THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Empirical Test of Multidimensional Model for Estimating International Financial Reporting Standards (IFRS) Compliance: Perspective of Ghanaian Banks

Isaac Cliford Queku
Ph.D. Candidate, Accra Institute of Technology-Open University of Malaysia, Malaysia

Abstract:
The paper conducted empirical investigation of multidimensional model for estimating IFRS compliance. It has been argued in the literature that IFRS is not a single construct but multidimensional construct and therefore cannot be adequately measured using a single proxy. Owing to this, Queku proposed multidimensional models for estimating IFRS compliance. This paper is seen as a follow up paper to empirical test these models.
The paper uses secondary data from Ghanaian banks between the period of 2008 to 2014. Time varying equality test was employed to test these models. Three main tests were conducted: test of statistical difference between the single constructs, test of statistical difference between single constructs and the multidimensional models and finally test of statistical difference between the multidimensional models. It was found that the individual constructs identified have significant difference between them. It was also revealed that there is significance difference between the single constructs and the multidimensional models. However, no significant difference was found between the multidimensional models. It is recommended that given the differences in the constructs, researchers and accounting experts should measure IFRS using the multidimensional model for consistency in assessment and to avoid mixed results in evaluating compliance. It is again suggested that researchers should use the multidimensional model for IFRS value relevance, economic consequence and contribution studies.

Keywords: *IFRS accounting quality, IFRS mandatory disclosure, IFRS voluntary disclosure, IFRS presentational faithfulness, multidimensional model*

1. Introduction

The accounting literature on International Financial Reporting Standards (IFRS) or International Accounting Standards (IAS) is getting momentum. This is owing to the importance of accounting convergence to stakeholders of the financial reporting world. It is quite essential to understand that international financial reporting convergence is an important issue for regulators of capital market, investors, governments and all other stakeholders who deal with financial information of companies and firms (Queku, 2015).The acceptance of IFRS as harmonised global accounting standards depends strongly on the economic benefits, contributions and value relevance to adopters. These assessments and evaluations require quantitative measure of IFRS compliance.

However, the accounting literature on IFRS/IAS has lacked comprehensive model for estimating the level of IFRS compliance until recently. This has contributed to the diluted application and adoption of IFRS in some jurisdiction as the true value relevance could not be ascertained. Furthermore, the failure to comprehensively estimate IFRS compliance and assess the benefits, contributions and value relevance has made qualitative argument against IFRS compliance difficult to dispute. For instance, uniform application of IAS / IFRS across different countries has been questioned given the various institutional and cultural contexts (Nobes & Parker, 2006). Therefore, estimating the level of IFRS/IAS compliance is dare research area.

In this regards, efforts to measure the level of IFRS compliance have evolved. Some earlier researchers provide estimation of level of IFRS compliance using the mandatory requirements of IFRSs. One of the earliest breakthroughs is the Cooke's dichotomous approach (Cooke, 1992). This compliance estimation assigns equal weight to items required by a particular IFRS or IAS to be disclosed. This approach has been criticised that since equal weight is given to items disclosed, greater weight would be given to standards containing several items. Thus, the Cooke's approach treats standards with several disclosure items as more important than others. The weakness in the Cooke's approach led to an alternative method called partial compliance approach (Al-shiab, 2003). This method assigns equal weights to standards rather than the items to be disclosed. Thus, this avoids the problem of over and under estimation of compliance. Furthermore, Healy and Palepu (2001) also revealed estimated compliance using voluntary disclosures. The authors suggested three proxies for voluntary disclosure measure. These are management forecasts, the Association for Investment Management and Research scores, and self-constructed measures (disclosure indices).

Better still, other researchers have estimated the measure of IFRS compliance using accounting quality. There are a number of methods that have been used to measure IFRS accounting quality. Seyed and Zaini (2013) and Tang et al. (2012) measure the quality of financial information by bringing in some components of auditing and accounting information that can be related to quality of financial reporting. Conversely, Daske et al. (2008) employs implicit measurement techniques for example Tobin's q and cost of capital in measuring the quality of financial information. Prather-Kinsey et al. (2008) also analyse the financial information subject of earnings announcements in their value relevance study in which the influence of quality of financial information on the decisions of investors is assessed via the cost of capital. All these different methods can be grouped into two: auditing based quality measure and earning based quality measure. A third measure of IFRS compliance based on accounting quality is the accrual method. The accrual method directly estimates how earnings produce operating cash flows (see Bharath et al. 2008; Bhojraj & Swaminathan, 2009). There are several measures under the accrual based quality measure: balance sheet adjustment and accrual ratio.

Queku (2016) argued that estimating IFRS compliance from either disclosures (mandatory or voluntary) or accounting quality such as audit based measure, loss recognition, earning management and accrual method imply that these studies have partially estimated IFRS. Queku argued further that the partial estimation could contribute to mixed results about the economic benefits, contributions and value relevance of IFRS compliance. In view of these, Queku (2016) undertook thorough empirical review of accounting literature about the IFRS compliance and current and previous IASB conceptual frameworks. Queku employed content and thematic analysis. The author revealed that IFRS is a multidimensional construct and not a single construct as measured in the literature. Queku (2016) therefore developed comprehensive multidimensional models to estimate the level of IFRS compliance. This study therefore seeks to empirically test these multidimensional models using data from the Ghanaian banking sector. The bank sector is chosen because it is the sector that has embraced IFRS deeply in Ghana either listed or unlisted. This would provide empirical relevance to the model developed. The focus of this paper is in three folds: first is to test the significant difference among the IFRS constructs used in the multidimensional models; secondly test the significant difference between each of the multidimensional models and the individual constructs and finally test the significant difference between the multidimensional models themselves.

2. Literature Review and Hypothesis Development

The literature review is based on empirical measure of the multidimensional constructs identified by Queku (2016). These according to Queku are mandatory disclosure, voluntary disclosure, presentational faithfulness or framework and accounting quality. There is no definite measure of IFRS disclosures. Therefore, researchers have resulted to different means for measuring IFRS disclosures both mandatory and voluntary. The most frequent method for estimating disclosures is the construction of index. The focus of this study is not to discuss in details construction of index, however, it provides account of some of the most frequent compliance index in literature. These are unweighted approach and partially compliance unweighted approach. The details of these approaches and how they are applied are explained as follows:

2.1. Unweighted Approach

This is the commonest approach for determining disclosure compliance index by adopters (Tsalavoutas, 2009). Under this approach, the disclosure index of an adopter is the ratio of the total number of items disclosed to the maximum score required.If a needed disclosure element or issue is indeed disclosed, it is counted as 1 but if it is not disclosed, it is counted as 0. The general term for this is the 'dichotomous' method. The index is termed as an unweighted index since every single item is treated equally.It was originally formed to measure compliance with voluntary disclosures or a combination of mandatory and voluntary disclosures (Marston & Shrives, 1991). Thus, it is up to the researcher take a decision on what needs to be involved in the disclosure checklist and in line with this every single item must be considered separately. The limitation to this approach was identified by Cooke (1992). The author explained that the original estimation approach by the Unweighted is flawed because not all companies have the same disclosure requirements. Based on the fact that certain items might not be pertinent to all companies, Cooke (1992) proposes that it is not absolutely 'dichotomous', and are thus marked as 'not applicable' (NA). The disclosure index for every single company is then worked out by taking the ratio of the sum of items disclosed to the maximum probable score applicable to that particular company:

$$DS_j = \frac{TC = \sum_{i=1}^{n} di}{MA = \sum_{i=1}^{m} di} \qquad (1)$$

Where $DS_j$is the total disclosure score for an adopter or a company, the value of DS falls within $0 \leq DS_j \leq 1$. TC also denotes the total number of applicable items disclosed (di) by company j and finally MA is the maximum Applicable Number of disclosure items for the company j.Although this approach has been mostly used by researchers in literature (See Abd-Elsalam & Weetman, 2003; Glaum & Street, 2003; Hodgdon et al., 2008; Street & Bryant, 2000; Street & Gray, 2001), it still suffers from methodological biases. Notwithstanding the improved role by Cook (1991), there are still more to be done. This approach fails to recognise that the number of disclosures require by each study varies. Thus, whiles some standards require only few disclosures, others require more disclosures. Not recognising this means that standards which require more disclosures are impliedly treated superior over others. Recognising this limitation other writers such as Al-Shiab (2008) have proposed a modified approach to this.

2.2. Partial Compliance

The Partial Compliance (PC) unweighted method is an alternate technique that prevents this implicit bias by the unweighted. This was used by Al-Shiab (2003, 2008) and Street and Gray (2001). This approach stipulates that the level of compliance for each single

company is determined by dividing the sum of the level of compliance every standard by the total number of standards pertinent to every single company. Thus, indirectly, equal weighting of each applicable standard is attained and this prevents the problem of not deliberately giving more weight to standards which require that more be disclosed (Al-Shiab 2003). This implies that, unequal weighting is given to the disclosure items in various standards.

Due to the soundness of this approach, the present paper seeks to employ this method. This approach is also recommended by Queku (2016) making comparison fairly made. The paper disregards the unweighted approach in this article on the following ground: all standards do not have equal number of items to comply. Whiles some require more items of compliance (e.g. IAS 1), others also requires on few (e.g. IAS 2). Therefore, summing up the individual required compliance under all the standards implies that those with more items of disclosures are treated superior to those with few ones. In order to avoid this bias, the study employs the partial compliance unweighted approach. With the partial compliance approach, the disclosure score for each company or adopter is estimated by first dividing the sum of the number of items disclosed under a particular applicable standard by the sum of all items expected to be complied under that standard. The disclosure index is finally measured as the sum of the score under each applicable standard divided by the number of standards applicable. This means that all applicable standards are treated equally.The partial compliance unweighted is presented as:

$$PC_j = \frac{\sum_{i=1} X_i}{R_j} \qquad (2)$$

Where:

PCj is the total compliance scored by each bank and the expected values are $0 \leq PCj \leq 1$.

Xi is also the degree of compliance with each applicable standard.

Rj denotes the total number of standards applicable to each bank.

These methods were initially developed to measure mandatory and voluntary compliances (or a combination of voluntary and mandatory) disclosures (Abd-Elsalam & Weetman, 2003; Ahinful, et al, 2012; Al-Shiab, 2008; Street & Gray, 2001). This paper therefore employs this approach to measure the level of mandatory, voluntary disclosures and presentational faithfulness. Although, the presentational faithfulness has not been studied empirically, it is in right direction to construct index for it because it equally has checklist like the disclosures.

Another construct identified by Queku's multidimensional models is presentational faithfulness or framework. This provides the framework and contents for recognising the various financial statement items on the face of the financial statements rather than disclosing as notes to the reports. IAS 1 is the authoritative standard that looks at the presentational faithfulness of financial reporting. The IAS 1 as issued by IASB sets out the overall presentational requirements for financial statements, their framework including how these financial statements should be structured, the minimum requirements in terms of their content and the application of the overriding concepts such as the accrual basis, the going concern, and the current/non-current distinction (www.iasplus.com). The presentational faithfulness, a term coined from the standard requires that a financial statement should be considered complete when it comprises a statement of financial position, a statement of comprehensive income, a statement of changes in equity and a statement of cash flows.

There is no study that has uniquely investigated how this compliance affects companies. This component of IFRS can be considered as the pictogram or graphics of the entire IFRS. What financial analyst, fund managers, investors and even laymen hold as financial report is the presentation. What is termed uniformity and harmonisation of two sets of financial statement from different countries is the ability of the two sets to present the information in the same format. The presentational faithfulness thus, is the true common language laymen, investors, shareholders and other stakeholders yearn to see across borders. Despite this important role it has been ignored in the literature. Queku (2016) recognised the importance and included this construct in the model.Since the study is conducted within the banking industry, IAS 30 requirements which specifically guide the presentation of financial statements of banks are considered in constructing the checklist for this component of IFRS. The measure of the presentational faithfulness also follows partial compliance index as explained under the disclosures.

Accounting quality is also part of the IFRS constructs. The call for high accounting quality to reflect in the provision of the required financial information has increased over time due to the often financial scandals cases, such as Enron case in USA; Renong case in Malaysia; and HIH Insurance in Australia (Gaio 2010). According to Muniandy and Ali (2012), lack of financial transparency and low accounting quality evident in financial information disclosed all contribute to these scandals. The corporate scandals and the continual financial biases have caused stakeholders to call for transparency in accounting and financial reporting. These have prompted accounting and financial oriented authorities and scholars to continuously search for means to encourage companies to prepare, present and disclose financial information with high quality.

Scholars, academicians and some authorities in accounting practice believe that one breakthrough that has the promise to redeem the world from low quality financial information is the development and application of a common set of accounting standards (Armstrong et al. 2010). IFRS as global accounting standard has accounting quality as a key component. It purports to continuously retain high accounting quality standards (IASB 2009). This confirms earlier assertion by Armstrong et al. (2010). It is therefore erroneous to estimate the relevance of IFRS compliance without considering the accounting quality (Queku, 2016). According to Carmona and Trombetta (2008), IFRS is a principle-based standard that encourage adopters to report accounting information that adequately and better reflect the economic activities of the adopter. Empirical evidences have demonstrated that IFRS has high accounting quality as its strength (Brochet, Jagolinzer & Riedl 2013; Iatridis, 2010).

There are a number of methods that could be used to measure IFRS accounting quality. Tang et al. (2012) measure the quality of financial information by bringing in some components of auditing and accounting information that can be related to quality of financial reporting, for instance, accruals magnitude, the loss avoidance ratio, as well as the non-Big 4 auditor ratio. Conversely, Daske et al. (2008) employs implicit measurement techniques for example Tobin's q and cost of capital in measuring the quality of financial information. The lower /higher cost of capital (Tobin's q) depicts higher financial information quality. Prather-Kinsey et al. (2008) also analyse the financial information subject of earnings announcements in their value relevance study in which the influence of quality of financial information on the decisions of investors is assessed via the cost of capital. All these different methods can be grouped into two: auditing based quality measure, earning based quality measure and accrual method (Bharath et al. 2008; Bhojraj & Swaminathan, 2009; Seyed & Zaini, 2013).

Queku relied on these constructs and measurements to develop the multidimensional models.It is argued that these constructs though interacted in to meeting the value relevance of IFRS compliance, each of them contribute uniquely to the benefits of IFRS compliance (Queku, 2016). Thus, employing each of this construct as separate proxy for measuring IFRS compliance may be misleading and yield mixed results due to their unique role and difference. Following this, this paper hypothesises as follow:

- H_1: There is significant difference between accounting quality, mandatory disclosure, voluntary disclosure and presentational faithfulness or framework.

To measure each of these multidimensional constructs, Queku explained that researchers should evaluate the alternative measurement, approaches and methods as reviewed in this paper and other relevant ones and choose one which is appropriate and suitable with limited limitations and relevant to their studies so as to build these proxies into the multidimensional models. Thus, Queku did not restrict researchers to particular methods of empirical measure in testing the multidimensional models, though the paper made some recommendations. This empirical investigation, however, follows the recommendations in Queku's paper. The models are reviewed as follows. Queku's two multidimensional model is based on the argument that two thematic areas can be formulated from the IASB conceptual framework (IASB, 2015). This is restated as:

$$2 - IFRS_{lct} = w_1 DS_t + w_2 AQ_t \quad (3)$$

The disclosure (DS) in model (3) was expanded into constituents where the disclosure is restricted to notes outside the face of the financial statements. The measurement, recognition and presentation on the face of the financial statements, according to Queku (2016) is termed presentational faithfulness or framework (Pf). This is expressed as

$$3 - IFRS_{lct} = w_1 AQ_t + w_2 DS^*_t + w_3 Pf_t \quad (4)$$

The four-multidimensional model of Queku was also developed from the model (3). The disclosure (DS*) was expanded further into voluntary disclosure and mandatory disclosure. Substituting these contents into model (3), Queku's four- four-multidimensional model is as follow:

$$4 - IFRS_{lct} = w_1 AQ_t + w_2 MD_t + w_3 VD_t + w_4 Pf_t \quad (5)$$

It is proposed that the composite estimation of IFRS compliance through the multi-dimensions are statistically different from the single construct. In addition, the use of each of the multidimensional models would yield no significant difference. Therefore, this paper presents its working hypotheses as follows:

- H_2: There is significant difference between the single constructs and the multidimensional models of IFRS compliance.
- H_3: There is significant difference between the multidimensional models of IFRS compliance.

3. Methodology

This paper uses quantitative research approach (Kinde, 2011). Quantitative approach to research conducts reviews of existing relevant literature and deductively develops hypotheses to be tested (Creswell, 2003). The paper applies the quantitative approach by developing concepts from the reviewed theories and empirical evidences relevant to the specific objectives and subsequently develops hypotheses from the objectives. The study uses secondary data. The sources of the data for the study are mainly websites of the various banks and Bank of Ghana. The empirical analysis is based on the data extracted from the audited financial reports of the various banks within the sampling frame. The study collects its data over six years' period from 2008 to 2014.

The book based values from the various audited annual financial reports are used. Besides the use of audited annual financial reports of the selected banks in the sampling units, other professional pronouncements, journals articles, related books, and other relevant manuals are also consulted. Although it has been argued in literature that financial data should be measured in market terms, it is difficult to obtain market based values for unlisted banks (Panno, 2003). Due to this difficulty the study relies mainly on book based values.

The main variables for the study are accounting quality, mandatory disclosures, voluntary disclosures, presentational faithfulness, a two multidimensional model (2-$IFRS_{lc}$), a three multidimensional model (3-$IFRS_{lc}$) anda four multidimensional model (4-$IFRS_{lc}$). Following the literature review, mandatory disclosure, voluntary disclosure and presentational faithfulness are measured using self-constructed index based on the partial compliance approach (Al-Shiab, 2008; Healy & Palepu, 2001). Accounting quality is measured using the accrual method. The accrual method uses the deviation between earnings and operating cash flows within a given financial year to estimate accounting quality (AQ). It is measured as the difference between the net income and operating cash flow scaled by

the average total assets (Heidi, 2012). This cash flow based method is very suitable for the banking sector as liquidity is a key benchmark for assessing relevance of a policy. It is given as

$$AQ = \frac{Earnings\ after\ tax - Operating\ cash\ flow}{Average\ total\ assets} \quad (5)$$

3.1. Estimation Approach

Having measured each of the constructs, the paper conducts time varying mean approach to test the three hypotheses developed from the literature. These are restated as:

- H_1: There is significant difference between accounting quality, mandatory disclosure, voluntary disclosure and presentational faithfulness or framework.
- H_2: There is significant difference between the single constructs and the multidimensional models of IFRS compliance.
- H_3: There is significant difference between the multidimensional models of IFRS compliance.

The paper uses the time varying mean approach to conduct mean test of equality. Where cause and effect relationship is investigated concurrently with the test of the model, researchers could use both mean test approach and coefficient test approach. The use of the two approaches would add confidence to the results from the investigation and conclusions drawn. It is believed that a mean value has series of coefficients; however, statistical softwares report the coefficient with the minimum standard error. Thus, the coefficient could provide a more sensitive evidence to evaluate the model. The use of the two approaches may help the paper to avoid wrongly rejecting or failing to reject the hypotheses. This is not used in this paper as coefficient estimates are not part of the focus of the paper.

4. Results and Discussions

This section applies that methodology to test the various hypotheses developed in this study. The results from the data analyses are presented in tables. The discussions are presented with the tables under them.

4.1. Descriptive Analysis

Table 1 reports the statistical results of the data analysis regarding the data properties. The level of IFRS accounting quality as represented by AQ used accrual quality as the proxy. From the Table it is shown that the AQ in the banks is relatively low on an average (mean). The mean statistics is 0.4655 with median of -0.0385. Like the debt market, earnings performance of firms with high accruals is negatively associated with low accounting quality and vice-versa. Therefore, the relatively low AQ indicates that the level of accounting quality of IFRS compliance is high. The range however, is very high with maximum value of 70.7576 and minimum value of -0.5673. The high level of the range of the data reflects the high level of standard deviation of 6.0289. The relatively low accrual level (high accounting quality) and to the extent of achieving negative observation seems to suggest that sample firms with high level of IFRS compliance are more likely to underestimate than overestimate their earnings relative to cash flows.

The Table shows the descriptive statistics of the level of compliance of the sampled banks to mandatory disclosures as measured by MD. The mean (median) value of MD is 0.6819 (0.7382). This statistics is relatively high though falls short of the general expectation. This shows that on the average banks in Ghana respond positively to mandatory disclosure requirements. The observations on the MD range from 0.1584 to 0.8767. The differences in observations mean that the banks within the sample do not respond equivalently to the mandatory disclosures. The standard deviation for the MD mean statistics is also 0.1478. This may be attributed to the continuous call by the Institute of Chartered Accountants Ghana (ICAG) and Bank of Ghana to fully embrace the extant of IFRS in the sector.

The mean (median) of the level of voluntary disclosures compliance which is defined by VD is 0.5989 (0.6277). This statistics is satisfactory. In relation to the MD, the VD has higher level of compliance in relative terms though not in absolute terms. This means that banks generally presents relevant additional information to stakeholders to enhance transparency. The minimum value and maximum value for this variable are 0.0212 and 0.8548 respectively. The standard deviation of the individual observations from the average (mean) is 0.2110.

Within the same study period (2008 to 2014), level of presentational framework or faithfulness as represented as PF in the Table above has a mean value (median) of 0.6230 (0.6339). These statistics (mean and median) are very close signifying symmetric characteristics of the data. The data range from 0.4181 as minimum value to 0.8571 as the maximum value in the study period. The range statistics is relatively low compared to the rest of IFRS compliance indicators. The standard deviation associated with the mean statistics of presentational framework is 0.0741. This is very low suggesting that the observations have low dispersion. The low range statistics and standard deviation can be explained that most of the banks prepare their financial statements to represent relatively the physique of IFRS requirements.

	AQ	MD	VD	PF
Mean	0.4655	0.6819	0.5989	0.6230
Median	-0.0385	0.7382	0.6277	0.6339
Maximum	70.7576	0.8767	0.8548	0.8571
Minimum	-0.5673	0.1584	0.0212	0.4181
Std. Dev.	6.0289	0.1478	0.2110	0.0741
Observations	138	138	138	138

Table 1:Descriptive Statistics of Variables (2008 to 2014)
Source: Queku (2016): Computed from Eviews 7 Package

- H_1: There is significant difference between accounting quality, mandatory disclosure, voluntary disclosure and presentational faithfulness or framework.

The paper uses two different estimation techniques to make the findings more potent. It uses Anova F-test and Welch F-test to determine the significance difference between each of the single constructs and the multidimensional models. With these two tests, when the p-values of the statistics are less than the significant level, then, the decision is reject the null hypothesis that there is no significant difference. The results are reported in Table2. The paper tested the significance difference between all the four constructs found in Queku's multidimensional model. The purpose is to find evidence that these single constructs are statistically different and therefore the choice of a particular construct as proxy would determine the outcome of the results.

Method	**AQ, MDI, VDI, PF**
Anova F-test	10.2904(0.0000)
Welch F-test	10.4109(0.0000)

Table 2: Test of Equality (2008-2014)

Note: AQ, MDI, VDI, PF are accounting quality, mandatory disclosure, voluntary disclosure and presentational framework. the p-values are in the parenthesis

Source: Queku (2016): Computed from Eviews 7 Package

The results from the Table show that Anova F-test and Welch F-test have values of 10.2904 and 10.4109. The statistics in the parenthesis are the p-values which are less than even 1 percent in both cases. This means that the study strongly rejects the null hypothesis that there is no significant difference. The study therefore concludes that there is strong evidence that the single constructs differ significantly.

- H_3: There is significant difference between the multidimensional models of IFRS compliance.

The paper proceeds to test the statistically difference between the multidimensional models. This test also seeks to demonstrate that the three multidimensional models are statistically equal and therefore researchers are likely to generate similar results if any of the models are used to estimate the level of compliance. The findings are reported in Table 3.

Method	**M1, M2, M3**
Anova F-test	1.4520(0.2353)
Welch F-test	1.4475(0.2369)

Table 3: Test of Equality (2008-2014)

Note:M1, M2 and M3 represent two, three and four multidimensional models respectively. The p-values are in the parenthesis

Source: Queku (2016): Computed from Eviews 7 Package

The results from Table 3 indicate that the values for the Anova F-test and Welch F-test are 1.4520(0.2353) and 1.4475(0.2369) respectively. The probability values are in the parenthesis. The p-values are greater than even 10 percent significance level. The study therefore fails to reject the null of no significant difference. The results decisively provide evidence that the multidimensional models provide similar estimation of the level of IFRS compliance. The study hastens to add that this consistency or statistical equality in results is based on the fact that all multidimensional models use the same contents of dimensions. For instance, as seen in the model construction, the two-factor dimensional model can be seen as a compressed form of the three and four-dimensional models.

- H_2: There is significant difference between the single constructs and the multidimensional models of IFRS compliance.

Finally, the study empirically tests the significant difference between the single construct and the multidimensional model. The results are captured in Table 4.

Method	**SC, MC**
Anova F-test	3.4797(0.0021)
Welch F-test	6.3532(0.0000)

Table 4: Test of Equality (2008-2014)

Note: SC and MC denote single construct and multidimensional constructs respectively. The p-values are in the parenthesis

Source: Queku (2016): Computed from Eviews 7 Package

The Table 4 reports the results of the test of significant difference between the single constructs and the multidimensional models. The tests revealed Anova F-test value of 3.4797(0.0021) and Welch F-test value of 6.3532(0.0000). The p-values are less than 1 percent. This implies that the null hypothesis of no significant difference is again rejected. The results reaffirm the position that it may be erroneous to treat the measure of IFRS compliance as a single construct.

It could be concluded from the findings that IFRS is not a single construct but rather a multidimensional constructs as proposed by Queku (2016).Thus, the empirical findings affirm the propositions by Queku (2016). The implication of these findings is that the choice of a particular single construct as proxy for IFRS would determine outcome of the results even using similar data. That is, whiles one construct used as proxy can reveal IFRS compliance as relevant given the key performance indicators, another proxy may indicate the contrary. This also adds to the need to use multidimensional estimation approach to measure IFRS compliance.

This finding is consistent with the study expectations. Each of the elements or themes in the IASB Conceptual Framework serves specific purpose and therefore expected to differ, other than that the IASB and US national Financial Accounting Standards Board (FASB) would not initiate project to review the content of the elements of the IASB framework (IASB, 2015, p.7). The findings are consistent with the assertion by Hubert and Heger (2011). Although Hubert and Heger (2011) were victims of the single construct measure of IFRS compliance, they assert that accounting researchers try to disentangle the "complete path" instead of using the 'complete path'. The complete path of IFRS estimation requires the consideration of all relevant variables as they differ individually but collectively measures the same phenomenon.

The study also found decisive evidence that the multidimensional models provide similar estimation of the level of IFRS compliance. This implies that the multidimensional models for estimating IFRS compliance yield similar results. This consistency is however achieved when all multidimensional models use the same contents of dimensions and indicators. For instance, as seen in the model construction, the two-factor dimensional model can be seen as a compressed form of the three and four-dimensional models. To explain the statistically consistency or similarity found between the multidimensional models for estimating IFRS compliance, the content derivation of each of the models can be considered. From the results, it is found that Model 2 is a direct derivative and expansion of Model 1 and same can be said to Model 3. Thus: If A= B+C, but C=K+T, then A = B+K+T. The test of equality results found in this study meets the scientific order of mathematics and intuitive theory.

5. Conclusions and Recommendations

The paper provided empirical investigation on the multidimensional models proposed by Queku (2016). The paper used secondary data from the audited financial statements of Ghanaian banks with data span of 2008 to 2014. Banks used include listed and unlisted, foreign and locals. It is concluded from the findings that the individual constructs of IFRS: accounting quality, mandatory disclosure, voluntary disclosure and presentational faithfulness differ significantly though collectively contributes to meeting IASB purpose. The implication is that evaluating IFRS from a single construct as proxy may lead to erroneous findings and conclusion.

Another conclusion is that the multidimensional models for IFRS estimation do not have significant difference and therefore could be used interchangeably. However, the value relevance of IFRS compliance estimated using the four-multidimensional model is likely to outperform the rest of the models. Therefore, it is recommended that empirical studies should favour the four-multidimensional model. It is concluded further that the multidimensional models are statistically different from the single constructs. The implication is that to assess the predictive value, relevance, economic benefits and contribution of IFRS to adopters, researchers should employ multidimensional model to estimate the compliance.

Another recommendation is that having tested the multidimensional model, researchers should extend IFRS literature by investigating cause and effect relationship between IFRS compliance and key performance indicators such as shareholders' value, profitability and cost of debt. Furthermore, in comparative studies between IFRS compliance and other standards, the multidimensional model could be used to estimate compliance under both studies and subsequently investigates the difference. This could provide better informed comparatively benchmark than the usual ratio comparisons as the ratios themselves are affected by events, economic situation and firm characteristics during the periods.

It is recommended that future researchers should employ the multidimensional model to assess each of the IFRS in issued to determine either to go for partial or full adoption. This paper considered all standards in holistic perspective. A more specific and relevant based results could be found if the multidimensional model is assessed based on each standard rather than the whole.

6. References

i. Abd-Elsalam, O. H., & Weetman, P. (2003). Introducing international accounting standards to an emerging capital market: Relative familiarity and language effect, with a case study of Egypt. Journal of International Accounting, Auditing and Taxation, 12 (1), 63-84.

ii. Ahinful, G. S., Essumang, A & Oppong-Boakye, P. K., (2012). International Financial Reporting Standards Compliance: Evidence from Ghana. International Journal of Business and Management Tomorrow 2 (11)

iii. Al-Shiab, M. (2003), Financial Consequences of IAS Adoption: The Case of Jordan. PhD Thesis, University of Newcastle, Upon-Tyne, UK,

iv. Armstrong, C., Barth, M., Jagolinzer, A & Riedl, E., (2010). Market Reaction to the Adoption of IFRS in Europe. Working paper, Stanford University.

v. Bharath, S. T., Sunder, J. & Sunder, S. V. (2008). Accounting Quality and Debt Contracting. Accounting Review, 83(1), 1-28.

vi. Brochet, F., Jagonlizer, A., & Riedl, E. (2013). Mandatory IFRS Adoption and Financial Statement Comparability. Available at: http://ssrn.com/abstract=1819482.

vii. Carmona, S., & Trombetta, M. (2008). On the Global Acceptance of IAS? IFRS Standards: The Logic and Implications of the Principles-Based System. Journal of Accounting and Public Policy 27: 455-461.

viii. Cooke, T.E. (1992). The Impact of Size, Stock Market Listing and Industry Type on Disclosure in the Annual Reports of Japanese Listed Corporations. Accounting and Business Research, 22 (87), 229-237.
ix. Creswell, J. W. (2003). Research Design: Qualitative, Quantitative and Mixed Method Approach (2nd Ed.).Thousand Oaks, California, SAGE Publication Inc.,
x. Daske, H., Hail, L., Leuz, C., & Verdi, R. (2008). Mandatory IFRS Reporting around the World: Early Evidence on the Economic Consequences. Journal of Accounting Research, 46(5), 1085-1142.
xi. Glaum, M., & Street, D. L. (2003) Compliance with the Disclosure Requirements of Germany's New Market: IAS versus U.S. GAAP. Journal of International Financial Management and Accounting, 14 (2003), 64–74.
xii. Healy, P. & Palepu, K. G. (2001). Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature. Journal of Accounting and Economics; 31 (1-3): 405-440
xiii. Heidi, H. (2012). Accounting Quality and Terms of Debt: Evidence from IFRS Firm Masters thesis: Aalto University
xiv. Hodgdon, C., Rasoul, H., Todkar, R.H., Harless,D.V. & Adhikari, A (2008) Compliance with IFRS Disclosure Requirements and Individual Analysts' Forecast Errors. Journal of International Accounting, Auditing and Taxation, 17, 1–13.
xv. Hubert, B., & Heger, G. (2011). Voluntary Financial Disclosure, the Introduction of IFRS and Long-term Communication Policy: An Empirical Test on French firms.A paperpresented at the 2010 French Finance Association Meeting at St Malo, at the2010 9th International Governance Conference at Metz
xvi. IASB. (2009). "Who We Are and What We Do". International Accounting Standards Board,IASC Foundation. http://www.ifrs.org/The-organisation/Pages/Who-we-are.aspx.
xvii. Iatridis, G., & Rouvolis, S. (2010). The post-adoption Effects of the Implementation of International Financial Reporting Standards in Greece. Journal of International
xviii. Accounting, Auditing and Taxation, 19(1), 55-65. doi: 10.1016/j.intaccaudtax.2009.12.004
xix. Kinde, B, A. (2011) Capital Structure Determinants: An Empirical Study on Insurance Industry in Ethiopia. Addis Ababa University School of Graduate Studies
xx. Nobes C., & Parker R. (2006). Comparative international accounting (9th Ed.). Pearson education limited 2006.
xxi. Prather-Kinsey, J., Jermakowicz, E. & Vongphanith, T. (2008). Capital Market Consequences of European Firms' Mandatory Adoption of IFRS. Working paper. University of Missouri and Tennessee State University.
xxii. Queku, I. C. (2016) Review of Compliance Measure in Empirical Accounting Literature: Perspective of International Financial Reporting Standards. Research Journal of Finance and Accounting, 7(14), 59-66
xxiii. Queku, I. C. (2015) International Financial Reporting Standards (IFRS) in Practice and Fundamental Accounting Concepts and Conventions: a Review Approach. Journal of Advances in Business and Management Research, (JABMAR), 1(1), 19-25
xxiv. Seyed, S. E., & Zaini, E. (2013). International Financial Reporting Standards and Financial Information Quality: Principles Versus Rules-Based Standards. Jurnal Pengurusan 39(2013) 93 – 109
xxv. Street,D.L & Bryant, S.M. (2000).Disclosure Level and Compliance With IASs: A Comparison Of Companies With and Without U.S. Listings And Filings. The International Journal of Accounting, 35 (2000) 305–329
xxvi. Street,D.L & Gray, S.J. (2001). Observance of International Accounting Standards: Factors Explaining Noncompliance. Association of Chartered Certified Accountants. (ACCA) Research Report, No. 74, London, UK. 2001
xxvii. Tsalavoutas, I. (2009). The Adoption of IFRS by Greek listed companies: Financial Statement Effects, Level of Compliance and Value relevance. PhD thesis: The University of Edinburgh
xxviii. Yesegat, W. A (2009). Value added tax in Ethiopia: A study of operating costs and compliance', PhD thesis, University of New South Wales, Australia.