Accountants’ Perceptions of the Use of Excel Spreadsheet in Financial Reporting: A Survey of Accounts Personnel in Manufacturing Firms

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Abstract: Spreadsheet, a widely accepted critical business application tool with its benefits and unavoidable inadequacies is relied on by many accountants for financial reporting and operational processes despite the availability of accounting softwares. The aim of this research paper was to know the value placed by accountants on the use of excel spreadsheets in accounting information system and its relationship with quality of financial reports in Nigeria. Using a sample of fifty experienced chartered accountants in manufacturing firms, and adopting questionnaires to gather primary data, the Pearson Moment Correlation co-efficient, Z-statistics and simple statistical tools for analysis. The first hypothesis shows result of 0.45 below the standard 0.5 hence it is concluded that a positive but weak relationship exist, while the second hypothesis confirms the various measures put in place to mitigate ameliorate the perceived errors and risks in the use of spreadsheet, but lack of periodic review and back up challenges are still issues, Z statistics is negative at 0.05 confidence level. The results indicated weak relationship with financial report quality and measures in place to mitigate errors not good enough. The findings of the study may have implications for the firms’ management staff and accountants, as they revealed the acceptance of spreadsheets as an integral resources of the organization which must be effectively controlled to avoid drop in quality of financial reports. It is recommended that accountants update their skills through training on the full utilization of spreadsheet resources, while additional efforts put in place to do periodic review of controls and manage back up issues.

Keywords: Accounting Information System, control risks, errors, spreadsheet.

1. Introduction

Accounting and accounting information system has been influenced by Information Technology (IT) over the years making the work and roles of accountants and other professionals less cumbersome and financial reports not only fast but timely to meet up with deadlines (Coster, Leon, Abraham & Kalbers, 2011; Baxter, 2006; PWC, 2004). The IT influence has made accountants acquire relevant skills and competencies in order to meet up with the demand of internal users of accounting information with accuracy needed for decision making. Accounting information, systematically obtains financial information through the collection and reporting of data that creates a common language with which members of an organization can communicate (Muhindo, Mzuza & Zhou, 2014). The most popular tool and default software for financial analysis and journal entry preparation use for collecting and processing financial information in a computerized accounting information system is the excel spreadsheet (Baxter, 2006; PWC, 2004). It is an electronic document, interactive computer application for business entities which analyses and store data in tabular form. Spreadsheets were developed as computerized simulations of paper accounting worksheets. Excel spreadsheet is an integral part of the information and decision-making framework of most firms, it acts as a valuable auxiliary tool equally important as accounting softwares in preparing budgets, forecasting, financial modelling, workpaper generation, cost/benefit analysis, foreign exchange analysis, assets and liability management, determining rate of return on investments, mathematical modelling, trend analysis, projecting market penetration, and evaluating the feasibility of...
diverges, acquisitions, and mergers (Baxter, 2006). Despite the obvious benefits derivable from the use of accounting softwares by various entities (Lim, 2013; Alzoubi, 2011; Toth, 2011), excel spreadsheet is still very popular and used liberally by accountants to either completely the output of accounting softwares or as a standalone tool. The reasons for this situation are: spreadsheets combines an expressive high level formula language with visual format to organize and display data for easy understanding and integrity (Baxter & Oatley, 1991; Chan & Chen, 2000); management can use it to effectively guide strategic decisions either through forecasting or modelling (Hall, 1996); central computing control is enhanced because accounts personnel can complete task without learning programming; spreadsheet provides the chance to adjust any stored value and observe the effects on calculated values, hence making spreadsheet useful for “what-if” analysis since many cases can be investigated with ease without manual recalculation. Newer version spreadsheet have multiple interlinked and connected sheets that display data either as text, graphs and numerals (Panko, 2008). Spreadsheets also make calculations easier to understand by displaying stages of the development of totals; the grid encasing the cells in the spreadsheet can either be visible or hidden in print outs, enabling reports to be formatted from the display of the spreadsheet; templates containing the formulas for frequently used spreadsheets increase productivity by ensuring continuous usage without formatting.

The major drawback of spreadsheets are the problem of inadequate controls, which open it to malicious and unintended changes, data quality/integrity problems, unrestricted assess, and high fraud potentials since they are subject to increased inherent risk and errors (Coster et al., 2011; PWC, 2004). Errors associated with spreadsheet are (i) Input error: Errors that arise from flawed data entry, inaccurate referencing or other simple cut-and-paste functions. (ii) Logic error: Errors in which inappropriate formulas are created and generate improper results. (iii) Interface errors: Errors from the import or export of data with other systems. (iv) Other errors: Errors include inappropriate definition of cell ranges, inappropriately referenced cells or improperly linked spreadsheets, which leads to poor quality and costly decisions (PWC, 2004; Panko & Sprague, 1997). Due to the aforementioned issues several researchers agreed that spreadsheets represent material misstatement and fraud risks for organizations (Coster et al., 2011; Panko & Halverson, 2001; Panko & Sprague, 1997; Kruck & Sheetz, n.d.; Grossman & Ozluk, 2010). Several studies have examined the roles, advantages and drawbacks of spreadsheet as business tool of recording and analysis especially as it relates to decision making process of business entities (Panko & Halverson, 2001; Panko & Sprague, 1997; Kruck & Sheetz, n.d.) none explored the perceptions of accountants (who are the largest users) on the use of spreadsheets in the process of financial reporting despite the many drawbacks especially among Nigerian firms— which is the focus of this research paper.

The purpose of this research are threefold: First, to examine the relationship between the use of spreadsheets and the quality of accounting information turned out by accountants (Alzoubi, 2011; Baxter, 2006). Also, the mixed research findings of the benefits of the application of softwares (including excel spreadsheets) in business decision process necessitate this study (Leon, Abraham & Kalbers, 2010; Grossman & Ozluk, 2010; Amidu, 2011; Lee 1986; Mingers 1991; Waller 1985). Lastly to ascertain if accountants still rely on spreadsheets in carrying out their responsibilities despite the observed drawbacks and the advent of user-friendly accounting softwares (Coster et al., 2011; Caulkins, Morrison & Wiedemann, 2007; Janvrin & Morrison 1996; Ansari & Block 2008; Butler 2000, Panko, 2007; KPMG, 2007; PWC, 2004; Alzoubi, 2011; Nicolaou, 2004; Amidu, 2011). In covering this research gap, this paper makes key contributions to the literature on the subject matter. It provides evidence on the knowledge and trust of accountants on the use of spreadsheets to improve the quality of AIS (despite the flaws) and the decision making by management and therefore has potential implications for business policy-makers. The research questions on which this paper attempts to provide answers to are (i) is there any significant relationship between use of spreadsheets and the quality of financial reports turned out by accountants? (ii) Are there measures put in place to mitigate the inherent errors hindering the full utilization of spreadsheet resources among accountants? The remaining of the paper is structured into four sections. Section 2 reviewed related literature, section 3, the research methodology, section 4 explains the analysis and implications of findings and section 5 is the conclusion and recommendations.

2. Literature Review

Several researches place reliance on the use of excel spreadsheets as a standalone and or complimentary tool of their financial reporting and operational processes, hence forming an integral part of information and decision making process (Coster et al., 2011; Panko, 2006; PWC, 2004). Spreadsheets, in

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many firms especially the meagre resource ones, are tools for traditional responsibilities such as planning, budgeting, forecasting as well as newer decision-making responsibilities (Ansari & Block 2008, Butler 2000, Panko, 2007). They are used for tracking business process data, model management decisions and confirms the totals entered into the accounting systems and influence the values attributable to each item in the financial statement (Baxter, 2006; PWC, 2006; Walter & Pergola, 2013). In most organizations the application of spreadsheets for accounting information adds value to business processes, and when information provided is used effectively in decision making by management it reduces cost, improves efficiency and complements internal control (Romney & Stinbart, 2015; Salem & Ahmed, 2013). To aid decision making, the quality of information must be reliable without integrity challenges which will enable management assess its performance and formulate policies that can achieve set goals (Nicoloau, 2000). Such quality is further decomposed into six features-relevance, timeliness, reliability, faithful representation, verifiable and understandable which must be provided by the accounting process through its reports (Ogundana, Ojeka, Ojua and Nwaaze, 2015). The quality of spreadsheet output is hampered by empirical evidences that spreadsheets contain errors, which leads to poor quality and costly decisions (Panko, 2008; Panko & Sprague, 1997). This is partly due to the nature of spreadsheets, experience of the spreadsheet developer, complicated formatting and application of a formatted sheet for another purpose (Baxter, 2006). Spreadsheet errors according to several researchers can be classified into quantitative and qualitative errors. Quantitative errors show up as incorrect results in the spreadsheet, while qualitative errors take the form of poor spreadsheet design and format—which might not be visible but leads to quantitative errors after spreadsheet updates since poor design makes spreadsheets hard to maintain (Panko, 2008; Baxter, 2006). The risks associated with spreadsheets after development are maintenance, documentation, version control, privacy issues and separation of duties (Walter & Pergola, 2013). Data quality issues are of major concern to those making business decisions using spreadsheet models. A great feature of spreadsheet is its ability to exchange data with other applications which makes several users to overlook the perceived drawbacks. Integration with graphic, database system and word processing packages improves the production and the quality of reports and graphs, making the figures in the spreadsheet easier to explain hence reducing data hoarding and data redundancy. The very nature of spreadsheets lacks the basic logic and data controls required to prevent errors and misuse during operational use, hence business entities need to put in place manual or automated control processes to assist in reducing spreadsheet risks by ensuring that mechanism are applied to minimize, detect, and resolve errors and misrepresentations/misstatements (Grossman & OZluk, 2010, Panko & Auirigemma, 2010).

In a review of spreadsheets relevance in accounting processes and other usage, Panko (2008) documents high error rates more than 90% in excel spreadsheet accounting applications in large accounting practices, which included: Cooper and Lybrand where 91% error rate was established in all spreadsheets that contained more than 150 rows in 1997; KPMG found an error rate of 91% in 1998; Lawrence and Lee found an error rate of 100% in 2004; Powell, Lawson, and Baker found an error rate of 64% in 2007. These observed errors had created risks of doubting the integrity and quality of any financial reports prepared thereon. Spreadsheet risk is the likelihood of adverse operational or financial consequences resulting from use of a spreadsheet especially for financial and business purposes (Leon et al 2011; Grossman & Ozluk, 2010). Powell et al (2000) reported from their empirical study that among ten spreadsheets with non-zero impacts for which error size was reported, all the spreadsheets had errors that exceeded $100,000, six spreadsheets had errors exceeding $10 million and one spreadsheet had an error exceeding $100 million. PWC (2004) in a comprehensive spreadsheet report listed potential risks and issues with spreadsheets that can impede on its quality, namely: complexity of the spreadsheet and calculations, purpose and use of the spreadsheet, number of spreadsheet users, type of potential input, logic, and interface errors, size of the spreadsheet, degree of understanding and documentation of the spreadsheet requirements by the developer, uses of the spreadsheet’s output, frequency and extent of changes and modifications to the spreadsheet, development, developer (and training) and testing of the spreadsheet before it is utilized. The report mentioned the errors that occur to the lack of control on spreadsheet like input error, logic error, interface error and other errors. It concluded by offering steps to mitigate observed challenges. Brown and Gould (1987) discovered 44% error on spreadsheets developed by IBM professionals with 1 to 5 years’ experience, such errors were attributable to the time of planning the spreadsheet and formatting. They concluded that the error rate could be higher given that the study was based on experimental spreadsheet and not on working ones. Abraham, Burnett & Ervig (2009) identified different classes of spreadsheet errors and types of error prevention and detection.
techniques: mechanical errors are simple slips that occur due to carelessness, mental overload, or distractions; omission errors arise from the programmer leaving something out of the spreadsheet model by accident or due to lack of information about the workings of the spreadsheet; logic errors are the result of the programmer choosing an incorrect algorithm for solving a problem.

Cragg & King (1993) reviewed twenty working spreadsheets from ten firms and found a 25% error margin, after the spreadsheets had gone through a formal testing process. They observed that the true error rate could be higher since the sample spreadsheets were limited to two hours per spreadsheet and only spreadsheets ranged from 150 to 1,000 cells were examined. Caulkins et al (2007) returned in their survey that most firms do not have formal policies to ensure the integrity of their operational spreadsheets, and if available are rarely applied, while informal policies were only enforced during the development, testing, auditing, and modification stages of the spreadsheet life cycle, despite all of the literature on the prevalence of spreadsheet errors in organizations. Conversely, Davies and Ikin (1987) studied working business spreadsheets from ten Australian firms, they discovered the several application of spreadsheets amongst which were product costing, budgeting and variance analysis, payroll administration, and loan calculations/amortization. Only 26% of worksheets were considered error free, while 21% contained “major” errors of estimation of inventory cost and monetary to a tune of millions of Australian dollars. The last 53% were viewed as “inadequate and extremely prone to accidental errors” in actual real-world situation and application. Bishop& McDaid (2008) experimented with thirteen professional accountants and thirty four accounting students with the aim of recording end-user behavior in error detection and correction, they found that professional accountants had greater intention of correcting errors on spreadsheets than the students, hence experience is required to mitigate the impact of errors on the output of spreadsheet.

Leon et al (2011) in their survey of thirty eight firms working in compliance with the Sarbanes-Oxley Act of 2002 (SOX) as it relates to spreadsheets associated with financial reporting, they studied the controls and processes implemented by these organizations and the challenges they encountered in the use of spreadsheets and concluded that to mitigate errors effective and tested controls should be put in place to make the output of high quality. Also Chambers& Scaffidi (2012) examined four hundred randomly selected spreadsheets, focusing on their functional role, structure and feature usage, they discovered that inherent errors plagued several cells and advocated for effective controls from start to the output level of spreadsheets used for business purpose. Simkin (1987) opined that smaller worksheets linked together make errors easier to detect and traceable for correction. “Uncontrolled coupling is a substantial cause of spreadsheet maintenance error”. As cells become more highly interconnected, the developer spends inordinate time trying to remember the meaning of the number of the cell, hence distracted from using it to achieve the desired goal. AICPA (1993) and Freeman (1996) in their review studies of mitigation of errors in spreadsheets explained the views of professional users of the program, in which they wanted the breaking down of complex formulas into simple steps understandable by users, avoiding long formulas, easy to edit formats and reviewable outputs. They concluded that developers should avoid the likelihood of making the use and generation of reports difficult to reduce the incidence of errors and misstatement.

Given the proven error prone spreadsheet limitations and the need to fully utilize its potentials, the Institute of Chartered Accountants of England and Wales (ICAEW) in 2015 provided twenty steps to mitigate these challenges/limitations-basically control risks faced by firms in their use of spreadsheet and the expected perceived quality. Among these steps are: the firms should determine the role expected of spreadsheets in their operations to avoid ambiguity; sticking to the set standard; engagement of experienced spreadsheet developer in the process; peer review of worksheets; appropriate formatting to suit the business; adequate staff training; use of password for input purpose; appropriate formatting that will be long term in nature; set output report standard; identify procedures; make formula simple by avoiding long formula; efficient back up system; carry out consistency evaluation and ensuring only authorized users use it. Also PWC (2004) relying on Sarbanes-Oxley Section 404 advised on the implementation of a process that ensures appropriate controls are achieved over spreadsheets. The process consist of: Inventory spreadsheets; evaluate the use and complexity of spreadsheets; determine the necessary level of controls for “key” spreadsheets; evaluate existing “as is” controls for each spreadsheet and develop action plans for remediating control deficiencies. From this review of related literature on spreadsheet suitability and error challenges, it is pertinent to note that spreadsheets are tools of financial analysis and reporting for businesses, but drawbacks and inherent problems exist in terms of spreadsheet accuracy which affect the quality of input and the output thereon.
Based on the foregoing, the following hypothesis is proposed:

\( H_0 \): There is no positive relationship between use of spreadsheets and the quality of financial reports turned out by accountants.

\( H_1 \): There are no measures put in place to mitigate the inherent errors hindering the full utilization of spreadsheet resources among accountants.

### 3. Research Methods

The survey research method was adopted in this study. It was designed to investigate accountants’ perception of the importance of spreadsheets in the preparation of financial reports. Survey research concerns with identifying real nature of problem and formulating relevant hypothesis to be tested. Data were collected from professional chartered accountants with more than ten spreadsheet usage experience. Professional accountants were chosen because of their usage of spreadsheets consistently in course of carrying out their roles as providers of business information to various users irrespective of the firms and industry.

#### SAMPLING PROCEDURE

The participants were selected by random sampling, it was adopted because it obtains a representative sample from the population. Owojori (2002) explained that random sampling is one in which all the members of the population have equal chance of being selected from the sample as every other member and in which the selection of an individual for the sample did not influence the chances of any other individual of being chosen. The criteria to participate in this study were that (a) Participants must have been using spreadsheet for financial reporting for at least ten years in the manufacturing sector (b) the participants must have good knowledge of peculiarities of spreadsheets, (c) the participants were ready to provide information required.

A random sample of fifty (50) participants were drawn from pool of chartered accountants working in the Apapa Business District. Fifty (50) respondents were chosen because it representative enough for the research work given the prevalence of the application of spreadsheets among firms even among accountants with access to accounting softwares. Data for the study were obtained through the primary source. The primary data were generated through self-administered questionnaire. A pilot survey was adopted for the reliability test and it yielded correlation coefficient of 0.72. In testing the hypotheses, descriptive analysis was conducted to test the questionnaire responses, the survey consisted of identical questionnaires shared among the aforementioned participants. All questionnaires were returned, because this researcher personally collected questionnaires one after the other with not more than two respondents in an office. It was structured in line with the research questions and hypotheses. Relevant statistical tools such as the percentages and tables are used for the data analysis. The hypotheses were analyzed using a survey questionnaire with a -5 Likert scale response options of Strongly Agreed (SA), Agreed (A), Neutral (NE) Disagree (D), and Strongly Disagreed (SD) with weights of 5,4,3,2 and 1 respectively with statistical significance are above 80% very highly significance, 60%-80% highly significance, 40%-59% medium significance, 20%-39% low significance and below 20% no significance. From the data collected, 55% of respondents combines spreadsheet usage with accounting software in financial reporting; 30% use spreadsheets as standalone accounting program and 15% use accounting software exclusively. For the purpose of this study, the population mean has been set at ‘3’, which is the average of an equal representation of all the possible responses. The descriptive analysis of the responses are presented in tables 1 and 2 showing calculated statistical indicators such as percentages, weighted arithmetic means, ranking,Z-statistics and standard deviations.

#### 4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

##### 4.1 Test of Hypothesis

Hypothesis 1: There is no positive relationship between use of spreadsheets and the quality of financial reports turned out by accountants.

Table 1 below shows the responses of experienced chartered accountants with above average knowledge of spreadsheet usage with 70 %( 40% strongly) agreeing to that assertion. The basic attributes/quality of financial reporting (relevance, timeliness, reliability, faithful representation, verifiable and understandability) as propounded by Ogundana et al (2015) were all admitted with significant acceptance by all respondents with at least 60% affirmation that spreadsheets are useful tools of analysis.

Statements 2-4, and 7-9 seek to evaluate if there is a relationship between use of spreadsheets and the quality of financial reports turned out by accountants. The statements are positive descriptions of the attributes of financial reporting with the use of spreadsheets, respondents had option of agreeing or disagreeing with each statement. The means of the scores of responses range between 3.22 and 3.7, all more than the paper’s population mean of ‘3’ and with a standard
deviations ranging between 1.43 and 1.58, which could be considered as moderate when compared to a mean of three in a ‘1’ to ‘5’ range analysis. This points to the fact that accountants irrespective of the errors and control risks associated with spreadsheets rely on them to prepare quality financial reports. However from statements 5 and 6 show that errors are inherent in such report, responses indicate such with the mean of 2.6 less than the expected 3, even with adjustments done as stated in statement 6, the quality of the financial report will be below required standard. Hence from these results and a weighted mean 3.5, it can be concluded that there positive but weak relationship between use of spreadsheets and the quality of financial reports turned out by accountants due to inherent errors and manual adjustment thereof.

To further demonstrate the relationship, the calculation of the correlation is done using the Pearson Product Moment Correlation Coefficient (r): We have the following result: n=50, Σx=309, Σx²=5545, Σy=141, Σxy=1815, Σy²=1627, (Σx)²=95481, (Σy)²=19881 r=47,181/105,703.16, (Σx)²=1627, (Σy)²=19881 r=0.45

This estimate of 0.45 above showed that, there are weak correlations between use of spreadsheets and the quality of financial reports turned out by accountants. This indicates the presence of errors, potential errors and control risks distort the supposed quality attributable to financial reports prepared with spreadsheets. From these results, we can accept the first hypothesis, which confirmed that there is positive but weak relationship.

Hypothesis 2: There are no measures put in place to mitigate the inherent errors hindering the full utilization of spreadsheet resources among accountants

Table 2 below shows the responses of experienced chartered accountants about the measures put in place to mitigate the inherent errors hindering the full utilization of spreadsheet resources among accountants with 60% (30% strongly) accepting that errors and omissions are common features of worksheets despite the fact that same percentage were involved from start to end of spreadsheet development. The remedies enumerated by scholars were tested as propounded by PWC (2004) and ICAEW (2015), all the respondents admitted that measures were in place to mitigate the effect of perceived errors on financial reports for spreadsheet usage.

70% (40% strongly) of the participants agreed that spreadsheets are required for the completion of financial reporting process even where accounting software is involved. This is ranked first, with the mean of 3.9 far above the expected value of 3, indicating the importance of spreadsheet to accountants. However 70% of the accountants disagreed that management do periodic reviews and backups which are essential in reducing the drawbacks of spreadsheets application. The results from Table 2 show that measures are in place to reduce the impact of perceived errors on spreadsheets application that might affect the quality of financial reports apart from poor management attitude to back up of worksheets and periodic review of control deficiencies. With the weighted mean of 3.35 (greater than expected 3) and the closeness of the standard deviations, it can be concluded that measures are in place to reduce the risk of spreadsheet usage, respondents concurred with this assertion with significance affirmation of 70%.

Using Z-statistics to further confirm The ‘Z’ calculated produced 3.13, 2.187, 0.70, 1.5603, 3.48, 3.796 and 3.336 respectively based on statements 1-7. Following, the rule for deciding in Z-statistics, the means of the responses to statements 1-4 and 6-7 are significantly different from that of the population and hence the hypothesis is rejected. This is because the ‘Z’ calculated for all the statements are greater than the table value, which is 1.960 at 0.95 confidence level. It is also worthy of note that statement 5 which returned Z score of -3.48 suggests that back up plans and review of control measures are lacking which can affect the quality of any financial report produced in such a situation. Since the computed ‘Z’ is greater than the table value, the hypothesis that stated that there are no measures put in place to mitigate the inherent errors hindering the full utilization of spreadsheet resources among accountants’ cannot be accepted. The meaning is that measures are in place though backups and periodic review of controls are absent.

5. Conclusions and Recommendation

The empirically proven error prone and high control risk status of spreadsheets has not reduced the reliance placed on spreadsheets by several business entities as a key component in their financial reporting and operational processes. The aim of this study is to evaluate accountants’ perception of the use of spreadsheet as a tool of preparing financial reports and if measures are in place to mitigate the errors and control issues associated with spreadsheet usage. The first hypothesis formulated was tested using the data obtained from the questionnaires distributed among selected experienced chartered accountants. It was tested using mean, standard deviation and ranking statistical tools. With weighted general mean of 3.5 greater than expected 3, and the correlation co-
efficient of 0.45, the null hypothesis is rejected and concluded that there is a positive but weak relationship between use of spreadsheets and the quality of financial reports turned out by accountants due to inherent errors and manual adjustment thereof. The second hypothesis was tested using the applied approach by using statistical tools and Z statistics test to ascertain the measures in place to mitigate errors and risks associated with spreadsheet usage. It was discovered from all the calculated values that most prescribed measures are in place except for lack of periodic review of control deficiencies and lack of back up for worksheets. The second hypothesis was further tested with Z-statistics and returned that computed ‘Z’ is greater than the table value at 0.05 confidence level hence the second hypothesis was rejected affirming the measures are in place but with limitation.

The findings of this study show several accountants still use spreadsheets as a complimentary or standalone tool of financial reporting and analysis despite obvious flaws, indicating trust on the application. There are measures in place to mitigate errors and risks but are not adequate to give credence to the quality expected of a qualitative report. There is need for policy shift to first broaden the limited knowledge of spreadsheet available to accountants, which will enable them solve basic challenges without fear of errors and control risks. Spreadsheets developers should constantly liaise with accountants on control and risks features that will make reliability possible, complex formatting and long formula should be avoided to ensure standardized reporting. Further recommendations are:

- Formal policies should be in place, well documented and reviewable at intervals.
- Back up of files should be strictly adhered to by accountants to enable continuity of data processing.
- Experienced accountants are admonished to double check entries made by junior accounts staff or non-accounts staff before posting while limiting the number of people that can access spreadsheets.
- Peer review should be encouraged among accountants especially on challenges encountered and possible solutions. This will increase knowledge and reduce incidence of low quality reports.
- Controls should be applied evenly on all worksheets to avoid distortions in linked sheets.

References
Table 1: Responses to relationship between use of spreadsheet and financial report quality

42. Toth (2012). The current role of accounting information systems. Club of Economics in Miskolc, 8(1), 91-95.
<table>
<thead>
<tr>
<th>Responses</th>
<th>Mean</th>
<th>Rank</th>
<th>SD</th>
<th>status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)Participants have above average knowledge of the application of spreadsheets to prepare financial reports</td>
<td>3.8</td>
<td>2</td>
<td>1.62</td>
<td>Accept</td>
</tr>
<tr>
<td>(2)The use of spreadsheets improves the timely manner of turning out financial reports for use of management</td>
<td>3.22</td>
<td>9</td>
<td>1.43</td>
<td>Accept</td>
</tr>
<tr>
<td>(3)Spreadsheets are needed to complete the output of accounting softwares to ensure relevance of information and aid decision making by management.</td>
<td>3.7</td>
<td>3</td>
<td>1.58</td>
<td>Accept</td>
</tr>
<tr>
<td>(4)To avoid ambiguity which distorts reliability, financial reports are downloaded in spreadsheets for scrutiny, quantitative and qualitative checks.</td>
<td>3.5</td>
<td>6</td>
<td>1.5</td>
<td>Accept</td>
</tr>
<tr>
<td>(5)Perceived errors are checked and corrected manually before reports are printed to ensure quality assurance and effective decision making</td>
<td>2.6</td>
<td>10</td>
<td>1.46</td>
<td>Reject</td>
</tr>
<tr>
<td>(6)On the average, spreadsheets’ output might contain errors that require adjustment in formula and output layout.</td>
<td>3.7</td>
<td>3</td>
<td>1.58</td>
<td>Accept</td>
</tr>
<tr>
<td>(7)Accountants understand constants and variables in financial reports before presentation when analyzed with spreadsheets.</td>
<td>3.38</td>
<td>7</td>
<td>1.46</td>
<td>Accept</td>
</tr>
<tr>
<td>(8)Decision making accuracy based on spreadsheets output/reports show faithful representation of the business situation</td>
<td>3.3</td>
<td>8</td>
<td>1.45</td>
<td>Accept</td>
</tr>
<tr>
<td>(9)Spreadsheets application makes verifiability possible and appropriate adjustment made to suit business idiosyncrasies</td>
<td>3.7</td>
<td>3</td>
<td>1.58</td>
<td>Accept</td>
</tr>
<tr>
<td>(10)Spreadsheets application is easy to use, and requires less training, increases productivity when compared with accounting software.</td>
<td>4.12</td>
<td>1</td>
<td>1.80</td>
<td>Accept</td>
</tr>
</tbody>
</table>

Average answers to hypothesis: α=0.05 n=50  p=0.000  weighted mean=3.502

Source: Researcher’s computation
### Table 2: Responses to measures put in place to reduce spreadsheets errors and risks

<table>
<thead>
<tr>
<th>Responses</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>Rank</th>
<th>Std dev</th>
<th>Z score</th>
<th>status</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Errors and omissions are common features of spreadsheet usage and can misrepresent accountants’ opinions if not corrected frequently</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>3.7</td>
<td>2</td>
<td>1.58</td>
<td>3.13</td>
<td>Acpt</td>
</tr>
<tr>
<td></td>
<td>30%</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Accountants are carried along from development, formulae and formatting stages of spreadsheets</td>
<td>15</td>
<td>15</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>3.46</td>
<td>4</td>
<td>1.49</td>
<td>2.19</td>
<td>Acpt</td>
</tr>
<tr>
<td></td>
<td>30%</td>
<td>30%</td>
<td>10%</td>
<td>16%</td>
<td>14%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Worksheets have attached security features that makes access not possible for unauthorized persons</td>
<td>11</td>
<td>15</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>3.14</td>
<td>6</td>
<td>1.42</td>
<td>0.70</td>
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<td>(4) Controls are in place from start to end of spreadsheet application to avoid errors and frauds</td>
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<td>(5) Back up of work done on spreadsheets and periodic review of perceived control deficiencies are carried out by management</td>
<td>5</td>
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<td>(6) Accounting softwares do data processing but spreadsheets complete the process of financial reporting</td>
<td>20</td>
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<td>(7) Formatted output outlay, input control and separation of duties increase the quality of financial reports prepared through spreadsheets</td>
<td>20</td>
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General Weighted Mean: 3.35, sample=50, α = 0.05

Source: Researcher’s computation