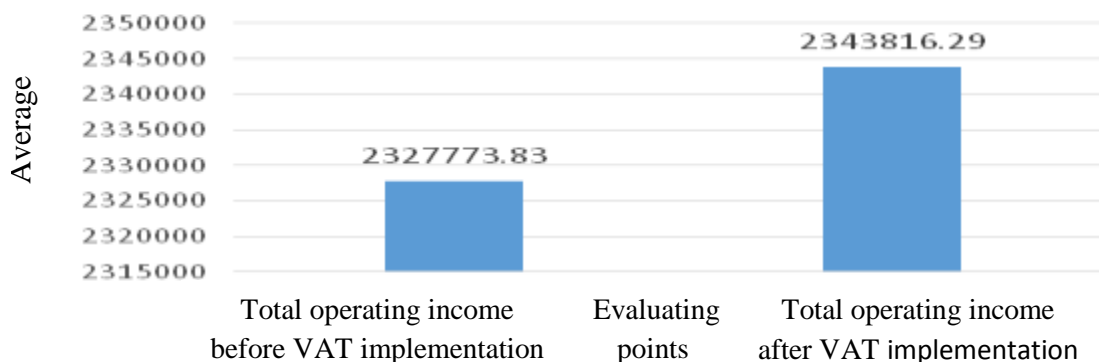


Figure 5. Comparison between the average gross operating income of Saudi commercial banks before and after VAT implementation.

Table 9. Average total operating expenses before and after VAT implementation.

Variable	Average	Standard deviation
Total operating income before VAT implementation	1168752.75	940497.67
Total operating income after VAT implementation	1085156.21	1097704.16

Table 10. Average total operating expenses before and after VAT implementation.

Variable	Average	Standard deviation
Total operating income before VAT implementation	1166335.33	1291763.67
Total operating income after VAT implementation	1260467.58	1139286.31

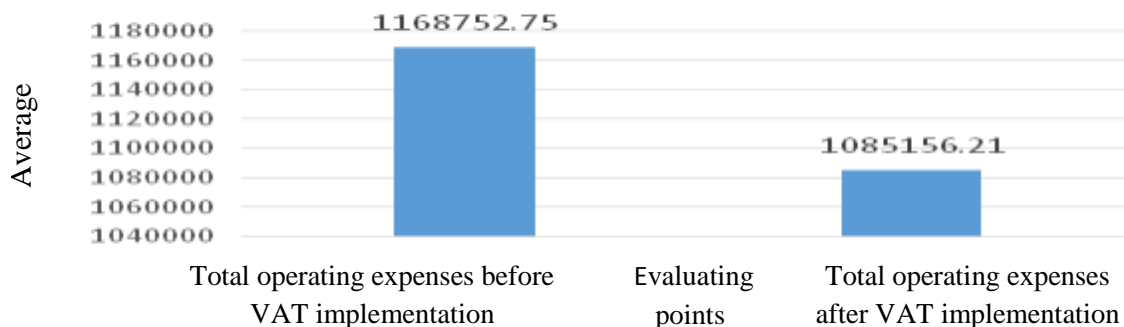


Figure 6. Comparison between average net operating income before and after VAT implementation.

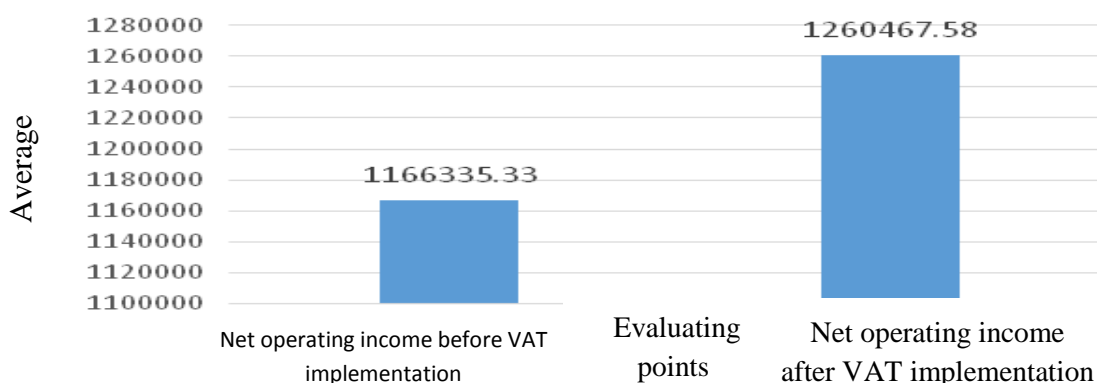


Figure 7. Comparison between the average net operating income of the Saudi commercial banks before and after VAT implementation.

Table 11. Differences between the total assets before and after the implementation of value added tax.

	Paired differences						t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	95% Confidence interval of the difference					
				Lower	Upper				
Pair 1 Assets before_4 – Assets	961277.04167	5289671.13996	1526996.52829	-2399619.65661	4322173.73995	.630	11	0.542	

before and after the implementation of value added tax.

Third hypothesis: There are statistically significant differences at the level of 0.05 and less between the total customer deposits (current accounts) before and after VAT implementation.

Null hypothesis (H₀): There are no statistically significant differences between total customer deposits (current accounts) before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between total customer deposits (current accounts) before and after VAT implementation.

Table 12 shows that the value of the significance level is 0.514 which is greater than the significance level (0.05). Thus, the null hypothesis is accepted that there are no statistically significant differences between customer deposits before and after the implementation of value added tax.

Fourth hypothesis: There are statistically significant differences at the level of 0.05 and less between the total retained earnings before and after VAT implementation.

Null hypothesis (H₀): There are no statistically significant differences total retained earnings before and after VAT implementation.

Table 12. differences between the total liabilities before and after the implementation of value added tax.

	Paired differences					t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	95% Confidence interval of the difference				
				Lower	Upper			
Pair 1 Liabilities before_٢٠٢٠ – liabilities	399820.250005804440	29257	1675597.58270	-3288145.16382	4087785.66382	.239	11	0.816

Table 13. Differences between customer deposits before and after the implementation of value added tax.

	Paired differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. error mean	95% Confidence interval of the difference				
				Lower	Upper			
Pair 1 Customer deposits before_٢٠٢٠ – deposits	1072519.250005504867	42393	1589118.34453	-2425106.64394	4570145.14394	.675	11	0.514

Table 14. Differences between profits before and after VAT implementation.

	Paired differences					t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	95% Confidence interval of the difference				
				Lower	Upper			
Pair 1 Earnings before_٢٠٢٠ – earnings	1143071.66667	1542096.10416	445164.80043	163270.54713	2122872.78620	2.568	11	0.026

Alternative hypothesis (H₁): There are statistically significant differences between total retained earnings before and after VAT implementation.

Table 13 indicates that the value of significance level equals 0.026, which is less than the significance level of (0.05); it means that it is highly statistically significant. Thus, the null hypothesis can be rejected and the alternative hypothesis is accepted which is supposed that there are statistically significant differences between profits before and after VAT implementation.

Fifth hypothesis: There are statistically significant differences at the level of 0.05 and less between the total operating income before and after VAT implementation

Null hypothesis (H₀): There are no statistically significant differences between total operating income before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between total operating income before and after VAT implementation.

Table 14 shows that the value of the significance level is 0.591, which is greater than the significance level (0.05). Therefore, we accept the null hypothesis that there are no statistically significant differences between the total operating income before and after VAT implementation

Sixth hypothesis: There are differences of statistical significance at the level of 0.05 less between the total operating expenses before and after VAT implementation.

Null hypothesis (H₀): There is no statistically significant difference between total operating expenses before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between total operating expenses before and after VAT implementation.

Table 15 shows that the value of significance level is 0.277, which is greater than the significance level (0.05); we accept the null hypothesis that there are no statistically significant differences between the total operating expenses before and after the implementation of value added tax.

Seventh hypothesis: There are differences of statistical significance at the level of 0.05 less between net operating income before and after VAT implementation

Null hypothesis (H₀): There are no statistically significant differences between net operating income before and after VAT implementation.

Alternative hypothesis (H₁): There are statistically significant differences between net operating income before and after VAT

Table 15. Differences between the total operating income before and after VAT implementation.

		Paired differences					t	df	Sig. (2-tailed)
		Mean	Std. deviation	Std. error mean	95% Confidence interval of the difference				
					Lower	Upper			
Pair 1	Operating income before_4 – Operating income	16042.45833	100419.85142	28988.71412	-47761.27126	79846.18793	0.553	11	0.591

Table 16. Differences between the net operating income before and after VAT implementation.

		Paired differences					t	df	Sig. (2-tailed)
		Mean	Std. deviation	Std. error mean	95% Confidence interval of the difference				
					Lower	Upper			
Pair 1	Net operating income before_4 – net operating income	94132.25000	315453.99035	91063.72312	-106297.65322	294562.15322	1.034	11	0.323

implementation.

Table 16 indicates that the value of the significance level is 0.323, which is greater than the significance level (0.05). Therefore, the null hypothesis is there are no statistically significant differences between the net operating income before and after VAT implementation.

CONCLUSION AND RECOMMENDATIONS

The findings of the study can be concluded in the following points:

- (i) There is a slight decrease in total assets after the implementation of VAT.
- (ii) There is a slight decrease in total liabilities after the implementation of VAT.
- (iii) There is a slight decrease in customer deposits after the implementation of VAT.
- (iv) There is a significant decrease in retained earnings after the implementation of VAT.
- (v) There is a slight increase in the total operating income after the implementation of VAT.
- (vi) There is a significant decrease in the total operating expenses after the implementation of VAT.
- (vi) There is a significant increase in net operating income after the implementation of VAT.
- (vii) There are no statistically significant differences between the total assets before and after the implementation of VAT.
- (vii) There are no statistically significant differences between the total liabilities before and after the implementation of VAT.

(viii) There are no statistically significant differences between customer deposits before and after the implementation of VAT.

(ix) There are statistically significant differences between retained profits before and after the implementation of VAT.

(x) There are no statistically significant differences between total operating income before and after the implementation of VAT.

(xi) There are no statistically significant differences between the total operating expenses before and after the implementation of VAT.

(xii) There are no statistically significant differences between the net operating income before and after the implementation of VAT.

Finally, the study findings illustrate that banks in Saudi Arabia were not significantly affected by the implementation of VAT, but the effect was very limited.

We cannot also say that this effect was a direct result of VAT implementation. However, other local, regional and international factors, economic and political changes, inflation and deflation shall also affect the banking sector. This opens the way for research opportunities by looking at the factors affecting the banking sector in Saudi Arabia, as well as examining the impact of VAT implementation on different sectors at different periods.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

Taxation efficiency and accounting assisted transparency, insight into a European framework

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This paper highlights the relationship between taxation, accounting and transparency for achieving disclosure and efficiency. Research takes into consideration taxation costs and legislation in order to discern an optimized business level of transparency. The data collected from questionnaires were analyzed by descriptive statistical analysis, followed by factor analysis and reliability testing that led to relationships between tax authorities' efficiency, financial framework reliability, and accounting assisted control systems. A close relation was found between a country's fiscal framework and accounting assisted transparency that may lead to a better cooperation between state law, efficient taxation, required transparency and collaboration of accounting in auditing procedures. Modern business and audit environments abide to a steady set of values. However, instead of a clear positive effect on accounting assisted transparency, there seems to be a different tendency. The factors seem to push tax authorities and businesses to reach international market levels of auditing. This study confirms that accounting and tax systems can be handled in a unified way and enable at an E.U. level, creating scale economies for corporations and citizens.

Key words: Auditing, transparency, accounting, tax authorities.

INTRODUCTION

Financial information practices are increasingly developing in order to respond to the needs of capital markets. On the contrary, tax practices are always a matter of law and formed in order to manage the objectives of social policy. States may lose revenue as a result of tax misconducts, wrong transfer invoicing, risk counterbalance, overuse of tax motives and other tax planning systems (Sikka, 2017). It is of crucial matter to correctly plan taxation in a state.

The taxation of companies is an important financial issue for all states. Countries with low revenue depend on taxation for at least 16% of their total revenue, in contrast to the 8% of the wealthy countries (Crivelli et al., 2015).

Brock (2011) argues that in developing countries lacking disclosure requirements concerning sales prices for resources allows corruption to flourish and facilitates leaders' ability to siphon money away from developing

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countries. In the U.S., losses because of tax evasion used to range between 77 and \$111 billion in measurements up until 2012 (Clausing, 2015). According to estimations made by the IMF, the long-term losses for advanced economies are of the percentage of 0.6% of their GDP, but proportionally they are three times higher for developing countries (Crivelli et al., 2015). Many of the techniques of international tax evasion entail the use of a tax shelter and the system of confidentiality of off-shore areas (Panel, 2015). According to Christian - Aid (2009), companies utilize accounting rules to transfer money and to reduce or avoid their tax obligations. We find that there is a need to maintain an equal distance to the aspects of profit in case of application or non-application of accounting systems such as the International Financial Reporting Standards (IFRS). When companies choose transparency they have to part with some of the benefits from accessing more and cheaper capital against the cost of a bigger tax burden (Ellul et al., 2011). Developing countries should have tax rules which do not demand great specialization from the staff to avoid bias and subjectivity.

Transparency, access to capital markets and company investment must be positively associated, especially for companies with high sensitivity to the fluctuations of an economy, either state or sector based, since it is probable to witness cases of limited funding due to high capital demands. However, this can only happen in countries where capital markets are developed in such a level that the accounting transparency of companies is rewarded with plenty and cheap external funding (Ellul et al., 2011). Transparency, compared to ethics is positively affecting taxation as long as it encourages black economy (Canibano and Ucieda, 2006).

This paper aims to highlight the relationship between taxation, accounting and transparency in a small developed country in order to achieve efficient disclosure. Greece has been selected, due to the prevalence of tax non-compliance cases and persistent fiscal deficiencies. The study argues that taxation and legislation factors (time, cost, human resources) are utilized in order to achieve transparency and a minimum of bureaucratic issues. Through questionnaires administered to undergraduates and graduates of financial universities the relationships between tax authorities' efficiency, a country's financial framework, and the existing accounting assisted control systems are tested. The research investigates a country's current fiscal framework as well as the measures accounting assists transparency for achieving better cooperation between law, taxation, required transparency and auditing procedures.

This paper contributes to the study of transparency, taxation and accounting as a mean to an efficient end, in Greece as well as in the European Union. It opens a path for utilizing a state's taxation and auditing transparency, to achieve financial and to the point results. Furthermore, it demonstrates how accounting can support the private

and public sector, especially for cases of complicated and broad legislature.

LITERATURE REVIEW

There is a strong correlation between accounting and taxation which is located in the taxation of profit and depreciation of non-current assets. It can be considered as a relation of conflict under the notion that the principles, the regulations and their settings have different objectives and the convergence can be difficult (Grosanu et al., 2012). Their objective is the provision of information for the financial state of the company but with a different view.

In order to evaluate the interaction between accounting and taxation, we must understand the aspects of all sectors, the behavior of the bodies of accounting and taxation, as well as the national peculiarities of the different states (Strapuc and Cazacu, 2016). A company facing high tax pressure has a greater motive to choose low accounting transparency. Bushman et al. (2004), while talking about planning and measurement of company transparency at country level, have classified information mechanisms for the reinforcement of company transparency in three categories: a) company reports, b) obtaining classified information and c) spreading information (Wang, 2010). Yet still, liquidity represents an important element through which transparency is related to the lowest capital cost and highest evaluation. Cumulatively, the results show that a focus on transparency is possible and could contribute to fully understand the decreases of liquidity due to fiscal depression periods (Lang et al., 2012).

The calculations of taxes are based on accounting profits surely adjusted based on factors such as capital rights, depreciations, donations, grants, credits, capital profits, etc. (Sikka, 2017). Depending on the country there can be high, partial or low dependence of the finance related to accounting and taxation monetary amounts and variations (Richard, 2012). Accounting is the starting point for the taxation of businesses (Nurnberg, 2006). The factors that influence directly the accounting result and indirectly the tax result must be recognized. These are either subjective, such as the nature of the financial system or the company administrative methods or objective, such as understanding the determination of the accounting result or the accounting policies (Grosanu et al., 2012). They also report that the details which influence directly the dimension of the accounting result and indirectly the tax result are:

- (1) Creative accounting
- (2) Taxation
- (3) Inflation phenomenon.

Accountants are tasked to present a reliable, objective

and real image of financial performance in order to inform all interested parties. On the other side, tax officials' objective is the calculation of the taxes that correspond to the financial success of the financial entity and their collection (Bacanu, 2016).

One of the duties of accounting is the administration, upon proper processing, of a series of information according to the needs of the users. The financial authorities are in the privileged position to use these financial states through regulative actions. However, they do not have the quality of the main user of the accounting information. Essentially, the method of collecting information and their administration is the cycle of accounting that is all the consecutive stages of processing of accounting information (Lepadatu et al., 2014).

One of the biggest differences between accounting and taxation is the fact that accounting is framed by certain set of rules (International Accounting Standards, International Financial Reporting Standards, General Accepted Accounting Principles), unified for a groups of countries and states (e.g. EU, USA), while taxation is focused to a more narrow framework (Lepadatu et al., 2014). Also, the accounting performance and examination of financial states of a company are connected with taxation issues upon a merge or a buy-out, while taxation is a factor that influences the choice of company form and structure (Belz et al., 2019).

A specific example of the difference between the principles of accounting and taxation are depreciations, while there is not a unique approach to the matter. Additionally, the bodies responsible are usually unwilling to combine harmoniously the profits of society and financial factors (Cojocari and Cojocari, 2014). Practically, the period of value regains of fixed assets, for tax reasons, can be extended multiple times, increasing the working costs of accountants. In this way the fundamental rule of political depreciation promoted by the state is underestimated compare to the operational duration of the fixed assets. Additionally, the calculated period of depreciation of non-current assets, for tax reasons, is increased, as well as the cost of inflows of the elements included in a category of immovable property (Cojocari and Cojocari, 2014).

EU countries have separate tax issues, taking into consideration the community legislations of indirect tax. Accounting is used today in decision taking by professional bodies in making the rules. Taxation though is determined by the authorities of public power of each state. Accounting is a part of a regulatory framework, while taxation is part of the regulatory public system and is applicable based on national rules (Lepadatu et al., 2014)

Cuzdriorean et al. (2012) analyzed the relation between taxation and accounting by recognizing 6 factors of effect: 1) Dependent relation. In these cases there are no deferred tax regulations and thus alternative solutions are

allowed. Personal and unified accounts are affected by tax regulations (Belgium, Italy), 2) Dependent relation. Few deferred tax regulations and tax effects, (France, Germany), 3) Dependent relation with wanted dissolution of their relation. There are no strict regulations related to the deferred taxation (Sweden, Finland), 4) Typically independent, but in practice they have a strong relation. Few strict regulations are related to deferred taxation (Poland, Czech Republic), 5) Independent relation. Alternative regulation allows for deferred taxation (Denmark), 6) Independent relation. Special regulations related to deferred taxation (Ireland, UK, Norway).

Gallegro (2004) has examined the relation between accounting and taxation to imported Spanish businesses and has recognized the income tax, the social welfare systems, the provision for pensions, the monetary correction, the succeeded depreciation or exemption for reinvestment as a point of difference between accounting and tax profit.

Strapuc and Cazacu (2016) found that in Denmark and the Netherlands the two notions are independent as accounting is separated from taxation. In fact, the tax basis is formulated based on results. On the other hand, Austria, Belgium, France, Germany, Italy, Spain and the United Kingdom belong to the category of countries where taxation depends from accounting, since the tax system is formulated based on financial results and situations. Greece is an example of country where accounting depends on taxation. On the other hand, in context of evaluating policy measures to tackle evasion undeclared work, Greece focuses on the implementation of measures while adopting policy incentives, in a greater extent than other countries of the European Economic Area. From an organizational point of view, accounting is considered to be a variable of fiscal administration that offers information for an effective and safe tax operation. Due to the differences between accounting and tax authorities there is a disconnection between financial and fiscal accounting (Strapuc and Cazacu, 2016). The synchronization of accounting and taxation based on the development of financial reports and the increase of commercial balance demands a standardized methodology which eliminates the errors of accounting presentation to which there should be a balance between financial and accounting relations.

According to Strapuc and Cazacu (2016) the most relevant approaches for the relation between taxation and accounting is the regulative and the practical. Accounting must be performed based on its principles without being influenced by adaptations due to taxation. For this to happen, the fiscal recognition of some expenses should not be dependent by their accounting printing. A binding relation between accounting and taxation is an impediment in the balance of accounting (Blake et al., 1997).

In another study, Gogol (2016) studied the development of accounting and taxation in developing countries,

systems that connect them and their impact to small businesses and economies of the states. The most appropriate mechanism for the determination of tax basis and the finding of the amounts of the taxes is considered the adaptation of tax elements according to the rules of tax legislation while the respective primary documents are the basis for tax or accounting use. The comparative analysis of accounting methods and systems may contribute to the determination of typical models of development that may influence provision and care for problems a great deal. There are two models of coexistence for tax and accounting systems:

- (i) The European model
- (ii) The Anglo-American model

The European model (Italy, Switzerland, Germany), the amount of accounting revenue should correspond to the income that has to do with taxes. For this reason, common accounting and tax accounting must coincide and the accounting system should focus on the cover of fiscal needs of the state, while the regulation of the accounting methods should be implemented at a national level (Gogol, 2016).

Countries that use the Anglo-American model (U.S.A., UK), believe that the amount of accounting incomes differs from income for tax purposes. In these countries there is a simultaneous financial and tax accounting and financial information focuses on a wide range of users, while financial principles, regulations and standards are developed by professional accounting bodies. Financial information mainly address the informative needs of stakeholders and criteria are based on their usefulness in decision taking, accuracy and impartiality.

In American standards the process ends with a written financial report of the business. With the report a cohesive and continuous record of financial sources and obligations is secured (Gogol 2016). Based on this model, the rules of taxation and accounting are established by different bodies and report on taxation is considered separate information from the financial report.

In countries that use the European model, the effect of taxation on accounting is wide and is expressed with the completion of accounting books and financial information for the tax basis. The main goal to reflect the profits of a state is through regulative acts and codes for the implementation of principles (Gogol, 2016). The accounting standards in the US support tax practices, so that there are closer to the principle of maintaining the financial capital (Sikka, 2017). The financial bodies are lead to the presentation of a distorted image of themselves in order to succeed the minimum taxation of their revenues. This violates accounting principles and standards (Bacanu, 2016). From the analysis of the notions, accounting and transparency, there are studies in the literature which have mainly examined the effect of the application of the IFRS to the so called succeeding of

transparency, the effect of the frequent changes to the regulations and rules that govern the standards and the implementation of accounting information systems.

Some studies deal with the way that transparency improves the performance of the company through supervision and discipline. Francis and Martin (2010) examined the supervisory role that conservative accounting profits have in case of a buyout. They find that businesses that perform a timelier acknowledgment of damages make more profitable buyouts and it is less possible to participate to cessions after the buyout.

Barth et al. (2013) have studied the impacts of the capital market to the improvement of transparency of the profits through the financial states of imported businesses. Ye et al. (2018) have examined the impact of the transparency of profits to the auditory market by studying the impact this has in conditions of balance of auditory mechanisms and processes. Based on the results of their study, the adoption of new accounting standards reduces the negative relation between transparency of income and audit expenses, a fact that shows that the increase of the complexity of the audit leads to the increase of the transparency of income while at the same time it increases the balance of audit expenses.

Several studies were based on assumptions and models as the one of Duffie and Lando (2001), by assuming that transparency was increased due to the application of total accounting standards, such as international standards. Bhat et al. (2016) noted that the adoption of IFRS increased transparency. They justify the increase of the transparency as a result of conciseness and clarity even for specialized accounts of financial situations. A special emphasis is given to logical value and not historical. According to Vyas (2011), evaluation based on logical value offers more information and signs that warn for possible changes to the current market expectations and have to do with credit risk. Finally, they are based on general rules and not instructions, allowing for greater freedom and independence in businesses without affecting the profits of investors.

On the other hand, there are studies which conclude to the existence of a negative relation between accounting and transparency. Anderson (2018) examined the effect of the obligatory adoption of IFRS in transparency for investors measuring the increase in profit management during the time period after the adoption. By comparing the businesses that were obligated to adopt IFRS with others through the power of legal imposition, the markers of accounting and market value, they concluded that IFRS decrease the quality of financial information and transparency for the investing public and do not serve efficiency in international markets. The relation of transparency with the operation of accounting information systems is also examined. Nias Ahmad et al. (2016) studied how transparency, the vision of administration and the technology of information affect the performance

of a business and they found out that the effect of accounting information systems to the performance of the business was partly moderated by the transparency of information. The presentation of a right image of a financial entity includes the application of the accounting principles and rules. Transparency is also necessary for such a result to arise (Bacanu, 2016).

Research hypothesis

Based on the categorization of factors found in literature that influence directly the accounting result, a model of determination of accounting profits and taxation is created.

Financial authorities efficiency

In the analysis of taxation aforementioned different sides of the issue were examined, as this covers various forms of the financial life of businesses. Initially, for taxation systems to be successful, trust must be placed upon tax authorities. Tax evasion undermines the public's trust to the legality of taxation (Brock, 2011). As long as citizens have trust towards the tax authorities, their level of conformity to the laws increases (Muehlbacher and Kirchler, 2010; Torgler and Schneider, 2005). It was decided, within this same framework, to examine the way the public is served by tax authorities. It is required for tax authorities to take measures so as to improve their relation with citizens so that their reliability and efficiency is improved (Kirchler et al., 2008). Thus, another question that examines the variable of taxation has to do with the level of service and another with the quality of work of tax authorities.

Additionally, an important factor of service is the speed of responding to the requests that reach tax authorities either live or digitally. The objective of speed increase and quality of service is also included within the national strategy for Administrative Reform 2017-2019 of the Greek state (Ministry of Finance, 2019). It is important for citizens to feel that their tax authorities serve them right and efficiently, with respect and fairness (Feld and Frey, 2007; Pitters et al., 2007). Thus, it was hypothesized that the effectiveness of tax authorities should be measured. Finally, the audit mechanism of audit authorities and the independence of the body must be examined.

Financial framework reliability

The tax system of Greece is directly connected to the accounting print of the financial results of businesses and citizens' income. The tax system, especially in periods of fiscal shortages that serves the needs of the state. Thus, the need to study the reliability of fiscal system, as

responsibility of the auditors is to protect and maintain the authority, the reliability, the professionalism and the integrity of the audit (Makkawi and Schick, 2003).

In order for this to happen the ability adequacy of audit authorities based on their educational training, their distinction for principles and values that are related to the transparency and the demonstration of skills needed for them to exercise their profession (Eilifsen, 1998). The fiscal framework is also judged by the social justice that discerns the tax system. Also, the reliability of the fiscal framework is judged by the existence of clarity to the case law and legislation that has to do with the enforcement of taxes. The State may lose revenue as a result of tax misconducts, wrong transfer invoicing, risk counterbalance, overuse of tax motives and other systems of tax planning (Sikka, 2017). Personal ethics plays a basic role and tax ethics is a part of personal ethics in the meaning of performance. According to Miller (1999), the decrease of tax authorities' ethics arises from the asymmetry of interests between public and private interest.

Finally, the state should support tax authorities effectively and to provide security to the citizens. The ability of the state to impose efficiently the collection of taxes is one of the founding elements of the governing ability and it is also a driving force of financial development as tax evasion creates distortions and losses in public revenue (Slemrod, 2007). From the literature the study is led to a certain hypothesis:

H₁: The efficiency of tax authorities affects the reliability of the fiscal framework.

Accounting- supported transparency

A basic question is the methods in which accounting standards and different regulations determine the method of application of accounting serve the assurance of transparency. Standards and regulations are continuously improved in order for the transparency grade to be further increased (Hlaciuc et al., 2010). As such, it is important to find the degree to which changes in accounting standards serve transparency.

According to Canibano and Ucieda (2006), with international standards, information is more unified, credible and comprehensive. It is expected that as long as these standards are applicable, necessary corrections and additions will be made in line with the increase of transparency. Additionally, these last years, technology has contributed to the implementation of the standards that exist each time in order to make easier both the accounting and the audit process. As such, it is important to know to what degree has technology contributed to the increase of transparency through the spread of use of accounting information systems.

Finally, related to the connection of accounting with

transparency, the regular publication of financial states of businesses serves the purposes of transparency and timely location of errors or omissions. According to Bacanu (2016), possible investors and the interested parties are informed of the characteristics of financial entity so that investment decisions and other decisions can be made. From the literature the study is led to certain hypotheses:

H₂: Transparency that is supported by accounting influences the efficiency of tax authorities.

H₃: Transparency that is supported by accounting influences the reliability of the fiscal framework.

Modern audit systems

Many businesses seem to choose the path of tax evasion or declare false taxed income. We need to monitor to what extent this concealment damages instead of benefiting these businesses. Modern auditing systems depend greatly on personality, character and professionalism on the side of auditors. According to Bushman et al. (2004) these promote transparency through submission of financial reports, determining high level values and standards, adding reliability to the notifications that they create.

The process of introduction of international accounting and auditing standards, the internationalization of businesses and globalization contributed at a theoretical level to spreading transparency. We need to examine the extent to which internationalization of transactions prevents corruption. According to Brock (2011), the internationalization of businesses and transactions may deter or diminish incidents of corruption as they serve to the harmonization of tax systems of the countries of the transacting businesses.

Finally, it is important to examine the role of the banking system of the country to the maintenance and spread of transparency. According to Bushman (2016), transparency can promote the stability of banks by enforcing the market's discipline on risk taking. Lack of transparency may increase the concern of investors for the value of bank shares and concealment of information and opacity. Thus, we need to check to what degree the bank system advances and promotes transparency so that it encourages businesses that complete their transactions through it to apply it. The study of these four factors as they were identified while studying the literature, is particularly important and should deal with them as a unified total, allowing for the application of a new way of dealing with these notions by citizens, businesses, the audit mechanism each time and the state. It is very important to locate the exact relations and correlations between them. Thus, suggestions of improvement of the auditing mechanism and the tax system shall emerge. From the analysis of literature the study is led to certain hypotheses:

H₄: The modern audit systems affect the reliability of the fiscal framework.

H₅: The modern audit systems affect the efficiency of tax authorities.

H₆: Transparency that is supported by accounting influences modern audit systems.

METHODOLOGY

Questionnaire drafting

The use of literature was used as framework for the questionnaire, as well as a source of information of assessment in combination with interviews with specialists. For the codification of information deductive reasoning was adopted. The theoretical issues that were investigated had to do with the threefold of 1) Transparency, 2) Taxation and 3) Accounting.

A review of the initial deposit of data was realized by the researcher and 5 academics, so as to ensure the content validity (Bollen, 1989; Waltz et al., 2005), together with adequacy and representativeness (Lynn, 1986; Bollen, 1989; Haynes et al., 1995). Specialists were able to make observations and additions, which excluded 7 questions out of 36, as they did not satisfy the content validity, as well as in changes to drafting the questions and the addition of 3 questions. The questionnaire consisted of 4 parts and 36 questions. Questions were formulated to a five-degree scale Likert type. The three parts have to do with the respective 3 variables. The last part consists of questions of demographic characteristics. The population group consists of 364 students and graduates of administrative and financial Universities from Greece. For the purpose of the survey, random sampling was chosen as the most appropriate method as the purpose of the research was to refine information in order to understand the factors that influence the behavior of financial educated citizens towards taxation and transparency, as well as the trends created at this stage.

Data analysis

Descriptive statistical analysis

The frequencies and percentages for personal and demographic data of the respondents are presents here. Table 2 presents the work status of the respondents. Almost half of the respondents are students and graduates (45.1%), a 23.9% are private sector employees, a 12.1% are public sector employees, a 9.6% are freelancers, while a 4.7% are pensioners. Unemployed take the smallest percentage, which were 16 persons in absolute size, which corresponds to a percentage of 4.4%. Table 3 presents the percentages of education level of the respondents.

In matters of accounting, the respondents in their majority agreed to the positive advantages of development of information systems on transaction transparency. However, a big percentage remained neutral about it. This can be correlated to the weakness of some in matters of technology. With the fact that the literature supports in some cases the opposite or the difficulty it creates. For the questions in transparency, the answers do not provide a positive answer that would be explained as trust to the abilities of organizations and motives of the citizens. In contrast however, they do not believe that the problem stems from regulations or tactics. On the contrary, the biggest percentages believe that inadequacy in matters of human staff is imperative in matters of transparency (Lois et al., 2019).

As far as taxation is concerned, a strong belief that the tax system is weak was observed. This can be confirmed by comparative studies between Greek and European or International

Table 1. Exploratory factor analysis results.

Questionnaire data (variables)	Generated factors			
	1 st	2 nd	3 rd	4 th
How do you assess the quality of work by tax authorities? (TAE).	0.820			
How do you assess speed of work by tax authorities? (TAE).	0.806			
How do you assess the sufficiency provided by tax authorities (TAE).	0.776			
What is the level of trust in Greek tax authorities (TAE).	0.696			
How do you assess the Independence of the Independent Authority for Public Revenue (TAE).	0.683			
How do you assess the impartiality of Tax authorities (TAE).	0.661			
How do you assess the comprehensiveness of the tax legislation (FFR).		0.726		
How do you assess the accordance of tax and personal ethics (FFR).		0.699		
How do you assess the efficiency levels of cooperation between security and audit authorities support by the state (FFR).		0.653		
How do you assess the Taxation Social Justice levels (FFR).		0.653		
How do you assess the adequacy of audit authorities (FFR).		0.501		
To which extent the introduction of foreign (International) accounting standards and regulations helps with transparency? (AAT).			0.773	
To what extent the renewal of accounting standards and regulations helps with transparency (AAT).			0.759	
To what extent the development of technology (accounting information systems) improved the transparency of transactions (AAT).			0.453	
To what extent the regular publication of financial data / situations helps with transparency (AAT).			0.437	
To what extent the capacity of an audit body (e.g. IRS) affects the transparency (MCS).				0.714
To what extent internationalization of transactions prevents corruption (MCS).				0.648
To what extent transparency is related to the personality of the auditor (MCS).				0.509
To what extent the bank system favors transparency (MCS).				0.472
To what extent the concealment of data damages financially the businesses (MCS).				0.396
% of Variance explained:			57.63%	

tax systems. It has been observed that the Greek tax system is far more complex in comparison to that of developed countries. It is particularly interesting that the questions show a reduced trust towards Greek audit and tax authorities and high risk of tax evasion. In general, the results cannot be characterized as negative in matters of transparency and effort needs, but the factor analysis which focuses on the factors of problems is interesting. In six cases we notice problems that relate only to taxation and more specifically to units that concern:

- (1) Bureaucracy of tax authorities.
- (2) Taxation Social Justice.
- (3) Increase of taxation as a means of combating tax evasion.

- (4) Possibility of combating tax evasion in a period of financial crisis.
- (5) Citizen trust to the tax authorities.
- (6) Speed of work completion from tax authorities.

However, these divergences may be due to the fact that the assessment itself as a notion includes the subjective element to a greater degree.

Exploratory factor analysis

For the exploration and identification (of the teams) that may be formed by the three examined variables of the questionnaire the exploratory factor analysis was used.

First, the variables were checked with the coefficient Pearson for any presence of their correlation. Initially, the marker K-M-O receives a value bigger than 0.7 and the Bartlett's test is statistically important, a fact that shows that factor analysis can be implemented on the sample of observations. Table 1 presents the results of factor analysis with the method of Principal Component Analysis. Varimax rotation technique has located 4 grouped factors, with eigenvalues >1. The four factors interpret the 57.63% of the total variability of data.

The data of the questionnaire excluded by the factors did not show factorial loads >0.4. Additionally, communalities that determine the size of variability of variables interpreted by each data of the questionnaire are big (≥ 0.50). An element maintained in the fourth factor had to do with the

Table 2. Reliability control.

Factors	No. of variables	Cronbach's alpha
TAE	6	0.875
FFR	5	0.814
AAT	4	0.635
MCS	5	0,557
All variables	20	0.73

Table 3. Pearson coefficient value.

Dependent variable	Independent variable	Value p
TAE	AAT	0.202
TAE	S_AI	0.276
FFR	AAT	0.205
FFR	S_AI	0.297

question regarding the extent to which concealment of data hurts businesses financially even though its value was slightly below 0.4 (0.396) The element maintenance is explained as it initially explains in a better way the sample, while at the same time it is confirmed by literature research.

The six first elements that seem to correlate to the characteristics of the Greek tax and audit authorities, have to do with the way the participants understand the method of operation of the tax authorities and was consequently named "Tax Authority Efficiency" (TAE). The second factor was given the title "Fiscal Framework Reliability (FFR)" and it consists of five elements of connection between ethics and justice of the fiscal framework of tax services provision. The third factor, "Accounting Assisted Transparency (AAT)", includes four elements, which show the assistance of the modern accounting tools (IAS, technology, Disclosure) to transparency. Finally, the fourth factor (five elements) has to do with the auditor and the current auditing service in matters of subjectivity, everyday mechanisms and modern difficulties Modern Audit Systems (MCS). Factor analysis presented strong factors where 20 grouped data distributed to the four theoretical fields of literature review were maintained at an important degree, transferred to the final factors. As construct validity of measurement model and the reliable synthesis of factors have been confirmed, we can develop the model of structural equations.

By examining existed literature and the statistical analysis, correlations were created in order to confirm or reject their plausibility. It arises that the second, third, fourth, and fifth research hypotheses are not confirmed. A possible cause for this result is that one the one hand one or more factors may operate as mediators or regulators for the relations that were confirmed in the end and are analyzed below and are not a pair of codependency and interaction. Another possible cause may be the fact that MCS are not affected either by the TAE or the reliability of the FFR but since the respondents see them as identical notions they provided similar answers to the questions that corresponded to these variables.

However, by these results it arises that two of the correlations were found significant as shown in Figure 1. More specifically, it arises that there is a relation between the efficiency of the TAE and the reliability of the FFR resulting to the confirmation of the third research hypothesis. A possible explanation for this result is that there is no separation in the mind of the respondents between the tax authority and the fiscal framework.

On the contrary, there is the underlying notion that there is trust to the fiscal framework as a group of rules but not to its dynamic. One could argue that the reliability of the FFR symbolizes something static which is affected by the efficiency of TAE due to the human-centered character of this factor as well as due to the fact that it is supported by the same characteristic persons. Also, it was found that there is a relation between transparency that is supported by accounting (AAT) and MCS, confirming the sixth hypothesis. The accounting system secures, with a better registration of transactions, better audit results, as the reliable accounting files correlate with the respective bank files. They are used more easily by auditing bodies, while at the same time the smooth business operation is ensured and the accounting print of the processes of the business-organization is harmonized with the international audit standards and the international business activity. This is due to the fact that it is expected from a business to be consistent with international and domestic practices.

In this part it was considered useful to compare the results of the correlation checks between the four that were realized for the purposes of the analysis. By the comparison of the results with the use of the correlation coefficient Kendall's tau_b as well as with the use of the coefficient of Spearman's rho, it is indicated that there is a weak positive relation (0.3 up to 0.7) to a level of statistical significance $\alpha=0.01$ between the following factors:

- (i) TAE and FFR (value 0.460 Kendall's tau_b, value 0.587 Spearman's rho), and
- (ii) AAT and MCS (value 0.309 Kendall's tau_b, value 0.397 Spearman's rho)

Correlation analysis

From the correlations table with the use of the correlation coefficient Kendall's tau-b and the correlation coefficient Spearman a positive correlation arises between the variables TAE and FFR with values of the aforementioned variables 0.460 and 0.587 respectively at a level of statistical importance $\alpha=0.001$. Between the rest of the variables as it arises from the respective table the correlations are few or non-existent.

Regression analysis and correlations study

From the analysis of regression it arises that the aforementioned analysis of correlation is verified. More specifically, in the cases below, the value of the coefficient Pearson is set out in Table 3. Consequently, due to the low value of the coefficient, the aforementioned correlations are considered few or non-existent. The following two correlations are considered strong. More specifically:

(i) Dependent variable TAE with FFR independent variable

When examined, the dependent variable of TAE with FFR as independent, a positive correlation arises (value $p = 0.611$ at a level of statistical importance $\alpha = 0.001$). The typical error of the evaluation is 3.548.

The table ANOVA shows the total importance of the model. $F=215.250$ is statistically important at a level of statistical importance $\alpha=0.001$. Thus, the model is statistically important. T-test examines the importance of coefficient b. T value is 7.919 which is equally important at a $\alpha=0.001$ level. Besides, the values tolerance (1.000) and VIF (1.000) show that there is no multicollinearity. Additionally, values eigenvalues do not refer to a problem of multicollinearity (they are not near value 0). Additionally, from the histogram we can see a normal distribution of the remnants, a fact that is also confirmed by the diagram of the normal probability plot.

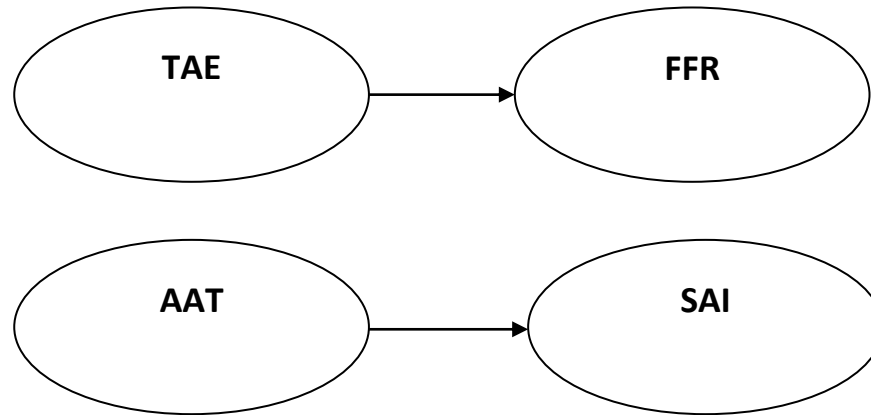


Figure 1. The causal relations between hidden variables.

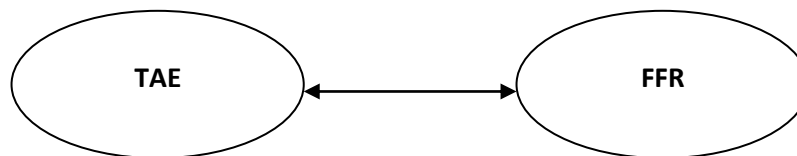


Figure 2. The speculated causal relations between hidden variables.

(ii) Dependent variable FFR with TAE independent variable

The dependent variable of TAE with FFR independent a positive correlation arises (value $\rho = 0.611$ at a level of statistical importance $\alpha = 0.001$). The typical error of the evaluation is 2.884. ANOVA shows the total importance of the model. $F=215.250$ is statistically important at a level of statistical importance $\alpha=0.001$. Thus, the model is statistically important. T-test examines the importance of coefficient b . T value is 10.143 which is equally important at a $\alpha=0.001$ level. Besides, the values tolerance (1.000) and VIF (1.000) show that there is no multicollinearity. Additionally, values eigenvalues do not refer to a problem of multicollinearity (they are not near value 0). Additionally, from the histogram we can see a normal distribution of the remnants, a fact that is also confirmed by the diagram of the normal probability plot.

Of the six hypotheses which inspired this study it seems that only one has specificity. Hypothesis H_1 , "The Efficiency of tax authorities and reliability of fiscal framework" shown in Figure 2, demonstrates a reciprocal relation between TAE and FFR. This can be interpreted as the fact that efficiency of tax authorities influences but is also influenced by the reliability of the financial framework of the country where it exercises its activities.

DISCUSSION

The results show that in accounting issues the respondents in their majority agreed to the positive advantages of development of information systems on transaction transparency. However, a big percentage remained neutral about it. This can be related to the weakness of some towards technology despite the fact

that one would expect a bigger reaction to it by showing an improvement compared to the literature.

The negative reaction of the participants towards transparency suggests a lack of trust, but not however towards regulations or policies. On the contrary, a big percentage considers that inadequacy in matters of human staff is the real problem behind lack of trust to the ability of audit techniques imposition and thus success of transparency. The aforementioned seem to be confirmed by respective studies such as the one of Lois et al. (2019).

On taxation, it has been observed that the Greek tax system is far more complex in comparison to that of developed countries. It is particularly interesting that the questions show a reduced trust towards the Greek audit and tax authorities and high risk of tax evasion. The results cannot be characterized as negative in matters of need for transparency and effort, but factor analysis presents a particular interest.

Cases as such of bureaucracy, financial crisis that affects everyday life and trust towards tax authorities are important issues that seem to affect the citizens' judgment. However, these divergences that are caused by these issues may be due to the fact that the assessment itself as a notion includes the subjective element to a greater degree. "The Efficiency of tax authorities and reliability of fiscal framework", demonstrated a reciprocal relation that can be interpreted as the fact that efficiency of tax authorities influences and

is also influenced by the reliability of the financial framework. Even if this admittance seems to be reasonable and expected, the inability for creation of strong correlations between the rest of the factors subject to the function of accounting and audit processes raises serious questions. The broadening of factors to sections of economy as well as to behavioral science is deemed necessary in order to be able to discern practically the extent to which auditing and transparency have been set aside by cultural and behavioral factors.

The respondents believe that the existing rules are correct but are not adequate as the implementation and improvement of operations of the fiscal framework and tax audits fall under the efficiency of tax authorities as well as to the quality of their work. Thus, citizens consider that the adequacy of tax authorities is subject to the reliable interpretation of the laws and not the opposite that is the law to impose the efficiency of tax authorities.

Additionally, we notice that the modern business and audit environment remains a steady set of values and instead of this affecting accounting transparency, there seems to be an opposite tendency, that is the implementation of a transparency supported by accounting seems to push authorities and business to reach the level where the international dynamic of audit mechanisms are already in.

Conclusion

Based on the results presented and the relations that arose between the factors under study, one can conclude that the trilogy of business life needs to be handled in a different way at a central and maybe a European level as well, so that they can be handled as one notion with three dimensions. More specifically, a relation between efficiency of tax authorities and reliability of fiscal framework was found. This means that the bigger the clarity and precision of the fiscal framework the more the work of the auditing authorities is made easier and at the same time their efficiency is improved. Simultaneously, modern audit systems used by tax and audit authorities are related to the transparency that is supported by accounting, a fact that means that the more expensive these systems are and the more they serve brevity of execution of the audit works, the more transparency is favored.

These conclusions lead to a different dealing of the notions of taxation, accounting and transparency. The researchers of future studies can use the results of this study and use its conclusions in order to locate even more relations that connect these two notions through different factors so that a new framework of handling these with a unified method may be created. This study confirms that accounting and tax systems can be handled in a unified way and in fact this would be useful at a European Union level, creating a kind of scale economy for businesses as well as for citizens by pushing them to

operate them in the same way in all member states by favoring comparability and advancing transparency.

Research complications

This study contributes positively to the study of three examined variables - transparency, accounting, taxation - as a unified notion and variable in Greece as well as in the European Union and opens the path to dealing with these in a completely different way compared to the one currently applied. In particular the study demonstrated that the efficiency of tax authorities influence but is also influenced by the reliability of the financial framework of the country where it exercises its activities. The relationships between these factors may lead to better financial and transparency related results for states with complicated legislature systems, in regard to efficient taxation with the corroboration of accounting supporting the private and public sector.

Research limitations

The display of objective opinion of the participants in the study was found to be extremely difficult, as the questions of a questionnaire were completed based on the subjective opinion of the person each time and not only with objective criteria. The paper contributes positively to the study of transparency, accounting, and taxation as a unified notion in small developed countries. It demonstrates hidden complications that could generate from regional or educational differences.

Suggestions for future research

This study has laid the foundation for future studies which can examine these three variables also for other, European (or not) states, so that comparable results to this study can arise. The broadening of economic factors as well as behavioral science is deemed necessary in order to discern the extent to which auditing and transparency have been set aside by cultural and behavioral factors as seen in cases of taxation ethics.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Creative accounting and investment decision in listed manufacturing firms in Nigeria

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Creative accounting involves the manipulation of company's records toward a predetermined target. Financial information manipulation is usually aimed at misleading the users of financial reporting through the provision of information that affects their decision making. This study evaluated the effects of creative accounting on investment decision in selected listed manufacturing firms in Nigeria's real sector for the period of 2007 to 2017. The study was empirically carried out by extracting related data from CBN statistical bulletin and NDIC annual reports for the period on which regression analysis was used. The result revealed a positive but insignificant effect of creative accounting on investment decisions in listed manufacturing firms in Nigeria's real sector as it reflects in the adjusted R^2 of 0.742983 or 74.30%. The study therefore concluded and recommended that proper corporate governance should be applied to ensure that creative accounting is used for stakeholder's benefits.

Key words: Creative accounting, investment decision, stakeholders' interest.

INTRODUCTION

Today's financial accounting reports focus on providing relevant, reliable and timely financial information to stakeholders who use it to make critical financial decisions (Obara and Nangih, 2017). Financial accounting reports are meant to provide financial information so that stakeholders and other users of such information can use it for informed decision. However, current accounting practice allows a degree of choice of policies and professional judgement in determining the methods of measurement, criteria for recognition and even the definition of the accounting entity. The exercise of this choice can involve a deliberate non-disclosure of

information and manipulation of accounting figures, thereby making the business appear to be more profitable and financially stronger than it is supposed to be. With this practice, users of accounting information are being misled and this constitutes a threat to corporate investment and growth (Akenbor and Ibanichuka, 2012; Osisioma and Enahoro, 2006).

Nangih (2017) argued that financial statements are signposts which direct users on the path of decision making. Such important reports upon which financial decision are based are expected to be reliable, understandable, comparable, transparent and free of bias.

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The manufacturing sector is a critical growth driver for any country. The sector is regarded as a basis for determining a nation's economic efficiency, notwithstanding there exist gross under-performance of the real sector, particularly manufacturing firms. Firms are expected to meet shareholder's expectation because shareholders are concerned with firm's long term survival.

As a way to preserve the value of principal-agent relationship, financial statements may be distorted by directors to achieve a targeted objective (Bowen et al., 2008). However, inadequate or misleading income disclosure may result when income is deliberately and artificially presented (Ashari et al., 1994). Also expenses can be postponed or understated, which has the same effect as misleading income disclosure. Financial statement is arguably the most useful and important to all users especially for the shareholders or investors in decision making process because they can obtain useful information about the effectiveness of the organisation (Khamangy and Sadeeg, 2015).

Creative accounting may lead shareholders and investors to have inadequate information when evaluating organizational effectiveness. The Cadbury saga in Nigeria revealed a significant overstatement of its financial figures over several years. The unpleasant circumstances are similar to Enron's case in the United States of America, where the company, which rose to the peak as America seventh largest company in just fifteen 15 years, was discovered to have manipulated the company's profit (Amatorio, 2005). According to Sanusi and Izedomi (2014), the challenge of creative accounting is the conflict of interest among the various stakeholders in business. The conflict is so wide as it is seen in the situation where, management's interest lies in the payment of less tax and dividends as against the shareholders' interest of getting more dividend and employees interest of earning better salary and higher profit share all at the same time. However, creative accounting satisfies one group's interest at the expense of the others.

According to Fizza and Qaiser (2015), corporate governance is expected to be able to control the practices of creative accounting because transparency in the financial reporting is of utmost importance as individual, potential investors, creditors and regulators have to make investment decisions based on corporate published financial reports (Wokukwu, 2015). Aside from corporate governance, the activities of the external auditors should also guide against creative accounting, if done properly. There are both positive and negative perspectives of creative accounting practice. Both the management and the owners of the firm may benefit from creative accounting practice. According to Gabar (2015) and Gaara et al. (2015), the misuse of creative accounting techniques worries users of accounting information as it also affects the reliability on the financial

statement.

Several authors have tried to investigate the concept of creative accounting and the various techniques used by management to manipulate financial statements. However, the impact of creative accounting practices on shareholders investing decision has not been given much attention. Moreover, most studies on creative accounting are of foreign origin (Fizza and Qaiser, 2015). It is against this background that this study investigated the effect of creative accounting on investment decision in listed manufacturing firms in Nigeria (Appendix Table 1).

LITERATURE REVIEW

This section is made up of conceptual review, theoretical framework and empirical review.

Conceptual review

Creative accounting involves both performance statements and financial positions manipulation. Accounting manipulation is the deliberate alteration and falsification of financial information to satisfy the management with the intention to deceive users either by creating conceivable position of the firm to outsiders or satisfying the expectation of owners of the organisation. According to Paolone and Magazzino (2014), accounting manipulation can be categorised into two separate groups: creative accounting (by maintaining the legitimacy of accounting practices) and accounting fraud (by violating the accounting policy and principles or earnings manipulation). Creative accounting also referred to as income smoothing, earnings management, earning smoothing, financial engineering and cosmetic accounting is one of the emerging issues in financial reporting. Stolowy and Breton (2004) described creative accounting as an assemblage of procedure in order to change the profit by either increasing or decreasing the financial record.

Farlex (2012) defined creative accounting as the practice of recognizing revenue as well as manipulation of expenses in a way that makes a company appear better than it actually is, while still conforming to the Generally Accepted Accounting Principles (GAAP). In support of this definition, Ali et al. (2011) submitted that creative accounting practices are done with the intention of making the financial statements appear better and financially stronger, on one hand, or financially weaker, on the other hand, depending on management's desire.

Ezeani et al. (2012) posited that creative accounting was responsible for various financial crises and portend a serious challenge to the accounting profession. They further argued that when creative accounting is done with extreme negative intentions, it affects the credibility of financial statements and decisions of its users. This is

because the accounting principles and standards are manipulated to hinder the reliability, objectivity and comparability of such statements. Hence decisions based on such financial reports may be misleading and faulty.

Investment decisions

Investment decisions or analysis needs to do with an effective investment of capital (Pandey 2005). Investment decisions concern the distribution and utilization of resources and fund for future returns (Chen, 2013). The choice on whether or not to make investments is based on the investors' goal; the capacity to finance the investment and how to fund the investment. For a good investment decision, the investor needs to see, completely and correctly understand the possible opportunities of the investment and this investment decision should not be rushed as a bad investment decision can lead companies to bankruptcy (Virlics, 2013). Investment decision cannot be made in a vacuum by relying upon the analysis and complex models, thus investors must be watchful and up to date to achieve the desired goals (Farooq and Sajid, 2015).

Entities owe an obligation to completely reveal matters concerning their activities to help investors in making informed choices (Anaja and Onoja, 2015). Investors are rational beings and they apply financial techniques and plan their investments on risk-return basis (Okere et al., 2018). Corporate organizations have the duty to thoroughly plan and distribute their audited report to investors and different clients. Investment decision includes the dedication of current assets into long term projects for future advantages. Investment decision is extremely crucial and caution must be taken in light of the fact that huge, rare and hard-earned resources are included, permanent in nature, hazardous and have long term suggestion which no investor would need to be stood up to with if negative outcomes happened (Patrick et al., 2017).

Wealth creation in a capitalist economy like Nigeria is based on trust. Investors invest their resources in companies and they produce goods and services to benefit the nation as a whole. Good investment decision is based on information provided by organisations to existing and potential shareholders. Therefore, good information provided is essential to effective growth of capital markets and a productive allocation to economic resources. The investor must have confidence in the financial information provided before they can invest their resources and this is largely dependent on availability of accurate and timely reliable information. It is a matter of great concern to parties who are interested in the financial statements of entities when the system cannot be relied on as a result of creativity and deceitfulness of financial managers to deliver inaccurate information to enable investor evaluate the investment opportunities

(Ahmed, 2017).

Investment will lead to increase in employment and development of the economy. This is why it is important to all stakeholders in the development of the Nigerian economy to discourage creative accounting knowing that capital formation process depends largely on investors' confidence in financial information provided. This should be an issue of great concern to professional accountants, stakeholders and federal government to protect investor from fraudulent firms or individuals who may want to defraud investors to enrich themselves. This will make investors more enlightened and able to guard against losing their investment (Essien and Ntiedo, 2018).

Theoretical framework

Numerous researchers have applied different theories in examining creative accounting. This study is anchored on the legitimate theory, the justification of which is hereby explained:

Legitimacy theory

Legitimacy theory was derived from the concept of organisational legitimacy which was defined by Dowling and Pfeffer in 1975. Legitimacy theory posited that organisations frequently seek to ensure that they operate within the limits and norms of their respective societies. The legitimacy theory is a device that supports organisations in implementing, developing voluntary social and environmental disclosures in order to accomplish their social contract that enables the recognition of their objectives and the survival in an unstable environment. Legitimacy theory according to Dowling and Pfeffer (1975) and Guthrie et al. (2007) is a situation which exists when an entity's value system is harmonious with the value system of the larger social system of which the entity is a component. Legitimacy theory results from the model of organisational legitimacy. This theory can be seen from two levels: institutional level (concerned with how organisational structures gain support and empowerment by the community at large which eventually make organisations seem natural and meaningful) and organisational level (concerned with how organisations, through their activities and procedures, establish, maintain, extend and protect their legitimacy).

In support of the legitimacy theory, Mousa and Hassan (2015) submitted that it may help to explain the motivations of companies to engage in environmental reporting and also provide a foundation for understanding how and why companies may use external reports to benefit themselves. By extension, the financial statements are expected to notify the stakeholders on the present financial position of the organisation and also determine whether or not the organisation is a going concern.

Therefore, financial statements are prepared to disclose the present position of a company; it reveals if the business is making profit and providing a return on shareholder's investment. However, prior studies have shown that this is not always the case as creative accounting is sometimes used by companies to manipulate profit figures which distort the true financial health of the company.

Empirical review

Several researches (with only few of them in Nigeria) have been carried out relating to creative accounting, earnings management, incomes smoothening and how it impacts investment decisions.

Ubogu (2019) investigated the effect of creative accounting on shareholders' wealth in business organization: a case study of selected banks in Delta State. The findings revealed a positive and significant relationship between creative accounting and decision making of an organisation. The study submitted that creative accounting affects shareholders' wealth and their various investments decisions because it has a great impact on the share prices of the business organisation. The study suggested that only well and legally audited financial statements should be relied on by shareholders in making important decision.

Essien and Ntiedo (2018) examined the extent to which accounting reports and disclosures provides shareholders and other interested parties with reliable information to permit informed investment decisions and true valuation of firms has remained in doubts. Using survey method, the study revealed that accounting creativity contributes 90% to unfair reporting of firm's operations. Thus, the creativity in those practices is motivated by greed and intention to deceive the public, potential investors and shareholders and increases the rate of enterprise failures at a decreasing rate. However, the study revealed that the many regulations without adequate checks, punishments and rewards creates conducive conditions for creative accounting in providing the opportunity for fantasize and cosmetic financial reporting.

Ahmed (2017) examined the impact of creative accounting techniques on the reliability of financial reporting with particular reference to Saudi auditors and academics using quantitative research design with both primary and secondary data. The finding revealed that the effect of creative accounting cannot be totally eliminated but could be mitigated by proactive corporate governance principles using independent non-executive directors. The study also suggested that statutory auditors can play an effective role in reducing the effect of creative accounting techniques on the reliability of financial reporting.

Umobong and Ironkwe (2016) examined creative accounting and firms' financial performance using

seasonal trading reports. The findings showed that seasonal trading reports had no significant relationship with Return on Assets (ROA), Return on Equity (ROE) and Earnings Per Share (EPS) and not used to manipulate ROA, ROE and EPS. Seasonal trading report had negative relationships with performance variables and they concluded that an increase in seasonal trading report decreases performance. While Nangih (2017) examined empirically the effect of creative accounting practices on the quality of financial statements of oil servicing companies in Nigeria using ordinary least squares regression techniques. Results of the findings revealed that creative accounting practices by oil servicing companies influenced the quality of their financial statements negatively.

Fizza and Qaisar (2015) empirically and essentially investigated the problem of creative accounting in financial reporting. Both descriptive and inferential statistics were used to simplify the results and concluded the findings. The finding revealed that creative accounting plays significant role in financial reporting but has been negatively correlated, which implies that the higher the number of managers involved it, the lower the value of financial information disseminated to investors and other users.

Leyira and Okeoma (2014) examined whether creative accounting and organisational effectiveness has any significant relationship, using correlation statistics, all the hypotheses were found to be statistically significant and positively correlated. However, they found weak evidence of a positive correlation between income smoothening, artificial transaction and market share. Ijeoma (2014) examined the effect of creative accounting on the Nigerian banking industry and attributed the major reason for creative accounting practices in the Nigerian banking industry inflating the operating costs so as to reduce taxable profits. The findings of previous studies lacked consensus, thus showing a research gap which calls for further researches on this topic which motivated this study.

METHODOLOGY

This study adopted *ex-post facto* research design. The population of the study is all the 66 manufacturing firms listed on the Nigerian Stock Exchange (2017). However, to conduct a meaningful research, ten manufacturing firms were randomly selected based on full data availability. Data were extracted from the annual report for the period of 2007 to 2017. The research objective was achieved using the panel ordinary least square method. The panel data method is widely recommended for it is useful when data is a combination of time-series and cross-sectional features.

Model specifications

This study adapted the econometric model of Umobong and Ibanichuka (2016). The functional relationship between the

dependent and independent variable, the disturbance, co-efficient and intercepts for accounting manipulations and financial performance for the purpose of the research is as stated below:

$$INVD = f(CA, FSIZE) \tag{1}$$

$$INVD_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 FSIZE_{it} + U_{it} \tag{2}$$

Where:
 INVD: Investment Decisions
 CA: Creative Accounting
 FSIZE: Firm Size

Measurement of variable

Dependent variable

Investment Decisions: Natural logarithm of shareholders fund

Independent variable

Creative accounting

The dependent variable in this study is creative accounting. However, based on prior literature, it was observed that the Modified Jones model is the most famous and most frequently used model for detecting earnings management. Based on the nature of the study at hand and the data set available, this study used the OLS regression method to analyse the secondary data. The Modified Jones Model was adopted to determine the unrestricted element of accruals as it is easier to handle earnings via credit sales than cash collections, aside from controlling for endogeneity bias in the creative. Also, it is commonly used for addressing problems relating to management unrestricted behaviours. For the calculation of earnings management, the cash flows statement approach is adopted in this study for the calculation of total accruals.

$$TA/A_{(t-1)} = \beta_1 \{1/A_{t-1}\} + \beta_2 \{(\Delta \text{ in REV} - \Delta \text{ in REC})/A_{t-1}\} + \beta_3 \{PPE/A_{t-1}\} + \epsilon_{it} \tag{i}$$

where:

TA_{it} = Total accruals in year t for firm i
 ΔREV_{it} = Revenue in year t less revenues in t-1 for firm I (change in revenue)
 ΔREC_{it} = Receivables in year 1 less receivables in year t-1 for firm 1 (change in receivables)
 PPE_{it} = Gross property, plant and equipment in year t for firm 1.
 A_{it-1} = Total assets in year t-1 for firm in year t-1 for firm I (total assets for previous year)
 β₁, β₂, β₃ = represents firms' specific parameters
 ε = residual here represents the firm specific discretionary portion of accruals.

However, while the right side of the equation represents the non-discretionary accruals (NDA), the net result for the left side of the equation amounts to the total accruals (TA). Nevertheless, taking the difference between the total accruals and the non-discretionary accruals; it amounts to the discretionary accruals (DA) which is basically used in this study to represent earnings management. Hence, the higher the value of discretionary accruals, the more likely the presence of earning manipulation and vice versa as depicted in equation (ii):

$$DA_{i-t} = TAC_{it}/A_{it-1} - \alpha_t [1/A_{it-1}] + \alpha_{1i} [(\Delta REV - \Delta REC)/A_{it-1}] + \alpha_{2i} [PPE_{it}/A_{it-1}] + \epsilon_{it} \tag{ii}$$

Control variable

Firm Size: Natural logarithm of total asset of a firm

Data presentation and analysis

This section empirically reviewed the effect creative accounting on investment decision in listed manufacturing firms in Nigeria for the period of 2007 to 2017. The analyses were conducted using E-Views software. The data were analysed using the correlation matrix and the panel OLS and the finding fully discussed.

Descriptive tests

The descriptive statistics is presented for the variables as shown in Table 1. The result revealed that INVD has a mean of 10.34906bn with standard deviation of 0.762962 while the Maximum and minimum values are 11.23634 and 6.803184 respectively. DA has a mean of 7.199381bn with standard deviation of 0.471315, while maximum and minimum values are 7.951755 and 6.229177 respectively. Also FSIZE has a mean of 24.92738bn with standard deviation of 1.047088, while maximum and minimum values are 26.63037 and 20.21717 respectively. The Jacque-Bera statistics shows the normality level of the data set and INVD and FSIZE are significant at 5% level and DA is insignificant at 5% level of significant.

Correlation analysis

Table 2 shows the correlation between the independent variables. It also reveals if there exists multicollinearity between the variables under study. It can be seen that discretionary accrual (DA) has a positive relationship with firm size (FSIZE). Also, in relation to the 80% multicollinearity benchmark by Okere et al (2018), the analysis shows an absence of multicollinearity.

REGRESSION ANALYSIS AND DISCUSSION

A closer examination of the regression result shows that creative accounting has a positive but insignificant relationship with dependent variable (INVD) (t-stat = 0.887593 and p value = 0.3788>0.05) (Table 3). On the other hand, firm size positive sign was equally appropriate but significant to the dependent variable (INVD) (t-stat = 10.42165 and p value = 0.0000<0.05. thus indicating the quantum and quality of investment decisions for the period under review.

Considering the individual coefficient of the explanatory variables, the result that is explicit in the study is that firm size is a strong factor in the determination of investment decision by manufacturing sector in Nigeria. The coefficient of the variable is significant at the 5% level and also has a positive sign/effect indicating that as firm size increases for the manufacturing companies, creative accounting also increases significantly. Firm size has a significant impact on creative accounting. The R-Squared and adjusted R-Squared are 75 and 74%, respectively. This depicts that 74% of changes in the dependent variable can be explained by the independent variables, while the remaining 26% can be explained by factors

Table 1. Descriptive statistics.

	INVD	DA	FSIZE
Mean	10.34906	7.199381	24.92738
Median	10.53401	7.251986	25.03900
Maximum	11.23634	7.951755	26.63037
Minimum	6.803184	6.229177	20.21717
Standard Deviation	0.762962	0.471315	1.047088
Jarque-Bera	286.3773	2.975580	97.16737
Probability	0.000000	0.225871	0.000000

Source: Researcher Field Survey (2019).

Table 2. Correlation Matrix.

	DA	FSIZE
DA	1.000000	0.478333
FSIZE	0.478333	1.000000

Source: Researcher Field Survey (2019)

Table 3. correlation between the dependent variables.

Variable	Coefficient	Standard Error	t-Statistic	Probability
DA	0.114621	0.129136	0.887593	0.3788
FSIZE	0.605778	0.058127	10.42165	0
C	-5.57659	1.295334	-4.30514	0.0001
R-Squared	0.752502	Mean Dependent Variable		10.34906
Adjusted R-Squared	0.742983	S.D Dependent Variable		0.762962
S.E. of Regression	0.386798	Sum Squared residual		7.779857
F-Statistic	79.05127	Durbin-Watson stat		0.933305
Probability (F-Statistic)	0			

Dependent Variable: INVD

Date: 04/01/19 Time: 13:59

Sample: 2007 – 2017

Source: Researcher Field Survey (2019)

other than the independent variable. The F-statistics value of 79.05127 at 5% implies that a strong relationship exists between the dependent variable and the independent variables, while the p-val. of 0.0000 also implies a significant effect. Therefore, it can be expressed that there is a significant effect of creative accounting (DA, FSIZE) on investing decisions in listed manufacturing firms in Nigeria. The Durbin Watson of 0.93 reflects presence of positive serial autocorrelation in the data set and this is often present in time series data.

Examining the coefficients, the result revealed that discretionary accruals has a positive but insignificant relationship with investing decisions of listed manufacturing firms in Nigeria. This depicts that a unit change in creative accounting (DA) would bring about a

12% increase in investing decisions by shareholders in listed manufacturing firms in Nigeria. The control variable (FSIZE) has a positive and significant relationship with investing decisions by shareholders in listed manufacturing firms in Nigeria.

DISCUSSION

Evaluating the analysis, the R-squared and adjusted R-squared are 75 and 74% respectively. This depicts that 74% of changes in the dependent variable can be explained by the independent variables. The F-statistics is 79.05127 and significant at 1, 5 and 10% level. This shows the statistical significance of the model. Therefore,

it can be expressed that there is a significant effect of creative accounting (DA, FSIZE) and investing decisions in listed manufacturing firms in Nigeria. The Durbin Watson is 0.93 which shows presence of positive serial autocorrelation in the data set and this is often present in time series data.

Examining the coefficients, it can be seen that discretionary accruals has a positive but insignificant relationship with investing decisions of listed manufacturing firms in Nigeria real sector. This depicts that a unit change in creative accounting (DA) would bring about a 12% increase in investing decisions by shareholders in listed manufacturing firms in Nigeria real sector. The control variable (FSIZE) has a positive and significant relationship with investing decisions by shareholders in listed manufacturing firms in Nigeria real sector.

The results of our findings are consistent with the study of Essien and Ntiedo (2018) on the extent of accounting reports and disclosures provision to shareholders and other interested parties with reliable information could permit informed investment decisions and true valuation of firms which found that creative accounting is euphemism and contributes 90% to the unfair reporting of firm's operations. In consonant with our study is the work of Ubogu (2019) which further buttressed the point that a positive and significant relationship exists between creative accounting and decision making of an organization as only well and legally audited financial statements should be relied on by shareholders in making important decision. However, Fizza and Qaisar (2015) submitted that creative accounting plays significant role in financial reporting but has been negatively correlated that means more managers involved in it may decrease the value of financial information.

Conclusion

This study examined the effect of creative accounting on investment decision in listed manufacturing firms in Nigeria. Using panel regression analysis, it was discovered that creative accounting has a positive but insignificant effect on investment decision in listed manufacturing firms in Nigeria. This depicts that there are positive benefits of earnings management which is dependent on the motive of management. A company tries to gain greater investors' confidence by increasing its market share when assessing the financial statement through smoothing of its income.

RECOMMENDATIONS

The following recommendations are made in line with the findings:

- (i) There is urgent need for monitoring companies' activities in order to raise the quality of financial reporting in Nigeria. This can be achieved in determining which accounting manipulation is kept within the limits of legality (creative accounting and which one is violation of accounting principles and policies (Accounting Fraud).
- (ii) Emphasis should be placed on the enforcement of code of corporate governance and ethics by entities, through enactment of relevant law by the legislatures. Also all changes in accounting regulations and standards as well as ethical standards by regulatory authorities should be enforced to prevent entities from employing misleading reporting practices of creative accounting (Nag, 2015; Amat and Gowthorpe, 2010).
- (iii) Proper internal control mechanisms should be put in place by companies, to check the problem of profit smoothing and other creative accounting practices, which had been responsible for several collapses of companies in Nigeria and beyond.
- (iv) The Financial Reporting Council of Nigeria and other regulatory bodies should be more proactive in the discharge of their duties, as this will check negative manipulations of financial information by preparers for selfish gains.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Appendix Table 1. Financial Scandals in Developed and Developing Countries.

S/N	Financial scandal	Reason
1.	FLOWTEX (2000) in Germany	Creative accounting: bogus lease dealings
2.	HIH INSURANCE - AUSTRALIA	Stock market manipulation, Rapid expansion, complex re-insurance arrangements, under-pricing, self-dealing
3.	ONE TEL - AUSTRALIA	Creative accounting (fictitious account receivables, understating bad debts, repatriating money from overseas to disguise financial information), poor corporate governance, insider trading, strategic mistakes, wrong pricing policy, unbridled growth
4.	Enron - UNITED STATES	Creative accounting (mark to market accounting; special purpose entities), aggressive trading.
5.	CHIQUITA BRANDS INT - UNITED STATES 2001	Unethical activities (paying terrorists for protection)
6.	KMART - UNITED STATES 2002	Overstating profit and reported earnings, violation of materiality and conservatism principle
7.	ADELPHIA COMMUNICATIONS - US	Mismanagement, cash manipulation, off balance sheet debt, inflated earnings
8.	ARTHUR ANDERSEN - UNITED STATES 2002	Auditors negligence, obstruction of justice
9.	PARMALAT - ITALY 2003	Creative accounting
10.	MG ROVER GROUP - UNITED KINGDOM, 2005	Manipulated assets and income numbers
11.	BAYOU HEDGE FUND GROUP - UNITED STATES, (2005)	Overstating earnings and reported gains, misappropriation of clients assets
12.	AFRIBANK PLC - NIGERIA, (2006)	Account doctoring with the knowledge of the Board of Directors and the professional advice of the external auditors, Akintola William & Deloitte.
13.	CADBURY NIGERIA PLC - NIGERIA, (2006)	MD's connives with the Board to use stock buy backs, cost deferrals trade loading and false stock certificates to manipulate its financial report
14.	MR. ABDULRASHEED MAINA - NIGERIA, 2017	Money Laundering and contract fraud
15.	SKYE BANK PLC -NIGERIA, (2016)	Creative accounting – financial reports manipulation
16.	OCEANIC PLC - NIGERIA, 2010	Creative accounting - misappropriation of depositors fund
17.	NIGERIAN STOCK EXCHANGE - NIGERIA, 2013	Corporate Governance issues

Source: Researchers' Compilation 2019.

Full Length Research Paper

Information technology and the accountant today: What has really changed?

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One of the major advancements in information technology (IT) is the use of IT tools to perform accounting functions and processes. In this paper, we provide discussions on how IT has affected the accountancy profession. We argued that the traditional duty of accountants is the preparation of financial statements, and consequently, several tasks are carried out throughout that function. In the pre-IT era, accountants were faced with delays in transaction processing and reporting, continuous errors and misstatements, and difficulty in storing large data on papers. However, following the emergence of sophisticated IT tools, accountants in the IT era are now able to prepare and present financial statements more timely and accurately. The availability of the internet has also increased access to financial reports by external users. This paper further argues that in light of the continuous advancements in IT, future accountants and accounting processes are likely to; be cloud-based, communicate with and through Artificial Intelligence machines; invest in Big Data and cyber-security, and explore the potentials of Virtual Reality and Augmented Reality in meeting users' information needs. Hence, accountants and accountancy firms are advised to embrace new IT skills and tools, and keep up with technological trends.

Key words: Accountant, information technology, accountant, information technology, cloud computing, artificial intelligence and the big data.

INTRODUCTION

It is not debatable to say that a lot has changed in the accounting profession in the past few decades, especially following the emergence of information technology (IT). In fact, the use of modern IT tools to perform accounting and financial reporting functions is one of the most recent breakthroughs in technology that has really affected the profession. Technology has changed the traditional accounting system which was previously characterized by series of paper-based processes that required longer

periods into an entirely new IT-based model that gets the job done more effectively, efficiently and timely. Today, technology has successfully penetrated the business world and there is hardly any aspect of business that is not automated- such that, as simple as placing an order for materials required for production, the use of IT in this aspect has automated the inventory control system and hence, machines now independently place (Ghasemi et al., 2011) orders at certain re-order levels even without

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frequent intervention from management. This and many more file-related worries of accountants have been completely erased by technologies today- and these technologies are still evolving, which raises a lot of questions about the position of accountants in this IT era.

Traditionally, accounting is the art of recording, classifying and summarizing and reporting information (in terms of money, transactions and events), and interpreting the results in a manner that will facilitate decision making by users (Dandago and Rufai, 2014). Accounting as a profession has also been conceptualized as an organized system of activities that collects, measures, recognizes, processes and reports financial information about an economic entity (Ballada and Ballada, 2011). The accounting system works in cyclic manner- collecting information on transactions and events through various documents issued and received. These documents are traditionally referred to as source documents,-carrying information that accountants collect and compile into the year-end- financial statements that are useful to internal users (that is, management and employees) and external users for the purpose of decision making (Hall, 2012). However, traditionally, the accounting process encompasses a lot of tasks that require time to complete, and given that organizational operations are continuous- the responsibilities accountants have become demanding. Furthermore, apart from providing information for external users, accountants are also obligated to provide information for internal consumptions. One can begin to imagine how cumbersome the traditional or file-based accounting system would have been.

However, advancements in IT have undeniably improved the accounting system, and in turn transformed economic life. Computers and other digital IT tools have increased office productivity, facilitating quick exchange of information, enabling collaboration with distant business partners, and the collection and analysis of data. Now, every part of the accounting process has been automated. From the point of transaction, recordings and processing of periodic information to preparation of final financial reports, accountants now depend on these technologies to provide the required information that will facilitate the reporting process (Lim, 2013).

When we talk about technologies, it is important we demystify the concept to facilitate its contextual usages. Technologies may be in form of hardware (physical devices through which accountants input data, process the data and obtain information in form of reports), or software (computer programs installed into the hardware, to enable accountants perform their tasks effectively and efficiently). Accountants today depend on both hardware and software technologies to carry out major accounting functions and also ensure timely reporting, and this has also inspired the creation of highly sophisticated technologies deployed for collection, processing and

storage of financial information.

Today's accountants are exploiting emerging technologies to help them complete their tasks more effectively, efficiently, accurately and timely or simply: from the incised clay tablets of the Sumerian scribes, through the adding machines of the 19th century, to the calculators and computers of the 20th century. However all of these technological developments were simple propositions by comparison with the well sophisticated current technologies that are now rapidly reshaping the accounting profession in general, and accountants in particular. Accountants in practice are now changing the ways in which they communicate and collaborate with stakeholders they work with and for, shaping new working patterns that are technologically driven, and redefining their knowledge to cope with new demands (ACCA, 2013).

Many studies (Salehi and Torabi, 2012; Dandago and Rufai, 2014; Shirzad and Nikzad, 2014; Al-Zoubi, 2017) have provided evidences on the significance of these technologies in the accounting profession and a lot has been said of the benefits of these technologies to accountants in practice. However, not much has been said about how these technologies have really affected accountants in practice today- in terms of the specific changes that these technologies have made in the accounting profession and how these changes affect accountants in practice. This paper however applies theoretical approach to the concept of information technology, how these technologies have affected the routine of accountants today, and how accountants around the world are trying to cope with the significant changes in their tasks. The remainder part of this study will be organized into discussions on the implications of information technologies for practicing and aspiring accountants.

LITERATURE REVIEW

A number studies have provided evidence on transformational effect of information technologies (IT) on the accounting profession and the way accountants discharge their responsibilities. However, for the purpose of this study, we will review few of these studies as they relate to the current discourse.

Al-Zoubi (2017) provided evidence on the title "*The Effect of Cloud Computing on Elements of Accounting Information System*". The paper employed a descriptive approach implemented through the collection of prior literatures on cloud computing and information technology, and their impact on the accounting information system. However, based on the literatures reviewed, he concluded that cloud computing reduces the size of the enterprise in terms of the building and the offices because they allow property anywhere without management commitment to a specific location; improves

operational performance in terms of facilitating the completion of operations and accurate accounting operations; and it the use of software and physical equipment without necessarily buying the software and install it on their computers.

Nwakoby et al. (2015) also did a study titled "*Information Communication Technology (ICT): A Panacea for Accounting Practice in Nigeria*". The paper investigated the application of Information and Communication Technology (ICT) in efficiency and speeding up of the accounting process, and how these technologies have ensured efficient delivery of accounting works. Survey method was adopted and questionnaire was the major source of data collection. Data collected were analyzed with five point Likert scale and ANOVA was used to test the formulated hypotheses with the aids of SPSS version 20.0. From the results obtained, it was discovered that ICT application has a positive effect on the efficiency of accounting practice, specifically in the areas of ensuring timely delivery of accounting works in Nigeria. Hence, the authors encouraged accountants and accounting firms to incorporate ICT in all aspect of accounting practices for effectiveness.

Also, Dandago and Rufai (2014) did a study on "*Information Technology and Accounting Information System in the Nigerian Banking Industry*". In this paper, the authors argued through findings that the use of information technology can improve performance by reducing operational cost, facilitating transactions, relevant in simplifying issues and in the provision of quality information, and thereby recommends that Nigerian banks should invest more in IT tools for efficient service delivery and profitability. This finding conforms to the arguments of Moorthy et al. (2012) in their study titled "*Application of Information Technology in Management Accounting Decision Making*". This study also indicates that IT has major impact on operational costs, and reveals that IT can improve the efficiency of the accounting department, thereby producing result effortlessly, timely and accurately".

Ebenezer et al. (2014) also carried out a study titled "*Accounting in the Cloud: How Cloud Computing Can Transform Businesses*". The study shows that cloud computing can still be applied successfully for accounting purposes. Though cloud accounting may seem not too different from a desktop accounting in nature, but in practice, cloud computing has a lot of ways by which it can enhance accounting. The goal of an accounting information system is to conveniently collect and store data about transactions and events; process such data into useful information for the purpose of decision making; and ensure adequate controls are in place to safeguard the organization's assets. So, given the availability of cloud computing, accountants now have the opportunity to be mobile with everything they do; financial information can no more be delayed as the easy real-time

access provided by cloud computing makes room for continuous reporting (and possibly continuous auditing) Some evidences were also provided by Sacer and oluic (2013) in their study titled "*Information Technology and Accounting Information Systems Quality in Croatian Middle and Large Companies*" which revealed through findings that IT influence the way accounting information system operates, contributes to preparing, processing, presenting, and delivering accounting information. It significantly contributes the accuracy and timeliness of accounting reports and the quality of such reports.

Moghaddam et al. (2012) also provided evidence on "*The Impact of Information Technology on Accounting Scope in Iran*". The findings of the study reveal that information technology increases accuracy in the accounting process and decreases cost of gathering information. It has affected accountants, as they now require new skills in such areas as applied accounting software, excel and access (among others). Furthermore, the study reveals that IT is set to provide the necessary atmosphere for improving the accounting profession and the role-creating more suitable accountants in organizations".

Finally, Salehi and Torabi (2012), in their study titled "*The Role of Information Technology in Financial Reporting Quality: Iranian Scenario*" examined the role of information technology in financial reporting process and the quality of financial reports produced. To achieve this, a questionnaire was designed and distributed to a sample of respondents. For the purpose of testing the hypotheses, T-Test, ANOVA and Duncan's Test were employed. Finally, it revealed the information technology, the financial reporting process as well as the relevance of the resulting financial reports. It was also discovered that information technology enhances the comparability, and diminishes the negative impact of the dominant limitations on the qualitative characteristics of financial statements.

MATERIALS AND METHODS

This study adopts a qualitative design. A comparative analysis was done by collecting prior literatures on various areas of information technologies (IT) and how these technologies have transformed the accounting profession in general and the way accountants (in particular) carry out their tasks. The aim is to provide qualitative evidence on the interaction between accountants and IT through a comparative analysis between accountants in the pre-IT era and accountants in the IT era, as well as predicting what may be expected of accountants in the nearest future. To this end, we reviewed several literatures to support our discussions and also provide the basis for our conclusion.

The accounting profession and what accountants really do

In practice, accountants are either involved in preparing and presenting financial statements or auditing already prepared financial statements to ensure that they reflect a true and fair view of the economic reality being measured and reported. It is important



Figure 1. The Pre-I.T Accountant.
Source: Modified from Whatshappening (2018).

to note that either of these activities requires different processes that accountants have to go through in order to provide the required information for internal and external usage. The argument here is that, using numbers and financial statements, accountants describe the health of an organization (as a whole) or the various parts of the organization. Accounting numbers and ratios tell the story of the business, just like a picture tells a thousand words (Imhanzenobe, 2020) Accountants analyze revenue and profits/losses; supply owners and other users with the required information to make informed decisions overtime. This information forms the basis of a company's year-end financial report and legal filing reports.

Accountants usually operate within the organization by gathering information on transactions and events within a specific period and recognizing the costs relating to these transactions and events in the appropriate books of accounts. This process continues on a daily basis to enable accountants keep track of the financial condition of the business, and evidence of these transactions and events are kept. The accumulated information relating to transactions and events facilitates the preparation of periodic reports by accountants, upon management requests to facilitate decision making.

"The totality of what accountants do within and outside the organization has to do with information. The argument centers on the fact that accountants work with information on a daily basis. They receive information from transactions and events, record these information in the appropriate books, process the information into specific reports to meet internal (management) or external (that is. other stakeholders) needs" (Imene and Egbe, 2018).

At the end of the financial year, all books of accountants are closed and the aggregate figures are compiled into the year-end financial statements. These financial statements are first audited by the internal auditors in line with the established internal control system of the organization, and then the external auditors will audit the financial statements to ensure that they show a true and fair view of the economic reality being measured before such financial statements are released for public consumption. The major tasks of accountants within an organization are simply to; process monthly payrolls, demystify billing invoices and accounting policies to affected staff and clients, ensure the preparation of budgets, with

emphases on revenue, expenses and other core financial items, ensure appropriate review of budgets and expenditures for external funding purposes, prepare the core financial statements at the end of each financial year, interact with auditors (internal and external) in order to complete audit tasks, compile other significant information to prepare off-balance sheet engagements, monitor the input and handling of financial data, ensure and supervise the establishment, maintenance and coordination of accounting and internal control procedures, and recommend and work with IT experts to maintain financial data bases, computer software systems and manual filing systems among others.

Accountants in the pre-IT era: what 'was'

Prior to the information technology age, the accounting process was simply manual-based. At this point, accountants were charged with the responsibility of obtaining and keeping record (in files) of financial transactions and events. These files were often revisited from time to time, and updated manually as changes in business transactions and events may warrant. This process continues until the end of the accounting period when all books will be closed and the financial statements are prepared and made available.

The accountant in Figure 1 is an example of pre-IT accountants who are compelled to implement tasks manually. Most tasks may require the review of several files to be completed and this (among other factors) made the manual accounting system a dilemma for accountants (in particular) and organizations (in general). Other facts about accountants in the Pre-I.T era include the following;

RESULTS AND DISCUSSION

Manual recognition of transactions and events

In the pre-IT era, accountants were required to manually recognize transactions and events on papers in the appropriate books. This means that the transactions or events must meet the measurement and recognition

criteria of any element of accounting were recorded manually (Lim, 2013). Accountants were also required to reflect periodic adjustments which were also made manually. As much as transactions and events were manually recognized in the appropriate books, periodic adjustments for entries were also manually carried out by accountants in the pre-IT era. Here, accountants were forced to manually record and carryout arithmetical adjustments for entries as required by the daily operations of the organization.

Delay in preparation of periodic reports

Generally, one of the major tasks of accountants is to continuously provide management with periodic reports on internal operations- to enable management make strategic decisions. In the pre-IT era, these reports were often prepared manually, and hence, these reports were always delayed due to delayed access to the required information and subsequent verification of this information.

Complicated record keeping due to large number of files

The traditional Accountant is known for “book keeping”, a term that connotes custodian of papers and files. This is because business transactions and events are often evidenced by documents such as invoices, receipts, credit notes and debits notes among others. Hence, this made record keeping by accountants a very complex task, especially for big organizations where large volume of data are received and processed on a daily basis.

It was somewhat difficult for accountants in the pre-IT era to process transactions, as access to documents required to process these transactions were not often readily available. For example, as it may require accountants to determine the credit worthiness of a customer before a credit sale is granted, this transaction may be delayed until the accountant is able to access all credit record of the customer with the organization- a task which may take quite a tussle to be completed effectively and efficiently. When it comes to preparation and presentation of financial statements, this task was often delayed due to the tedious process of verifying all transactions and events, and closing all books of accounts before drawing out the final accountants (Salehi and Abdipour, 2011). Accountants would have to take enough time to verify entries from the point of initiation to the closing figures in order to ensure that information in the financial statements are error-free and without material misstatements.

Continuous errors and misstatements

As a result of the complex nature of accountants’ tasks in

the pre-IT era, financial statements were prone to errors and material misstatements. This can be traced to the point of recognizing transactions and events in the appropriate books and making subsequent adjustments manually.

Larger number of people to adequately meet the information needs of management and external users.

In the pre-IT era, the effectiveness and efficiency of the accounting and financial reporting process was directly linked with the staff strength of the accounting departments and their skills. Hence, the accounting departments were often run by the accountant and other accounting personnel in charge of various aspects of financial reporting such as payroll, asset management and internal control (among others). This was necessarily achieved by large organizations in order to facilitate the accounting and financial reporting process.

Accountants in the IT era: what ‘is’?

Today, the entire accounting and financial reporting process has been automated. Technologies have been designed to enable accountants carry out major tasks and execute complex operations more effectively, efficiently and timely (Shanker, 2013). The numerous tasks completed by accountants in the pre-IT era which required a rigorous process, more personnel and much time have been simplified into technologies that accountants can easily operate. These technologies today are in two forms; the software technologies and the hardware technologies (Abadi et al., 2013). The simple difference between these technologies is that while the accountants interact with the later directly and physically, their relationship with the former is only through the later. Figure 2 shows an I.T accountant working with a computer in an automated office environment. The technologies are further explained in subsequent paragraphs.

Hardware technologies

Hardware technologies are the “physical, tangible devices that form the computer” (Hejase and Hejase, 2011). Accountants are required to effectively perform and complete tasks by directly interacting with these technologies (Ballada and Ballada, 2011). These technologies range from simple devices like smart phones to computers and other more complex devices such as input devices, processing devices and output devices that accountants use in the preparation and preparation of financial statements, and auditors also use in auditing. These hardware technologies will be discussed in further paragraphs of this paper.

Software technologies

These are “program essentials for the startup, control,



Figure 2. The IT accountant.
Source: Shutterstock (2017).

and management of the computer system” (Hejase and Hejase, 2011). These programs actually enable accountants to perform specific tasks or group tasks through the hardware technologies. Some examples of such software technologies are accounting software for payroll, inventory management, enterprise resource planning (ERP) and others.

Accounting software

It is important to note that the combination of software and hardware technologies in the IT-era has changed the routine of accountants and also simplified the accounting and financial reporting process. From the point of recognizing transactions and events to the preparation of the financial statements, the numerous process involved as experienced in the pre-IT era has been simplified with just a click of the button. Today, accountants are able to get access to any information or prepare any form of internal or external report with just a click of the button. The IT-Accountant is now aware of the following;

Personal computers (PCs)

This consists of devices ranging from desktop computers to laptops, tablets and smart phones which accountants now use to collect and process and also report information to users. The emergence of computers and other electronic devices have simplified the tasks of accountants especially in the area of transaction processing, recording, storage of large information,

elimination of files, preparation and presentation of financial statements to users. Today, the accountant has the opportunity of meeting the information needs of all stakeholders in the financial reporting process more effectively and efficiently. Furthermore, the connection of computers through an information system within and outside the organization gives the accountants exclusive access to the right information at the right time.

Internet, intranet and extranet

The intranet is a type of network built to facilitate communication between computers and other electronic devices within an organization. This type of network enables communication and transfer of information between users within a single organization- so accountants are able to get access to information on transactions and events from any part of the organization with just a click of the button. The extranet unlike the former connects computers and other electronic devices between two or more organizations. Extranet is built to facilitate communication and corroboration between organizations- so accountants are able to get access to information on third-party transactions and events. The internet, unlike the other types of network is a network of computers around the world. It gives accountants unrestricted access to external information and also facilitates preparation and presentation of financial statements (Dandago and Rufai, 2014). The internet has made it possible for accountants to implement digital financial reporting, and it has also facilitated distribution of financial reports to all stakeholders.

Accounting software

This is an application computer program designed to execute, manipulate and manage (Hejase and Hejase, 2011) the basic accounting functions through a simplified 3-stage process of input, processing and output. All the processes involved in the accounting and financial reporting process have been built into the software, and therefore, accountants only need a computer device through which the software will work, and the skill required to execute tasks through the software. Furthermore, accounting software can be classified as *low-end* or *high-end*. The low-end software is "all-in-one" software, such that all functions of an accounting system are performed within the software- hence, it is mostly used by accountants in small firms. On the other hand, the high-end software creates a separate module for each accounting function, and each module checks data for correctness, processes it, and updates all relevant accounts, and finally, produces outputs such as documents and reports. The high-end software is often used by large organizations because it enables separate modules such as payroll, fixed assets management, inventory and so on to be handled by separate individuals in the accounting department

Tax preparation software

One of the most demanding aspects of accountants' job is tax planning and preparation. The continuous adjustment in tax laws in Nigeria makes it an exceedingly difficult task for accountants to deal with. Manually, the process has become more difficult and time consuming. Hence, with the availability of tax preparation software to accountants, this task can be performed easily and faster through the computer. As a result, even complex calculations can be performed via computers in a short period of time. It is important to note that some highly sophisticated high-end accounting software provides a separate module for this task.

Auditing software

Like the accounting software, technology has also facilitated the auditing process through the creation of auditing software. This is because if auditors perform auditing functions manually, it takes a lot of time and energy. However, audit software packages are currently available for auditors in low-end (for auditing small firms) and high-end (for auditing larger firms). For example, the trial balance software is a module under the high-end audit software that enables auditors to input the working trial balance, handles all adjusting entries, and automatically computes the adjusted trial balance. Furthermore, these audit software packages can access

customer's files, select a statistical sample of the accounts, and print a working paper sheet.

Word processing

Word processing is computer-assisted creation, editing, correcting, manipulation, storage, and printing of textual data (Ghasemi et al, 2011). Today's Accountants use word processing software to prepare reports, billings, memos, and financial statements.

Graphics software

The use of graphic software enables accountants to aestheticize the financial report. The graphical outputs can be printed on paper or displayed on slides, transparencies, and photos. It is important to note in practice today, auditors and managerial accountants use the graphics software to analyze financial reports into graphs and tables to facilitate decision making by users.

Database management software

One aspect of accountants' task is called record keeping. This means that accountants are custodians of information on transactions and events, and as a firm expands, so does the volume of transactions processed and stored by accountants. The emergence of database software systems has significantly reduced the rate of inefficiencies and redundancies in information handling. In fact, relational database systems such as enterprise resource planning (ERP) depart from the accounting equation method of organizing data- such that it enables accountants to capture both financial and non-financial data, and also, it facilitates storage of large files in simpler forms.

Payment technologies

The emergence of payment technologies (such as Remita) has enabled firms to connect to banks and implement electronic transfer of funds. Hence, firms are able to execute receipts and payments functions electronically, thereby reducing the risks that accountants face by holding cash (Shanker, 2013). The accountant today has been relieved of the burden of carrying physical cash or keeping cash (a function which accountants are traditionally known for).

The adoption of computerized database systems has also facilitated the automation of accounting information system. Accounting information systems equipped with such technologically advanced tools as mentioned above can now perform accounting functions more effectively

and efficiently and at reduced costs. Hence, accountants are now required to work in a digitalized environment with exclusive access to information with the click of a button. As a result of interactions between accountants and technologies (hardware and software), valuable opportunities became available to improve the services delivered to their business clients as a result of reducing and possibly eliminating those repetitive, time-consuming, and menial tasks (Rkein et al., 2019). The following can be observed of accountants in the IT era;

Digital recognition and adjustment of transactions and events

Accountants today recognize transactions and events digitally as opposed to the traditional file-based method. The recognition of transactions and events digitally has also enhanced fast and easy adjustments in accounting figures due to subsequent events.

Timely preparation of financial reports

Today, the combination of hardware and software technologies enables accountants to easily generate financial reports with a simple click of the button on the computer. However, this simplified task required a very long process that involves review of numerous files and a long period of time to achieve generate.

Record keeping and data storage has been simplified

One of the obvious benefits of IT adoption by accountants is the enhancement of record keeping and storage. IT has made it easier for accountants to store large data in simpler forms by converting most documents from paper to electronic forms.

Faster transaction processing

Transaction processing is now easier and faster for accountants in the IT era. For example, the credit worthiness of customer can be determined by retrieving the customer's information through the click of a button (Sacer and oluic, 2013).

Timely preparation and presentation of financial statements

When it comes to preparation and presentation of financial statements, IT has enhanced the entire financial reporting process (Moscove et al., 1999). Accountants (in small firms) are now able to generate final reports quickly and easily with just the click of a button on their computer,

while accountants in large firms are able to access all information required for compiling the final accountants easily and faster.

Improved accuracy and financial reporting quality

The emergence of IT has helped accountants to reduce or eliminate completely the problem of material errors and misstatements in financial reporting (Salehi et al., 2010). The problems of inaccuracy that are peculiar with the file-based accounting system have been completely taken care of (Shanker, 2013). However, one limitation of the IT-based based system is that output depends on input. Hence, accountants must ensure that correct and accurate information are put into the system.

Increased access to financial reports by external users

The existence of special IT tools has enabled accountants to effectively and efficiently make financial reports available to external users such as shareholders, creditors, the media and regulatory institutions. This has been facilitated through the use of internet and social medial channels such as emails, twitter, and Facebook page and so on (Moradi et al., 2011).

Enhanced auditing and investigation

The existence of special IT tools for auditors (e.g. the audit software) has helped to simplify the auditing process, and in turn enabled auditors work effectively and efficiently. Today's auditors are IT-based accountants that execute tasks using computer languages.

Accountants in the post IT era: what 'will be'?

While accountants around the world have witnessed a dramatic change in the ways of doing things in practice, we cannot but imagine what the future holds for accountants in practice. Technologies are evolving every day, and by implication, accountants in practice will continue to witness new technologies that can do more than the existing ones. However, for the purpose of this study, we have gathered evidences on possible expectations for accountants in practice, in relation to technological advancements. This is expected to give accountants a sense of what is to come and how they can prepare towards it (Figure 3).

The cloud-based accountants

This is one of the current technological trends and it has



Figure 3. The future IT accountant.
Source: iStock (2017).

enjoyed wider acceptance in the business world due to the numerous opportunities accompanying its adoption. Cloud computing has been defined as a technological platform that facilitates available, convenient and on-demand network access to a shared pool of configurable computing resources (such as networks, servers, storage, applications, services) that can be rapidly provided and released with minimal management effort or service provider interaction (Wang, 2011; Mell and Grance, 2011). It is simply a computing resource procurement and deployment model which enables an organization to obtain its computing resources and applications from any location via an Internet connection (Chan et al., 2012). The unique feature of cloud computing is its ability to provide a three-dimensional cloud services model, namely: Software as a service (SaaS), Platform as a service (PaaS), and Infrastructure as a service (IaaS). This means that users of cloud computing will be able to reduce costs by eliminating physical infrastructures, and tasks can be executed from any part of the world. Hence, we can boldly say that accountants in the future may be able to perform accounting functions on cloud without being limited by physical structures.

“We foresee that accountants and the organizations they work with and/or for will be exploiting the cloud as a result of the opportunities that comes with it. Accounting systems were among the first software to become available online, and joined by a growing range of business ‘software (ACCA, 2013).”

Cloud-based accounting systems are capable of raising

the prospects of an agile and competitive service delivery. Also, with the increasing reach of the internet, cloud computing is edging closer to ubiquity. In Australia, most accountants have started embracing these technologies; this is also the case for CPAs in the U.S. furthermore around the world, organizations of all sizes and accountancy firms are beginning to recognize its benefits, as increased adoption allows them to reduce their technology infrastructures and move away from expensive hardware storage solutions. Hence, it is expected that in the nearest future, accountants will be fully cloud-based and accounting services will also be fully cloud-based.

Accountants and the big data

One thing is certain of the business world, this is the fact that in the nearest future, following the converging technological trends, the shift from analogue to digital, widespread mobile device adoption, internet-connected systems and ‘exhaust data’ from physical objects (the internet of things), a vast amounts of structured and unstructured data will be created. Hence, this will place more responsibility on future accountants as they attempt to collate, manage and analyze it effectively, for better decisions and to generate a competitive advantage for business. It is also important to note that the technology to achieve this is becoming more accessible and affordable.

“Vendors of software for business intelligence, enterprise resource planning, sales management and more are

adding the capability to analyze vast amounts of data 'in-memory', and cloud-based platforms are emerging to provide on-demand access to the tools that "accountants" need to tap into the 'internet of things' and unlock the power of big data in the nearest future (ACCA, 2013)."

It is important to note that the "big data" is undeniably gaining popularity, as the vast amount of data being collected and stored is reshaping the business world in general. Firms are now creating data-driven goals, measuring these goals accurately through analytics, while many firms are now listing data as an asset. Hence, where accountants can make their mark is with distilling data - that is turning information into actionable insights.

Accountants and Artificial Intelligence (AI)

Artificial intelligence (AI) describes a machine or software that can demonstrate behaviour indistinguishable from that of the human brain. Also, according to Hejase and Hejase (2011), "Artificial intelligence is the sciences of making machines imitate human thinking and behaviour". This is not yet possible but there are many examples of software that can demonstrate limited 'intelligence' (depending on how you define this). Most of us have used software that can emulate the decision-making processes of an expert: lots of software now has expert knowledge built in and the capacity to 'learn' how to improve its own processes and performance. The internet is awash with software agents (bots) that mimic human behaviour as they make independent decisions, learn and interact with each other.

"It is predicted that by 2030, accountants will increasingly rely on the expert knowledge built into software in a range of scenarios. Given that auditors use smart software to automate parts of the auditing process, and there are other specialist applications to help with compliance in areas ranging from financial reporting to international tax (Yanian, 2018)."

AI systems are improving quickly. They are capable of providing results that can be very accurate, and so, superseding human efforts in most cases. However, AI has not been able to replicate the human intelligence (Institute of Chartered Accountants of England and Wales, 2017). Notwithstanding, it is important that we appreciate the strengths and limits of these various forms of intelligence, as this will help build our understanding of the best ways of combining humans and computers to work together effectively. Hence, Yanian (2018) noted that there have been recent emphases on AI by the big-4 accountancy firms as revealed below;

PwC, in their global AI study, discovered that 45% of the world's total economic gains by 2030 will be attributed to product enhancements and stimulating consumer

demands. This is because AI will drive greater product variety, with increased personalization; attractiveness and affordability over time (PwC, 2019).

EY is set to launch its first AI Center in India. This center will bring together teams of multi-disciplinary practitioners, combining expertise in AI, Robotics etc. along with domain experience in sectors to achieve more in the accountancy profession (Electronics Media, 2017).

KPMG is said to have been using innovations from McLaren Applied Technologies (MAT) in its audit processes since 2015. The firm also has an alliance with IBM's cognitive computer known as "*Watson*". This means that the firm has already introduced AI into its operations (O'Neill, 2016).

Deloitte on the other hand already uses an AI platform called "Kira Systems" to enhance its assurance services (O'Neill, 2016).

Accountants and cyber security

As the world is moving to a small global village and more data are made available as discussed earlier (the big data), we cannot over-emphasize the importance of cyber security to accountants. Cyber security is the protection of computers, networks, programs, and data against unauthorized access or attack. Accountants are, by nature, custodians of information, and by implication, they are expected to ensure that such information are secured. Therefore, it is evident that accountants and accountancy firms in the future will be investing in cyber security to protect their interests and the interest of their clients.

"Individuals charged with the responsibility of securing IT systems often face a daunting challenge in today's world full of unguided rapid technological advances," says Frank Colantonio, CPA, CA, CITP, and a director with CPA Canada. Furthermore, a security breach can trigger unpredictable costs, so it is not surprising to see professional accountants wanting companies to dedicate resources aimed at protection" (AICPA, 2015).

Security is the number one issue facing accountants in this IT-era, and it is evident that as accountants' use of technology increases further, investment in cyber security will become inevitable; and in fact, some accountants will be forced to specialize on cyber security, especially for digital reporting purposes. Hejase et al. (2015) argue that as information technology companies are improving the vulnerability of their software and hardware products, hackers, malicious intruders, and above all cyber warriors are targeting the weakest link of the chain: the operating people. Hence, it will be a bad idea if accountants and accountancy firms ignore cyber security and its potential danger. If accountants don't have a plan in place, in all likelihood, their services may be breached at some point in the future.

Accountants and Virtual Reality (VR)/Augmented Reality (AR)

Accounting and financial reporting has been about representing reality with numbers for the purpose of enhancing the decision of those affected by such reality. This means that accounting numbers have been the closest measure of reality prior to this time. However, the existence of virtual and augmented realities and their potentials can be seen as a promising ground for accountants to improve financial reporting. Virtual reality (VR) is simply a computer-generated simulation of a three-dimensional environment or image where a person can interact in what seems like a real or physical way by using special electronic equipment, such as a head-mounted display (HMD) helmet or sensor gloves. A space flight simulator is an example of VR (Bellini, 2016). While VR places a person in an artificial, computer generate world, AR technology combines the real world with images, video and information that enhance or supplement the person's experience.

“As virtual experiences become more immersive and interactive, accountants will face new opportunities and new challenges.” (ACCA, 2013).

With the existence of VR and AR as emerging technologies, it is certain that users' expectations will increase in the nearest future, and one of the resulting effects will be demand for more disclosures (something more than just numbers). Accountants can explore these technologies to provide users of accounting information a closer touch to the economic reality being measured by reporting numbers. Special VR and AR reports can be prepared to facilitate users' understanding of what is, why and what will be- in relation to the reporting entity.

Implication for accountants

Early accountants were awakened by new technologies that reshaped clients' demands and users' expectations, and as a result, many were forced to retirement (to pave way for the new generation “technology-driven” accountants), while others were forced to embrace IT knowledge in order to cope in the industry. This is because as much as accountants cannot control the pace of technological advancements, there is always a way out. The implication of technology for accountants today and those who wish to be relevant in the future is that accountants need to;

Investment in IT knowledge and skills

Following the growth in technology and its capabilities, it has become evident that accounting and finance knowledge and skills are not enough for the accountant

today. There is need for accountants or accountancy firms to invest in acquiring IT knowledge and skills, for the purpose of being relevant in this IT-era, and to be able to withstand the wave of the post-IT era. The accountant of the future will need to know more about technology. In fact, ACCA in 2013 revealed that unless accountants embrace technology they will follow the dinosaur into extinction – individually and as a profession.

Investment in IT Tools

The accountant today needs more than just the ability to get the work done, but the right tools that will enhance the working process. Along with acquiring IT skills, accountants will also need to invest in IT tools that will enhance their work, in order to remain competitive and meet the demand of clients and expectation of users in the future (Salehi and Huisi, 2011). In fact, according to ACCA (2013), it will be no surprise that accountancy firms will begin to give clients mobile applications to access their services and engagements.

Be open to IT ideas

The traditional accountant is known to be a very strict and forward person, not really open or friendly due to the nature of their job and the need to maintain confidentiality. However, the emergence of IT and its importance to accountants have compelled accountants in theory and practice to rely on relationships with IT experts and their supports to get tasks completed effectively and efficiently. Accountants need to be open to ideas from IT experts and software designers in order to solve on-the-job technological challenges.

Be cyber-security conscious

As explained earlier, one of the challenges of IT adoption by accountants is the existence of cyber threats. Hence, accountants must become increasingly aware of this threat and how to ensure maximum data security. This is a very important responsibility, as accountants are now custodians of sensitive information that must be proposed.

Accountants must be trendy

Today's accountants need to be trendy technologically, keeping touch with latest technological advancements that affect their jobs. This is because staying on the job and being competitive requires accountants to do so. For example, it is assumed that by 2020, audits may well be real-time and as a result, accountants will be required to pull data in from business systems and sensors embedded in everything (including from stock to livestock

and even human beings)- (ACCA, 2013).

Accountants must work closely with IT experts

Accountants and Chief Financial Officers (CFOs) will also need to work closely with IT experts and consultants to coordinate multidisciplinary teams for in-depth analysis. This is because accountancy firms (like the big-4) may require the help of IT-experts to complete certain engagements of tasks. In short, big data provides the perfect platform for accountants looking to develop an increasingly strategic relationship with their clients.

Conclusion

We cannot effectively discuss the impact of information technology on the daily operations of modern professional accountants through a single paper. However, through literatures reviewed in this paper, we have been able to create a link between advancements in technologies and changes in the way accountants discharge their professional duties and responsibilities. We identified several ways that IT has improved the accounting process; including digitization of the entire process (Al-Zoubi, 2017); timely preparation and presentation of financial reports (Nwakoby et al., 2015; Sacer and Oluic, 2013); simplified record keeping and data storage (Ebenezer et al., 2014); transaction processing speed and accuracy (Dandago and Rufai, 2014; Moorthy et al., 2012; Moghaddam et al., 2012). We have also presented the accounting profession as one evolving with technology, and as a result, accountants (individuals and corporate) are required to embrace this trend and be equipped intellectually and with the right tools.

At the moment, it seems very clear that, with technological advancements such as cloud computing, artificial intelligence, and virtual reality (VR) and augmented reality (AR) finding their way into the accounting profession, and the resulting big data, accountants in the future will require more than financial literacy (basic accounting knowledge) to meet their professional demands. Therefore, accountants must begin to think IT and invest in IT skills and tools, as they have a significant role to play in this increasingly connected and interconnected business environment. The internet and cloud-based technology resources are reshaping the business world today: from the way we finance, resource and develop new and existing enterprises, to the way we create, buy and sell products and services. Nothing in the future is certain, and the unforeseen interactions between these technologies promise to be both interesting and challenging.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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