Incorporating the Role of Management Information System in Monitoring Corporate Performance for Sustaining Growth

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ABSTRACT

This work examines how the role of organizational management information systems (MIS) can be integrated in monitoring corporate performance for sustaining growth. MIS generally involves the activities of people, technology and the organization, and the efficient relationship among them. Through these relationships, organizations are able to collect data (generated at the various levels of operation), organize, control and process it into information for managing the organization. Every year, many newly set-up businesses, popularly known as start-ups do not survive, but collapse. The proposed MIS model was tested on the activities of start-ups in Ghana through a stratified random sampling strategy of convenience and quota. The results indicate that organizational MIS can become one of the important resources required by management for the efficient/effective planning, organizing, controlling and directing the activities of organizations, as it appears potentially reliable for reducing the high attrition rate of start-ups.
Keywords: Management information system, technology, organization

INTRODUCTION

Businesses are normally set-up by entrepreneurs with the intention of expansion/growth to adding value to discover other related markets so as to become more competitive, and sustainable (White, 2004). According to Gratton (2007), one of the most important changes likely to occur to any start-up is the adoption of the divisional structure, where separate business units are created to represent major product lines to enable the company to move rapidly into new markets and consequently, develop new product lines. However, the global economic crisis, which was more pronounced in the Eurozone (BBC, 2011) during the early second decade of the 21st century, and consequently, putting for example Greece, Italy and Spain under pressure (Peachey, 2012); and the constantly shifting organizational demands, have created the need for keeping accurate information as a significant driver for corporate exploration of new ideas and behaviours (Sun, 2009). The information hopefully, will enhance and monitor performance, which subsequently, will increase operational efficiency and provide competitive advantage

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for organizations (De Wit and Meyer, 2004; White, 2004). Unfortunately, not many modern businesses use the information so gathered (even if gathered at all), to leverage their organizational position to understand the growth and performance patterns experienced by the organizations. This has greatly affected such organizations and rendered them shambolic/disorganized, and therefore uncompetitive. Performance is enabled by an organization's ability to create and use information and knowledge (Khaitsa, 2010). Globally, the number of corporations familiar with having the required information for increasing operational efficiency through for example "decreased processing time" (Cadle and Yeates, 2004), is low and therefore, infinitesimal. Creativity is not enough for business success, so routine management functions, known broadly as "administration" (White, 2004) must be carried out efficiently to sustain businesses. However, as revealed by White (2004), the attrition rate of start-ups globally is notoriously high, as in the US which happens to be the stronghold of entrepreneurship, about "50,000 new enterprises fail each year" with even large enterprises seldom lasting one/two generations as business success becomes ephemeral if not meticulously nurtured. This situation has motivated this research to examine the use of MIS for monitoring the performance of start-ups. The disturbing thing therefore is that 70 percent of start-ups in Ghana are likely to fail within the first five years of incorporation. MIS is defined by Nowduri (2011) as a system of information that ensures apt management of businesses, where the various facets within the business act simultaneously to ensure the overall efficiency of the system. In effect, MIS is information which assists management to make timely decisions for managing organizations. As ascertained by the OECD (2004), MIS is an important resource which helps management in planning, organising, controlling and governing corporations efficiently and effectively.

Globally, entrepreneurs have always been churning out new businesses, but sustaining these enterprises has always been the bane of entrepreneurship. The attrition rate of start-ups is notoriously high (White, 2004), leading to low number of start-ups surviving the first few years of existence. In the Ghanaian business environment, the markets are generally the buying and selling (trading) business type (Frimpong, 2011) which does not augur well for the development of a lower-middle income country to higher-middle status. This type of business is unproductive, as it cannot provide adequate employment to the large unemployed Ghanaian youth. The high unemployment rate and its attendant poverty (Samwick, 2009) is tearing and destroying the nation, as there is a lot of unemployed graduates with some belonging to unemployed graduates' associations formed by themselves. This study, therefore, probes how businesses could generate the needed information to enable management of organizations to organize, direct and control the operation and governance of their businesses (Dessler, 2004; OECD, 2004) for competitive advantage, profitability and sustainability (De Wit and Meyer, 2004; White, 2004). Areas, including the role of MIS, and why the need for MIS to monitor corporate performance for competitive advantage and sustaining growth, are investigated. The review highlights the *what, when and how* (Sun, 2012). MIS is important for *monitoring performance and growth patterns of businesses,*

and furthermore, sustaining corporate growth. Subsequently, theoretical frameworks and theories of entrepreneurship and corporate performance management are the vital management features reviewed to support the research (De Wit and Meyer, 2004; Sobel, 2012). Critically, the research indicated the missing gaps of knowledge and information associated with the above-mentioned frameworks.

Review of Management Information System (MIS)

According to Nowduri (2011), MIS can be described as people-oriented, as it is through people who use the facility on the activities of businesses but with emphasis on service through technology, to provide the needed results. Though Nowduri describes MIS as people-oriented, unfortunately, the people are limited to only those working in the organization. It is important to consider and include the missing gap of knowledge on customers and consumers who are equally important as stakeholders within the business environment, and as one of the revered stakeholders (OECD, 2004) for successful business. Customers patronize products and services of the organization, and as such are one of the important stakeholders within the organization to be considered when evaluating the business environment. Hence, when the information on their purchase records is monitored, it can lead to improvement and contribute to the growth of the organization.

For a business therefore, to function properly and report on its activities accurately there is the need for the organization to use information systems at the various levels of operation (including purchases by customers) by accurately collecting and organizing, and efficiently processing data generated from these levels. Subsequently, the generated information (reports) from the system should be effectively used for decision making by management. Businesses become crippled when they do not have the information needed to help define and report on the operations performed. In this technological age, competition among organizations is keener and more pronounced for competitive advantage (De Wit and Meyer, 2004). An enterprise that allows its business to be crippled due to lack of information for accurate reporting on activities performed is doomed to collapse and therefore, will be wiped out entirely. This might therefore, be one of the banes while numerous businesses die-off early, instead of surviving the start-up phase to the next higher level to offer the needed products and services to clientele.

Information Systems came out of Systems thinking which was initiated by Senge in the 1920s within several disciplines for example, Biology and Engineering, due to the inability of scientific analysis to explore these disciplines (Really Learning, 2012). Systems thinking apparently introduced the inter-relationships and inter-relatedness (whole) between different processes/activities rather than the cause-and-effect concept popularly known. According to Sachenko (2012), the intense competition among organizations in the 1990s, might have led to the further development of the systems thinking idea through the systems life cycle concept to building information systems to become an integral component of business processes and activities; this

enabled organizations to gain competitive advantage in the market place globally. During this time, the grouping of different information management methods linked to the automation of human decision making activities (Nowduri, 2011) became a vogue, and Information Systems emerged.

Technology as the innovation that drives MIS

MIS is the medium through which technology (e.g. computer system) may be used to solve organizations' problems. According to Gaines, Hoover, Foxx, Matuszek and Morrison (2012), MIS that is properly designed and implemented has become an even more valuable strategic resource for improving organizational competitive advantage. A lot of organizations, including Microsoft, Dell and IBM have used technology (computer and internet) to carve a niche and create higher-market-share for their businesses, and also turned-around human lives. Technology, as one of the institutional-based drivers (Peng, Wang and Jiang, 2008), can be used to achieve competitive advantage for the organization. Modern businesses therefore, thrive on the use of technology, especially organizations that go global, for example multinational conglomerates (MNCs), as they use technology to assert themselves internationally in the industries and markets they operate in. A lot of applications have been created from technology for different assignments based on management needs within the enterprise. However, the most popular is MIS, because of its versatility for solving organizational and management application problems and queries.

Entrepreneurship in Ghana

Start-ups are mostly ventured into by entrepreneurs, and entrepreneurship therefore, becomes the foremost theoretical framework to be reviewed for this research. Entrepreneurship is the process of discovering new ways of combining resources to undertake innovations, especially with business acumen in an effort to transform the innovations into economic ventures (Santoro, 2012; Sobel, 2012). There is no gain saying therefore, that the work of an entrepreneur is associated with starting new businesses, commonly referred to as start-ups (Santoro, 2012).

Entrepreneurs normally disregard any associated risks which might accompany the venture, making them less risk-averse (White, 2004). This is because, strategically, they have a mission to accomplish within a specific time-frame. Certainly, entrepreneurs do have the hope that organizations will be able to recoup the cost of production of the products/services and in addition, make profits which (have to) exceed the cost of capital, commonly known as Economic Value Added –EVA (Niven, 2002).

According to Robson and Obeng (2007), Wolf analyzed 100 dataset of enterprises in the formal commercial agricultural and manufacturing sectors in Ghana, and found out that interest rates, access to credit, depreciation and inflation were the four most disturbing obstacles facing entrepreneurs. Robson and Obeng (2007) also mentioned that Tagoe and others investigated the impact of financial sector liberalization policies on SMEs in Ghana, and found that the main challenge has been entrepreneurs

accessing affordable credit. This has amply been confirmed by Agyeman (2012) in an article admonishing the Ghana government to set up entrepreneurship fund (about $1 billion) purposely to cater for the numerous young unemployed graduates from the nation's tertiary institutions; this would encourage those with fertile dreams to translate them into viable business ventures to create employment avenues and reduce the high unemployment rate in Ghana. As reported by African Economic Outlook (2013), the youth (age group of 15-24) unemployment rate in Ghana was 25.6 per cent in 2012, and this figure was twice that of the age group of 25-44 and three times that of 45-64. This implies that over 45 per cent of Ghanaians are unemployed. However, Mustapha (2012) appropriately informs that Midland savings, a Ghanaian company, has reiterated its commitment to provide funds to SMEs so as to help grow the Ghanaian economy, and the government of Ghana has also announced to use part of the oil revenue to grow the SMEs (Sam, 2012). These are good signs for the future of SMEs in Ghana. As a matter of fact, SMEs and private organizations in Ghana have a big role to play in moving the Ghanaian economy to the next higher level of middle-income status.

In boosting entrepreneurship in Ghana, the nation has joined the membership of the Global Entrepreneurship Monitor (GEM) project, which is concerned with the annual assessment of the entrepreneurial activity, aspirations and attitudes of individuals in a number of countries (GEM, 2012). GEM explores the role of entrepreneurship in national economic growth, which include among others, unveiling detailed national features, characteristics associated with and enhancing the national level of entrepreneurial activity.

Furthermore, Robson and Obeng (2007) look at the studies by Mambula, where 32 entrepreneurs in Nigeria were interviewed, and found out that for example, financing, poor infrastructure, difficulty in getting raw materials, machines and spare parts are the problems facing entrepreneurs. According to Robson, Haugh and Obeng (2009), Chipika and Wilson investigated entrepreneurship in Ghana, and found out that there are potential benefits from entrepreneurship for the developing countries since the development of small and medium-sized enterprises (SMEs) can alleviate poverty, generate employment and promote national economic development. Robson, Haugh and Obeng (2009) mention record keeping as a serious problem within the Ghanaian business environment (but this cut across most businesses globally), and topped it with the near impossibility of getting access to the financial data of organizations in developing countries, as business and family life typically overlap; they emphasised that in Ghana the problem is exacerbated/pronounced as most businesses are family-managed, and are only passed on to the next generation of relations.

Globally, entrepreneurs venturing into start-ups find it difficult in getting financial assistance to commence their businesses, and Africa, specifically Ghana, is no exception. It is a fact that entrepreneurs really go through hard times whilst looking for financial assistance to fulfil their innovated ideas. As recounted by Sahlman (1997), investors prefer to deal with well-known team of entrepreneurs and therefore, do not want to get involved with start-ups managed by unfamiliar people, as they are "unpredictable".

This is sad and might be due to the uncertainty and risks associated with start-ups. However, the problem of higher-failure rate of start-ups was not addressed in any of these peer-review journals. Nevertheless, start-ups as new entrants into the business environment would surely face stiff competition from competitors, and the threat generally would be from the bargaining strength of suppliers and buyers, barriers to entry of industry, threat of substitutes and intensity/degree of competition–Porter's Five Forces Model (White, 2004). This competition determines the appropriate strategies/activities the organization must engage in to contribute meaningfully to the market/industry of operation (White, 2004).

Corporate Performance Management
Corporate performance management (CPM) is a cyclical process for improving/ reviewing the overall business performance to enable an organization manage its processes, costs and people in an effective and optimized manner to better achieve its corporate objectives (Dickinson, 2012; Team Technology, 2012). The need for the alignment of strategic and operational objectives and, the activities of the organization in order to manage performance is paramount. Team Technology (2012), however mentioned the following performance management activities for organizational success: (i) measurement (ii) Appraisal; (iii) Action; (iv) implementation; and (v) Monitoring. These activities measure how the organization's performance, processes and costs are planned, organized, directed and controlled, and people also managed through monitoring to enable the company achieve its goals and objectives more effectively and optimized manner (Dickinson, 2012).

Hypothesis
H_A1:   There is a consequential cause (for example Porter's 5 Forces) which contributes to the failure of most Ghanaian businesses at the start-up phase (White, 2004).
H_A2:   There is a significant impact of organizational MIS on corporate performance/ growth.
H_A3:   There is a significant relationship in the level of use between organizational MIS and Corporate Performance Management (CPM).

METHOD

To enable a successful quantitative study, a stratified random sampling strategy of convenience and quota is used for the research; stratified connotes breaking the population into layers/strata of convenience and quota. By this strategy, cognizance of certain characteristics of the population is important to take care of, so as to enrich the sample (Salkind, 2006). The stratified sampling strategy of convenience and quota leads to the collection of reliable and generalizable data from selected organizations within the country. The questionnaire survey collects extensive, rich and reliable data

on corporate activities (Daft, 2003; OECD, 2004). By this approach the hypotheses are answered through the instruments for the questionnaire. See Appendix 2, figure 3. The data collected from the respondents through the sampling strategy is subjected to quantitative (descriptive – *variable frequencies/averages/ranges*) analyses – (Bryman and Bell, 2007). Primary data are gathered and analyzed critically from selected sampled organizations through questionnaire survey to achieve the objectives of the research – integrating the role of organizational MIS for monitoring Ghanaian corporate performance for sustaining growth. Multinational Companies (MNCs), SMEs and SOEs are the organizations used to gather the necessary data for the research (Bryman and Bell, 2007). Secondary data are collected from the annual reports of some companies in Ghana and peer-review journals. This data complements the primary data so gathered, and is subjected to quantitative analyses.

The collection of secondary data is given a serious thought so as to provide a helpful comparison with the literature review (ESDS, 2012). The exploratory data gathered from the sampled organizations through the questionnaire survey is merged with the secondary data, and then subjected to quantitative and statistical tests/limits that confirm or reject the hypotheses (Bryman and Bell, 2007). The data analysis consists of different components - correlation and variance tests. To conduct the first test, the variables consisting of: market operations/businesses and markets with start-up problems (0-4 years) are subjected to correlation test to determine whether businesses encounter a consequential cause which indeed contributes to their failure at the start-up phase. The variables used for the second test are: what is MIS and the applicability of MIS for monitoring corporate performance. The variables used for the third test are: what is MIS, what is CPM, relationship/similarities in the level of use between organizational MIS and CPM, and corporate functions using MIS.

RESULTS AND DISCUSSION

Types of Organizations: This study identifies four types of organizations - Government, MNC, Non-Governmental/Profit Organization (NGO) and Private Organisation. The most prominent organization type in Ghana is the Private organisations, and it obtains 77 per cent out of 56 organisations which responded to the questionnaire of this survey. Sixty (60) organizations were targeted for sampling the questionnaire, and 56 of them responded, giving a sample response-rate of approximately 93 percentage-value. Furthermore, breaking down the 77 percentage-score of respondents from Private Companies into Large and, Small and Medium-sized Enterprise (SME), produced 79 percentage-value representing SMEs, and with 21 percentage-value representing large organizations. The high figure for SMEs (79 percentage-value) indicates that the Ghanaian business environment is dictated by Small and Medium-sized businesses, which may have positive impact on the growth of the economy as hinted by Robson and Obeng (2007), Agyeman (2012) and Mustapha (2012). State Owned Enterprises (SOE) came second with nine percentage-score; followed by MNCs and NGOs with seven percentage-score each.

Date of Establishment of Organizations: 72 percentage-score represented organizations established between 2001 and 2012 (mostly start-ups), and those established between 1991 and 2000 followed with a percentage-score of 14. Only a sizeable 14 percentage-score represented the other four categories/groupings, and in the order of 1981 – 1990 (7); 1960 – 1970 (5); before 1960 (2); and 1971 -1980 (0). Unfortunately, organizations established between 1971 and 1980 were mistakenly not covered in the questionnaire; however, it is believed that this has not influenced significantly the findings of the study.

Number of Employees in Organizations: Organizations employing 2 – 29 had 53 percentage-score of respondents, and were the highest; mostly the SMEs fall under this category. The rest with their percentage-scores in descending order are: 400 – 1000 (20); 30 – 99 (14); 100 – 399 (11); and above 1000 (2).

Type of Industries: The Service industry had the highest percentage-score of 30 responding to the questionnaire. The second had 20 percentage-score responding from the procurement/distribution sector. The rest in descending order are: financial (17); manufacturing (10); other (10) - comprising telecommunications, health, media, religion, environmental awareness, hospitality and construction; regulation / management (8); monitoring/policy/legal (3); and education/research (2).

Position of Respondents in Organizations: Technical/Professional had 39 percentage-score responding to the questionnaire; followed by management (32); President/CEO (16); and executive management (13).

Corporate/Business Activity in Ghana
The Tables created from the statistical results on corporate/business activity in Ghana (Section B of the questionnaire) are shown in the appendix 1 (Tables 1 – 10) attached while the summaries of the various results on corporate/business activity are given below:

Markets of Operation/Businesses: The market of operation with the highest percentage-score for the survey is Service (34) - comprising aviation, mobile communication, management consultancy, health, procurement/distribution, and office-secretarial. This is followed by: Equipment/Machines (23); Financial (17); Foods/ Beverages (8); Others (7) - including environmental activities, fitness/gymnasium, and construction; Pharmaceuticals (5); Fuel/Chemicals (2); Education/Research (2); and Toiletry (2) (Table 1).

Attraction of Goods/Services: Ghanaians attraction for goods/services obtained 53 percentage-score from 56 sampled organizations and with Strong Attraction coming out with 45 percentage-score. This is evident from the fact that Ghanaians' fright for the awful manufacturing-industry state due to early glitch of factory collapse, has not affected their attraction for the goods and services produced from businesses of entrepreneurs. In reality, this is the reason why the setting-up of more manufacturing

industries in Ghana should be encouraged to give employment to the youth as well as process the numerous raw materials into finished products to feed the nation, and in addition contribute to the growth / development of the economy (Table 2).

Action Taken on Unattractiveness of Goods: Corporate action taken stems from the previous question of Attraction of Goods/Services, and therefore, only the respondents whose goods/services are not attractive to customers completed this portion of the questionnaire. Only one respondent was Uncertain that the organization's goods/services are not attractive. This implies that in percentage terms (based on the previous question), only two percent of respondents are Uncertain that their goods/ services are not attractive (Table 3).

Responsiveness of Customers: Percentage-score of 61 representing Responsive and 36 percentage-score for Strongly Responsive; therefore, there is hope for the Ghanaian economy to rise if the manufacturing industry will be revived to add value to products from the factories (Table 4).

Actions Taken on Unresponsiveness of Customers: Corporate action taken stems from the previous question of Responsiveness of Customers to purchasing goods/ services. One respondent each for Re-strategized and Re-trained staff based on the previous question of Responsiveness of Customers to purchasing goods/services, responded to this question. This implies that only four percent of respondents took action based on the previous question(Table 5).

Information Types Kept on Customers: There are varieties of information kept on customers/consumers with percentage-scores of: Goods/Services (50); Residential (12); Historical (11); Personality/Behavioural (9); Attitudinal/Manner (8); Empirical/ Observation (5); None (4); and Other (1) which includes complaints. Unfortunately, some organizations (4 percentage-score) do not keep any information at all, which is very bad, as depicted by None above (Table 6).

Follow-up on Customers: Follow-up on customers (with their percentage-scores) are in the order: Phone (41); Visits (25); Email (21); None (5); Facebook (4); Twitter (2); LinkedIn (2) and Other (0) (Table 7).

Start-up Problems: One of the most important data gathered from the questionnaire is the start-up problems faced by organizations. The results are: Financial (47); Labour (18); Other (16) for example, Land acquisition and None; Socio-cultural (7); Technological (5); Legal (5); and Political (2) (Table 8).

Period of (Start-up) Problems: Periods of the start-up problems and their corresponding percentage-scores are: 0 - 2 years (43); Above 6 years (22); 2 - 4 years (19); None (16); and 4 - 6 years (0). This particular variable is important for the research as the research problem gives a mean of 70 percent of start-ups likely to fail in the Ghanaian community within the first five years of commencement of operation, and with 30 percent surviving the harsh Ghanaian business environment (Table 9).

Success of Company in Achieving its Goals: Finally, responses on success of company achieving corporate goals received from respondents are overwhelming, with percentage-scores of: Successful (73); Strongly Successful (18); Uncertain (5); Unsuccessful (4); and Strongly Unsuccessful (0). This is laudable for entrepreneurship in Ghana as a successful response-rate of 91 percent (successful-73 + strongly successful-18) shows that Ghanaian entrepreneurs are poised to getting the most benefit from their enterprises (Table 10).

MIS and Corporate Performance/Growth

The tables created from the results on Management Information Systems (MIS) and Corporate Performance (CP)/Growth (Section C of the questionnaire) are shown in the appendix 1 (Tables 11 – 12) attached while the summaries of the various results are given below:

What is MIS: The various responses and their corresponding percentage-scores are: Organization/ People/Technology (87); Technology (9); Organization (2); and People (2).
The Ghanaian business community understands what management information system (MIS) is, as the high percentage-score of 87 for Organization, People and Technology underscores this fact (Table 11).

Will MIS monitor CP? Respondents obtained high percentage-scores of 43 and 44 in favour of Applicability and Very Applicability respectively of MIS for monitoring corporate performance and growth of organizations. Other percentage-scores are: Uncertain (9); Inapplicability (2); and Very Inapplicable (2) (Table 12).

Organizational MIS and CPM

The tables created from the results on Organizational MIS and Corporate Performance Management (CPM) - (Section D of Questionnaire survey) are shown in the appendix 1 (Tables 13 – 15) attached while the summaries of results are given below:

What is CPM: The respondents' answer of Overall company performance for achieving goals obtained 91percentage-score; this is an indication of respondents having good knowledge of business theories/concepts. Other responses and their percentage-scores are: Business (7); Departmental (2); and Divisional (0) (Table 13). CPM monitors Corporate Goals, and if Organizational MIS can monitor Corporate Performance/ Growth, do the functions of Organizational MIS and CPM have some similarities. The responses to the question: Do the functions of Organizational MIS and CPM have some similarities, garnered a high percentage-score of 87 for sameness (75 and 12 percentage-scores for Similar and Very Similar respectively). Other responses and their percentage-scores are: Uncertain (9); Dissimilar (4); and Very Dissimilar (0). This is important to the research as it indicates the similarities in using organizational MIS and CPM in solving business or organizational problems encountered by

entrepreneurs. This will be explained further when analyzing the third hypothesis (HR3) later in the research (Table 14).

What function(s) does your company use MIS/Database(s) for: Finally, responses with their percentage-scores are: Accounting (23); Corporate Management (23); Administration (19); Technical/Stores (12); Procurement/Distribution (12); Production/ Manufacturing (7); and Other (4) for example, Not Applicable and Planning. As indicated from the responses above, MIS is broadly in use within the organization however, other beneficial approaches of using the software to position the organization competitively over others might not have been given a thought (Table 15).

Any additional information given by Respondents: Some of the Additional Information supplied by Respondents
1. Company should enlist on the Ghana Stock Exchange to recapitalize its operations;
2. Company needs organizational consultancy advice; and
3. MIS is useful for monitoring company operations.

There is no doubt that respondents see this survey as important to contribute to the needed change in sustaining corporate growth of businesses in Ghana.

Correlation and Variance Tests
In determining the validity of the hypotheses 1 and 2, correlation tests are conducted on the variables within the questionnaire highlighting the importance of the hypotheses, as the hypotheses deal with cause and impact respectively. Hypothesis 3 is however, subjected to variance test, as the hypothesis deals with relationship.

Corporate/Business Activity in Ghana
Regarding the Hypothesis 1, there is the need to establish dependent and independent variables from the constructs in the questionnaire survey (section B) for testing the hypothesis, thus, there is no consequential cause which contributes to the failure of most Ghanaian businesses at the start-up phase. Since hypothesis 1 is looking for the cause why most Ghanaian businesses fail at the start-up phase, a correlation statistical test is conducted to prove the hypothesis, where the variable market operations (or businesses) becomes the independent variable, and then markets with start-up problems (0 – 4 years) becomes the dependent variable. Up to four years is chosen for the start-up problems as the research problem is: 70 percent of start-ups in Ghana are likely to fail within the first five years of incorporation (and unfortunately the 4 - 6 years' variable is beyond the limit of the research problem, and moreover the value is zero. See Appendix 2, Figure 3, section B: Question/9). The above therefore, produces the Table 16 which is shown in Appendix 1:

Market operations and markets with start-up problems encountered
Using the Spearman's product movement coefficient (McDonald, 2014), the correlation is calculated from the ranks X and Y instead of the original values to make the arithmetic

simpler to manipulate. Applying therefore the Spearman formula, the rank correlation then becomes p = 1- 0.04583 = 0.95. Since the correlation is almost +1, the value 0.95 implies that there is a direct correlation between the variables market operations and markets with start-up problems (0-4 years), which means that there is indeed a consequential cause which contributes to the failure of most Ghanaian businesses at the start-up phase, therefore confirming the hypothesis 1. The Null hypothesis that there is no consequential cause which contributes to the failure of most Ghanaian businesses at the start-up phase is therefore, rejected. Furthermore, a 3-D chart of market operations vs. markets with start-up problems (0-4 years) using the actual values (b) and (c) from table 16 produces the Figure 1 in Appendix 2. The Figure 1 indicates the almost direct correlation of the two variables: the independent variable market operations (businesses) and the dependent variable markets with start-up problems, indicating and indeed confirming that there is a consequential cause which contributes to the failure of most Ghanaian businesses at the start-up phase (Appendix 1 Table 17 and Appendix 2 Figure 1).

Management Information Systems (MIS) and Corporate Performance/Growth
Since hypothesis 2 is looking for the impact of organizational MIS on corporate performance/growth, a correlation statistical test is conducted to prove the hypothesis, where the variable; What is MIS becomes the independent variable, and then Applicability of MIS monitoring CP becomes the dependent variable. Eighty seven (87) per cent (applicable -43 + very applicable -44) of respondents favoured MIS monitoring CP; this therefore, necessitates conducting a test of Organizational MIS (independent variable) on Applicability of MIS for monitoring CP (dependent variable) using only the data from the 87 per cent of the respondents. In this case a meager 13 per cent of respondents do not favour MIS monitoring CP (and even majority of these – 9 percent are uncertain about the situation) Table 18 is therefore, generated in Appendix 1.

Organizational MIS and the applicability of MIS for monitoring CP/Growth

Applying the Spearman formula, the rank correlation (product movement coefficient) then becomes p = 1- 0.125= 0.875. Since the correlation is almost +1, the value 0.88 implies that there is almost direct correlation between the variables Organizational MIS and Applicability of MIS for monitoring CP, which means that there is indeed an impact of organizational MIS on corporate performance/growth, therefore confirming the hypothesis 2. The Null hypothesis that there is no impact of organizational MIS on corporate performance/growth is therefore, rejected. Transferring a, b and d (the actual values of the respondents' data from the questionnaire) from table 18 produces table 19, shown in Appendix 1. A 3-D chart of What is MIS vs. Applicability of MIS for monitoring CP, and using the actual values (b) and (c) from table 19 produces the Figure 2 shown in Appendix 2. The Figure 2 indicates the almost direct correlation of the two variables: the independent variable What is MIS and the dependent variable

Applicability of MIS for monitoring corporate performance/growth, indicating and indeed confirming that there is an impact of organizational MIS on corporate performance/growth.

Organizational MIS and Corporate Performance Management (CPM)

H_A3: There is a significant relationship in the level of use between organizational MIS and Corporate Performance Management. In this case, a central tendency measurement of variance test is used to prove the validity of the hypothesis. Here, the modal-values of the variables then become the best measurement for representing the individual responses to the questions, especially when dealing with categorical or group membership data (Salkind, 2006). This is so because the mean and median do not give good representation (Salkind, 2006) of the data in such circumstance. Using the modal scores (instead of percentage-scores) from tables 12 to 14 to represent each question (section D of the questionnaire) produces table 20. The level of significance at which the hypothesis is being tested is 0.05, and the critical value needed for the rejection of the Null hypothesis for a two-tailed test is 4.3 (Salkind, 2006 and Renfro, 2004), which is less than the critical value (3.73 < 4.3). Thus, based on the sample data, it can be confirmed with 95 percent certainty that there is a significant relationship in the level of use between Organizational MIS and Corporate Performance Management. However, Corporate Performance Management (CPM) is an established management tool used in monitoring company goals (Dickinson, 2012 and Team Technology, 2012), and organizational MIS is a concept which this research is proposing for monitoring corporate performance to sustaining growth. (Table 22).

CONCLUSION AND RECOMMENDATIONS

The essence of the significant relationship in the level of use between organizational MIS and CPM implies that both can be used as tools by management of organizations, but surely there is a difference in the level of use of organizational MIS between Corporate Performance/Growth and Corporate Performance Management. As the use of organizational MIS for monitoring corporate performance/growth has been supported by the various correlation and variance (hypothetical) tests performed above, it is the proposal of this research that entrepreneurs and management of start-ups, SMEs and organizations in general are encouraged to adopt this approach to enhance the activities of their organizations, and consequently, be able to sustain start-ups. The specific conclusions drawn from the research, therefore are:

i. Most of the studies done on entrepreneurship globally had been on the mobilization of finance for start-ups; how they could be set-up, streamlined and promoted to solve unemployment problems;

ii. Mostly, the SMEs are the employment and general economic sustainability back-bone of governments in the emerging markets, and these governments fashion out many programs to rescue these businesses from collapsing. This is

iii.   due to the fact that they give larger number of employment to the citizenry of the emerging nations, which normally goes a long way to salvage the image of the prospective government; however, most of these businesses often do not survive, but fizzle-out after some time;

iii.   Entrepreneurship has been assumed by many researchers in Ghana (and generally, Africa) as encompassing mostly the formation of SMEs, and how to make them successful, instead of the broad innovative idea of, for example the formation of entities, such as, large organizations or MNC, which will better serve the needs of consumers, globally; and

iv.   Organizational MIS has been investigated thoroughly by this study, and potentially found to be an applicable tool for monitoring corporate performance/ growth; whilst corporate performance management (CPM) monitors the achievement/attainment of corporate goals.

The implications of the results of this study amply testifies to the research problem: 70 percent of start-ups in Ghana are likely to fail within the first five years of incorporation. It is therefore, recommended that start-ups and, particularly SMEs should adopt the use of MIS for monitoring corporate performance to enable the sustenance of businesses, as these enterprises are difficult to manage, especially during the early few years. Further research would also be needed to develop the relevant computer programs for use by these enterprises to salvage their businesses from early collapse.

Table 1: Corporate Activity: Markets of Operation/Businesses

Markets of Operation	Frequency	Valid Percent	Cumulative Percent
Foods/Beverages	5	8	8
Toiletry	1	2	10
Equipment/Machines	14	23	33
Fuel/Chemicals	1	2	35
Financial	10	17	52
Pharmaceuticals	3	5	57
Education/Research	1	2	59
Service	20	34	93
Other	4	7	100

Table 2: Corporate Activity: Attraction of Goods/Services

Attraction of Goods/Services	Frequency	Valid Percent	Cumulative Percent
Strongly Unattractive	0	0	0
Unattractive	0	0	0
Uncertain	1	2	2
Attractive	30	53	55
Strongly Attractive	25	45	100

Table 3: Corporate Activity: Action Taken on Unattractiveness of Goods

Action Taken	Frequency	Valid Percent	Cumulative Percent
Evaluate Business Goals	0	0	0
Re-Strategize	1	2	2
Re-Train Staff	0	0	2
None	0	0	2
Other	0	0	2

Table 4: Corporate Activity: Responsiveness of Customers

Responsiveness of Customers	Frequency	Valid Percent	Cumulative Percent
Strongly Unresponsive	0	0	0
Unresponsive	0	0	0
Uncertain	2	3	3
Responsive	34	61	64
Very Responsive	20	36	100

Table 5: Corporate Activity: Actions Taken on Unresponsiveness of Customers

Action Taken	Frequency	Valid Percent	Cumulative Percent
Evaluate Business Goals	0	0	0
Re-strategize	1	2	2
Re-Train Staff	1	2	4
None	0	0	4
Other	0	0	4

Table 6: Corporate Activity: Information Types Kept on Customers

Information Type Kept on Customers	Frequency	Valid Percent	Cumulative Percent
Personality/Behavior	7	9	9
Goods/Services Bought	37	50	59
Residential	9	12	71
Historical	8	11	82
Attitudinal/Manner	6	8	90
Empirical/Observation	4	5	95
None	3	4	99
Other	1	1	100

Table 7: Corporate Activity: Follow-up on Customers

Follow-up on Customers	Frequency	Valid Percent	Cumulative Percent
Facebook	3	4	4
Twitter	2	2	6
LinkedIn	2	2	8
Email	17	21	29
Phone	33	41	70
Visits	20	25	95
None	4	5	100
Other	0	0	100

Table 8: Corporate Activity: Start-up Problems

Start-up Problems	Frequency	Valid Percent	Cumulative Percent
Financial	26	47	47
Political	1	2	49
Technological	3	5	54
Socio-Cultural	4	7	61
Legal	3	5	66
Labor	10	18	84
Other	9	16	100

Table 9 Corporate Activity: Period of (Start-up) Problems

Period (Year) of Start-up Problems	Frequency	Valid Percent	Cumulative Percent
0^+ - 2	25	43	43
2^+ - 4	11	19	62
4^+ - 6	0	0	62
Above 6	13	22	84
None	9	16	100

Table 10: Corporate Activity: Success of Company in Achieving its Goals

Success of the Company	Frequency	Valid Percent	Cumulative Percent
Strongly Unsuccessful	0	0	0
Unsuccessful	2	4	4
Uncertain	3	5	9
Successful	41	73	82
Strongly Successful	10	18	100

Table 11: MIS and Corporate Performance (CP)/Growth: What is MIS

What is MIS	Frequency	Valid Percent	Cumulative Percent
Organization/People/Technology	49	87	87
Organization	1	2	89
People	1	2	91
Technology	5	9	100

Table 12: MIS and Corporate Performance (CP)/Growth: Will MIS monitor CP?

Will MIS monitor CP	Frequency	Valid Percent	Cumulative Percent
Very Inapplicable	1	2	2
Inapplicable	1	2	4
Uncertain	5	9	13
Applicable	24	43	56
Very Applicable	25	44	100

Table 13: Organizational MIS and CPM: What is CPM

What is CPM	Frequency	Valid Percent	Cumulative Percent
Company Performance for Achieving Goals	51	91	91
Divisional Performance for Goals	0	0	91
Business Performance for Goals	4	7	98
Departmental Performance for Goals	1	2	100

Table 14: Organizational MIS and CPM: CPM monitors Corporate Goals, and if Organizational MIS can monitor Corporate Performance/Growth, do the functions of Organizational MIS and CPM have some Similarities

Similarities between MIS and CPM	Frequency	Valid Percent	Cumulative Percent
Very Dissimilar	0	0	0
Dissimilar	2	4	4
Uncertain	5	9	13
Similar	42	75	88
Very Similar	7	12	100

Table 15: Organizational MIS and CPM: What function(s) does your organization use MIS/Database(s) for

Corporate functions using MIS	Frequency	Valid Percent	Cumulative Percent
Accounting	23	23	23
Administration	19	19	42
Corporate Management	23	23	65
Technical/Stores	12	12	77
Production/Manufacturing	7	7	84
Procurement/Distribution	12	12	96
Other	4	4	100

Table 16: Market operations and markets with start-up problems encountered

a	b	c	d	e	f	g
Toiletry	1	8	0	8	0	0
Fuel/Chemicals	1	8	0	8	0	0
Education/Research	1	8	0	8	0	0
Pharmaceuticals	3	6	2	6	0	0
Other	4	5	4	3.5	1.5	2.25
Food/Beverages	5	4	3	5	-1	1
Financial	10	3	4	3.5	-0.5	0.25
Equipment/Machines	14	2	10	1	1	1
Service	20	1	9	2	-1	1

Note: *a = Independent Var.Market operations(x), b = Values from Q/survey, c = Rank X of x-values; d = Dependent Var.Markets with start-up problems(0-4 years), e = Rank Y of y-values, f = Rank difference(X-Y) D, g = Squared rank differenceD^2 and $D^2 = 5.5$*

Table 17: Actual values of market operations and markets with start-up problems encountered

Independent variable Market operations (x)	Values from Q/survey	Dependent variable Markets with start-up problems (0-4 years)
Toiletry	1	0
Fuel/Chemicals	1	0
Education/Research	1	0
Pharmaceuticals	3	2
Other	4	4
Food/Beverages	5	3
Financial	10	4
Equipment/Machines	14	10
Service	20	9

Table 18: Organizational MIS and the applicability of MIS for monitoring CP/Growth

a	b	c	d	e	f	g
People	1	3.5	1	3	0.5	0.25
Organization	1	3.5	0	4	-0.5	0.25
Technology	5	2	4	2	0	0
Organization/People/Technology	49	1	42	1	0	0

Note: *a = Independent var.What is MIS (x), b = Values from Q/survey, c = Rank X of x-values, d = Dependent var.Applicability of MIS to monitor CP; e = Rank Y of y-values, f = Rank difference(X-Y)D, g = Squared rank difference$D^2$and $D^2 = 0.5$*

Table 19: Actual values of organizational MIS and the applicability of MIS for monitoring CP

Independent variable What is MIS (x)	Values from Q/survey	Dependent variable Applicability of MIS for monitoring CP
People	1	1
Organization	1	0
Technology	5	4
Organization/People/Technology	49	42

Table 20: Modal scores for MIS and CPM

Q1	What is CPM	Corporate performance for achieving goals
	Score 51	
Q2	Similarities between Organizational MIS and CPM	Similar
	Score 42	
Q3	Corporate functions using MIS	Accounting
	Score 23	

Table 21: Computation of Mean and Standard Deviation for data on MIS and CPM

Average Score	Deviations from the Mean	Squared Deviations
51	12.33	152.03
42	3.33	11.09
23	-15.67	245.55
$X = 38.67$	$Ó(X – X) = 0$	$Ó(X – X)^2 = 408.67$

Table 22: Summary of Results and Discussions from Quantitative Tests

| Hypothesis	Correlation/Variance Test
H_A1: There is non consequential cause which contributes to the failure of most Ghanaian businesses at the start-up phase.	Rank correlation value of 0.95 is established for **Market operations** vs. **Markets with start-up problems (0-4 years)**, indicating an almost direct correlation. The null hypothesis is rejected.
H_A2: There is a significant impact of Organizational MIS on Corporate Performance (CP)/Growth.	Rank correlation value of 0.88 is established for **What is MIS** vs. **Applicability of MIS to monitor CP**, indicating an almost direct correlation. The null hypothesis is rejected.
H_A3: There is a significant relationship in the level of use between Organizational MIS and CPM.	Null Hypothesis (variance analysis). The obtained value is less than the critical value (**3.73 < 4.3**), therefore the Null hypothesis is accepted
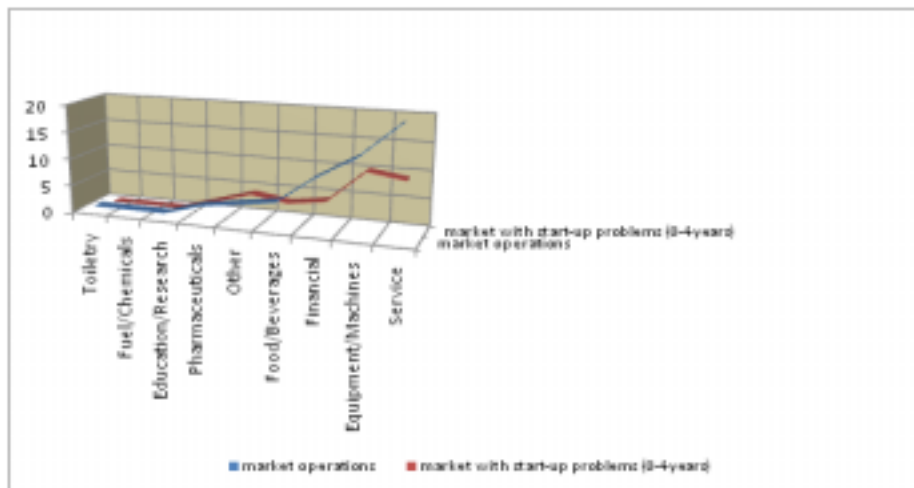
Figure 1: Market operations vs. markets with start-up problems (0-4 years)
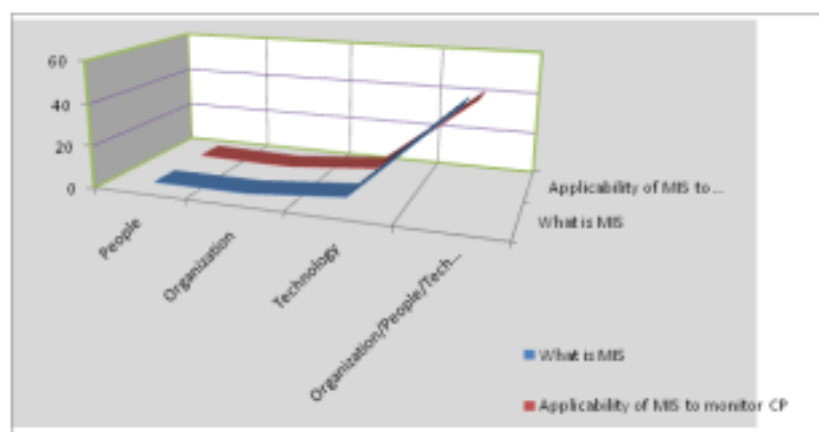

Figure 2: What is MIS vs. Applicability of MIS for monitoring CP

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