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Corporate Financial Intelligence as a Driver of Organizational Performance: A Conceptual and Exploratory Review

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Abstract

While the concepts of financial intelligence (FI) and financial intelligence quotient (FIQ) as it pertains to the individual has been widely investigated and used by practitioners and academics, the operational definition and scope of these concepts have not been sufficiently rigorous. Neither have they been specifically applied to the organization, even though some researchers agree that financial intelligence could improve corporate performance. This paper proposes the concepts of corporate financial intelligence (CFI), measured by corporate financial intelligence quotient (CFIQ) as an organizational-wide practice for institutionalizing and improving corporate performance and shareholder value. This exploratory study argues for the development of a framework/model for defining corporate financial intelligence (CFI) and measuring corporate financial intelligence quotient (CFIQ), and to demonstrate their linkage to corporate performance and shareholder value. This study will present the opportunity for ongoing research into the relationship between corporate performance, shareholder value and the institutionalization of corporate (organizational) financial intelligence.

Keywords: Corporate financial intelligence; Corporate financial intelligence quotient; Managerial financial intelligence; Organizational financial intelligence

Introduction

The main essence of corporate finance is the creation of shareholder value for outlays of shareholder fund and improvement of organizational performance [1]. Managers within organizations are responsible for taking decisions that have financial implications and ultimately should achieve these goals [1-3]. As noted by Enekwe et al. [4] the primary motive of the adoption of any form of financial mixes by managers is to magnify the returns to shareholders given the economic realities.

Corporate finance as a major institutional function of a firm is concerned with sourcing for finance and structuring of liabilities in terms of capital structure by determining the mix of debt and equity [5], and disbursement of fund to the various units of the firm with the primary aim of maximizing shareholders' value. This provides explanations for the interactions that exist among the finance managers and investors concerning the financial contracts and the real investment of a corporation [6], which requires the managers to ensure profitability for shareholders' in terms of generating dividends and increased share values by implementing strategic policies with long-term and short-term financial gains.

Chari and Mohanty [7] agree with Harrison and Pelletier [8] who noted that shareholders value goes beyond increasing values for the shareholders but also includes ensuring value creation for stakeholders in the business. Thus, a business can be deemed a performer if it is able to create value for customers by efficiently matching their benefits (satisfaction) and sacrifices in order to achieve consumer surplus, create value for the suppliers by efficiently matching their supply with their earnings, create value for the employees such that the aggregate of salary, bonus and incentives received alongside intangibles match their contributions to the corporation, create values for the government by sufficiently creating avenue for the government to receive taxes, create values for the community by providing employment opportunities and some corporate social benefits, and also creating direct values for the shareholders by ensuring a reasonable return on their investments commensurate with their risk. Following from this, Orlitzky et al. [9] defined corporate performance as a reflection of the degree of satisfaction shareholders gets for their investment, internal efficiency of the company, and a subjective evaluation of the financial performance of the firm.

Different measures have been adopted in the literature to reflect improvement or otherwise of a business unit. Return on assets (ROA), return on equity (ROE), sales growth, return on sales (ROS), operating margin and Tobin-Q among others are some of the indicators of financial performance [7,10-12]. Modern indicators have been developed to demonstrate improved performance through value creation. The concepts of value chain as developed by Porter [13] help firms to ensure competitive advantage through cost minimization, product differentiation or adoption of both. Consequently, the literature has developed a number of indicators that measures shareholder value, some of which include Economic Value Added (EVA), Market Value Added (MVA), Total Shareholder Return (TSR), Cash Flow Return On Investment (CFROI), Economic Margin (EM), Profit Per Share, Dividends, Price Earnings Return (PER) and Market Value Ratio (MVR) [7].

Given that managerial decisions have financial implications and such decisions have implications for the various indicators of shareholder value, the objective of this conceptual and exploratory paper is to propose a financial and institutional concept/framework that will aid managers within an organization in evaluating opportunities and taking decisions that will enhance corporate performance and shareholder value.

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The Nature of Managerial Decisions

Managers across various functions in an organization take decisions in furtherance of the objectives of the organization [3]. Karakul and Qudrat-Ullah [2], and Baba and Hakem-Zadeh [14] argue that the process of decision-making is core to management activity and has recently been faced with increasing complexity and interrelated routine with inherent dynamism which requires making more than one decision at a time within a changing environment with incomplete information. This has led to a need for increased cognitive capacity for managers and access to adequate and timely information. Managerial decision-making is mainly concerned with the process of evaluating alternatives that are based on risk-preference and cost-benefit analysis [15]. As posited by Negulescu [16], it involves making scheduled decisions that arise from organizational policy and strategies that are intended to achieve organizational goals that are mostly interrelated and have both internal and external environmental constraints. Managerial decision-making as mentioned in Orlitzky et al. [9] and Chari and Mohanty [7] is not limited to shareholders value creation but also internal efficiency and overall corporate performances. It is a continuous process that represents the basis for the continued existence and performance of an organization and it is very time consuming for the decision makers [17].

Following the implications of managerial decision making for shareholders and other stakeholders [14], it is worth noting that decision-making follows a principle based process that is rooted in management philosophical background which dictates the appropriate behavior of managers [16,18,19]. Negulescu [16], and Anguelov and Stoyanov [20] noted that there could be dimensional changes, which makes the decision-making process more challenging and complex, and requires managers to adopt integrated approaches, creativity and innovation within the management decision, while being mindful of organizational changes. Therefore, managerial decisions will be based on the personality of the decision maker to follow a pattern of behavior when making decisions.

Depending on the methodological foundation, the literature has identified three major perspectives to decision-making namely; normative theories which are related to how decision makers should make decisions; descriptive theories which are related to how the decisions are actually made; and prescriptive theories which are related to how decisions should be made and how it can be made [21-25]. Also, a number of styles have been identified in the literature which are associated with the personality of the decision-maker among which are emotional, cognitive, intuitive, rational and collaborative styles to mention a few [16,26], and which are associated with the established perspectives to decision making. However, the literature is yet to identify universal approaches within which decision style can be categorized [3,21,27].

Normative theory of decision making

Early explanations of managerial decision-making were based on the normative theories [24]. Models of normative theory set out to make propositions as to how individual decision makers should make decision which form the philosophical background for decision making [21,25]. Analysis of what to do and what not to do in normative case are not based on data but rather on intuitions and fact about the characteristics of human psychology [24]. It relates to models of how decision-making should be based on best choices given the complete analysis of information about the situation. Therefore, normative models are concerned with how people should make logical and rational decisions [25]. However, studies have shown that there is a limit to which humans can comfortably analyze information [18,21,22,24,25]. Given these limitations, optimum choices or decisions might not always be made. Rather choices are made based on standards, which could be biased.

A major theory within the normative perspective is the rational decision making theory, which stems from emphasis on verifiability of the effect of decision-making [14]. This approach is based on a systematic manner of maximizing the outcome of decision-making process [24,25]. It is based on the analysis of different possible alternatives that are liable to yield good results and choices are made based on weighted probability of the outcome that best serve organizational goal of shareholder value maximization [18,26]. As further emphasized by Verma and Rangnekar [26], decision makers adopting a rational decision approach follow a step-wise process that is planned and which provides focused attention on problem solving that is objective, unemotional, analytical and thorough. Examples of rational decision making models are expected utility theory, game theory, and prospect theory to mention a few.

Descriptive theory of decision making

The descriptive approach of decision making mainly has to do with what was actually done [21,28]. Model of descriptive theory as suggested by Baron [24] provides explanations for not only the actual behaviors of managers but also the reflective judgments that emanate from the process of decision-making. There is a developed body of literature on the deficiency of rational decision making suggesting observed deviation from rational decision-making [18,29]. Given the awareness of risk and uncertainty, managers tend to make decisions that depart from rationality and maximization/optimizations [21,24,28]. Heracleous [30] noted that, empirical studies of decision-making have revealed that most management decisions involve fast decision-making based on partial search for possible relevant information, options and their outcomes. This usually involves poorly structured problems and uncertainty with respect to alternatives and consequences, and partial search for solutions and their consequences. This forms the basis for behavioral decision-making.

Descriptive theory is a more accurate description of decision-making that is based on the psychological nature of individual the decision-maker [25]. Models within this perspective have their roots in the works of Herbert A. Simon who first introduced the statement "human physiological and psychological limitations". This forms the basis for development of the Bounded Rationality Theory, which suggests that individuals have limitations and constraints, which limit their ability to process more information and evaluate alternative choices [21,31]. Herbert A Simon proposed the Satisficing Theory, which stipulates that humans make decisions based on some standards of success as against the maximizing theory of rational behavior [21,24,25]. Other related descriptive theories are garbage can theory, image theory conjunctive/disjunctive model¸ lexicographic model, elimination by aspects (EBA) model, additive and additive difference models to name a few.

Prescriptive theory of decision making

The prescriptive theory of decision-making is an applied theory that enquires into how decisions should be made and how decisions can be made [24,25]. This is an improvement on the descriptive theory that is concerned with prescribing methods for making optimal decisions [28]. Optimal decision-making in this theory is based on some certain normative assumptions of maximization [21,32] as decision-

making devoid of rational process can be biased [24,25]. Meanwhile, cognitive limitations of humans [31], has made it almost impossible to reach optimal decisions. Having a grasp of on the two perspectives, the prescriptive theories seek to prescribe a process of improving on the suboptimal following some normative principles. It is a practical synthesis of the normative principles of maximization and the non-optimal principles of the descriptive theory to reach the best possible decision.

Managerial Decisions, Corporate Performance and Shareholder Value

If we accept that the most important role of managers is to take decisions that will improve corporate performance and shareholder value [14,16], while of course being mindful of the impact of their decisions on other stakeholders [3,33,34], we can conceive a model wherein corporate performance outcome, and by extension shareholder value creation is a function of the quality of managerial decisions [8]. This can be modeled as indicated below;

$$SHV=CP=f(QMD) \quad (1)$$

That is, Shareholder Value (SHV) invariably reflected by Corporate Performance (CP), which itself is a function of the Quality of Managerial Decisions (QMD).

We can further argue that the quality of managerial decisions (QMD) is a function of a number of variables, critical amongst which are; (i) the Managerial Cognitive Capacity (MCC) or knowledge/skills of the manager (decision maker); (ii) the quality of relevant information (QI) available to him about the problem; (iii) the timeframe (T) within which he needs to make the decision. In other words;

$$QMD=f(MCC,QI,T) \quad (2)$$

This expression is such that when any one of managerial cognitive capacity (MCC), quality information (QI) and time-frame (T) is missing (has a value of zero), the quality of the decision is adverse (zero). Therefore, these could be classified as base determinants of quality of managerial decision-making (QMD).

Following the increasing competition among firms and ever-changing customer taste, the dynamics of managerial decision changes from time-to-time [35]. Quality of Managerial Decision (QMD) therefore requires flexibility in managerial cognitive capacity, information and time. Therefore, quality of managerial decision may be enhanced if the decision scenario has some embedded Flexibility (F), which is modeled as follows:

$$QMD=f((MCC,QI,T),F) \quad (3)$$

Combining the assertions in eqns. (1-3), we can hypothesize that the Quality of Managerial Decisions (QMD), is a function of Managerial Cognitive Capacity (MCC), Quality of Information (QI) available to the manager, the Time Frame (T) available to take the decision and the Flexibility of the decision context. This has direct impact on the corporate performance and shareholder value creation. This can be modeled as follows;

$$QMD=f((MCC,QI,T),F) \rightarrow CP \rightarrow SHV \quad (4)$$

Flexibility here refers to the ability of the decision maker to (1) delay or extend the time within which the decision can be made (Time Flexibility); and (2) change the problem parameters in a way that the risk of an unfavorable outcome is reduced and the decision outcome is more predictable (Scope Flexibility). Ability to delay the decision (Time Flexibility) may create opportunities for the decision maker to improve his cognitive capacity by learning a new skill/technique critical to evaluating the problem and taking the decision, or consulting with others who have the required skill, thus improving MCC in eqns. (2) and (3). Time flexibility may also present the decision maker with the opportunity to gather more relevant information (thus improving QI in eqns. (2) and (3), which may improve the overall decision outcome. Scope Flexibility, the possibility of changing the parameters of the problem, may improve all the critical decision drivers, MCC, QI and T, and thus improve the prospect of the decision maker taking better decisions.

The implication of this is that all managerial decisions that have impact on corporate performance and shareholder value must be driven by some knowledge, relevant information and must be executed within a finite timeframe. The absence of flexibility by itself does not make decision outcome adverse. Its presence may however enhance decision outcomes. Where any one of managerial cognitive capacity, quality of information and timeframe is missing (has a value of zero), the quality of the decision is adverse (zero) and will not add any meaningful contribution to corporate performance or shareholder value. This is because of the interactive and reinforcing relationship between MCC, QI and T. When managers lack knowledge about their field of management or lack specific skills/competence (cognitive capacity) with respect to a particular problem/decision, they are likely to make erroneous and performance depleting decisions. The same is likely to be the case when managers lack relevant and/or adequate information about the problem/decision at hand. And where the manager has adequate cognitive capacity and information, but no time within which to apply these to a problem/decision, the outcome is likely to be adverse.

We can extend this argument to a hypothetical situation in which at least 2 of the variables, MCC and QI are poor, that is negative. In this case the decision outcome will have an adverse impact on corporate performance and shareholder value (i.e., value erosion). MCC can be said to be negative where the manager or decision maker lacks the knowledge or skill to competently evaluate the problem and take an informed decision. QI can be said to be adverse (negative) when the information is irrelevant, outdated and/or wrong and thus is unsuitable for evaluating a problem with a view to taking an informed decision. Likewise, time becomes adverse when the timeframe is insufficient or not available to make decisions.

We can perhaps hypothesize that in the situation where one of the elements, say cognitive capacity is lacking (i.e., where the manager applies the wrong skills, techniques to solving the problem), then the decision outcome may actually have a negative value for the shareholders and for corporate performance. But time flexibility in terms of availability/extension of time and opportunity for collaboration, consultations or training to acquire more knowledge, acquire more information and more time for decision-making can make the decision more robust and thus yield better quality of managerial decision outcome, improved corporate performance and shareholder value. In the absence of such flexibility, so long the others variables are available in a positive sense; decisions can still be made to yield improved corporate performance.

The corporate business environment has become increasingly competitive and proper monitoring of management decision-making processes and corporate performance has become imperative [36]. Managerial decision-making involves the process of well thought-out choices or options, with the availability of sufficient knowledge, information and time for evaluating these options. The process

involves the use of information and the literature has delineated the use of information by managers into two groups of satisfier and maximizer with time-dependent trade-offs. The satisfiers are the set of managers who make decision with the minimum possible amount of information which yield an outcome that is palatable with the objective of maximizing shareholders value. Meanwhile, the maximizers are the set of managers that take their time to gather more information relevant to the decision-making process, and who can thus make optimal decisions that gives the best outcome for shareholders value. The use of time and information as proposed are dependent on the ability of the decision maker to understand the managerial process.

Financial Intelligence (FI) and Financial Intelligence Quotient (FIQ)

The recent Global Financial Crisis (GFC) has highlighted the need for improved financial literacy among decision-makers in order to enhance their ability to make effective financial decisions and improve their welfare [37-41]. Financial literacy or financial intelligence is thus a necessity in the process of decision-making [42,43]. The idea of financial intelligence is relatively new in the empirical literature of decision-making. Very little empirical and theoretical studies have been conducted on the subject. So the academics field has not really provided sufficiently robust definitions for financial intelligence though some are observable in the literature [37,40,44,45]. The literature has used financial intelligence interchangeably with the financial literacy and financial knowledge and there has not been established an empirical measure of financial intelligence [37,44].

In terms of literacy, Huston [37] defined financial intelligence as the ability of an individual, especially consumers of financial products, to make effective financial decisions. According to the OECD INFE (Organization for Economic Cooperation and Development-International Survey of Adult Financial Literacy), financial literacy is defined as "a combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing". This relates financial knowledge to the welfare need of an individual. Similarly, the Wikipedia search engine defines financial intelligence as the ability of an individual to obtain and manage his/her wealth by understanding how money works. Mohd et al. [45] and Samuel et al. [46] equally defined financial intelligence as a reflection of an attitude or the ability of an individual to improve his or her financial knowledge so that he or she has the ability to solve money problems for better financial position or condition as every aspect of life is linked one way or the other with money. Remund [47] asserts that financial intelligence is "a measure of the degree of understanding of key financial concepts and the ability and confidence to manage personal financial decisions through appropriate short-term decision-making and sound long-range financial planning, while mindful of life events and changing economic conditions".

Berman and Knight [48], emphasizing the corporate need for financial intelligence conceptualized it as the understanding of how financial success is measured in a business entity in terms of decreasing running cost, increasing quality of products, increasing productivity, mergers and acquisitions, increasing growth (revenue and profits), return on investments (ROI), increased market share, optimizing cash flow, increasing profitability and how the financial position impacts on the performance of the business. Nazemoff [49] defined financial intelligence as the ability of an individual to collect and use financial data to generate insights that inform intelligent decision-making regarding items such as cash flow, profitability and growth, as well as quality and productivity. These definitions suggest that financial intelligence in an organization has to do with the knowledge of ensuring financial soundness [43].

Measurement of financial intelligence (FI) can be captured using financial intelligence quotient. Though the two expressions/concepts are sometimes used interchangeably, there is no established method of objectively measuring financial intelligence quotient (FIQ). Earlier studies have adopted different variables and constructs to capture financial intelligence quotient. Following the work of Huston [37], Mohd et al. [45], financial intelligence quotient was captured by developing constructs for financial knowledge, financial attitude, trust and financial behavior. Berman and Knight [48] highlighted four different skills that are required for an individual to be financially intelligent; ability to understand the foundation in terms of financial measurement, statements of account, cash flow and balance sheet; ability to understand the art in terms of the principles and assumption; ability to understand the analysis in terms of making deductions based on the information on the position of the corporation, and understanding the big picture in terms of the values objective of the corporation. In a similar fashion, Remund [47] stressed that the literature has categorized financial intelligence into five different skills, namely; knowledge of financial concepts, ability to communicate about financial concepts, aptitude in managing personal finances, skills in making appropriate financial decisions, and confidence in planning effectively for future financial needs. Huston [37] emphasized the need for a good measure of financial intelligence in order to identify when there are deficiencies in financial knowledge and the resulting welfare-reducing financial choices. It is worth noting that financial intelligence and financial intelligence quotient alike are quite different from basic intelligence quotient. Measuring financial intelligence of an individual is not to test the individual's intellectual capability but rather, to measure skills on basic financial concepts, the application of which shapes good financial behavior and well-being [41,43].

Financial intelligence has the advantage of improving the capacity of individual managers within an organization to better improve their decision-making based on the financial position of the organization [38,42,43], and further reduces the conflict of interest among departmental managers since every manager is able to understand the financial position of the organization [48]. This will facilitate improvement in corporate performance and shareholder value.

Empirical studies such as Sabri [50], Taft et al. [38], Schmeiser and Seligman [40], Fernandes et al. [51], Gustafsson and Omark [52] and Mohd et al. [45] have established that financial intelligence has significant impact on the financial wellbeing of individuals. Ehringer and Soderstrom [43] presented findings that individuals with financial intelligence have good chance of increasing their expert power and informational power which provides them with the ability to make decisions to increase the market share of their employees, invariably leading to improved corporate performance. Wise [42] provided evidences that entrepreneurs who produced financial statements more frequently had a higher probability of loan repayment and a lower probability of closing their venture involuntarily.

For the most part however, financial intelligence/literacy has been viewed and defined largely and almost exclusively from the perspective of the individual and with respect to personal financial management.

The Concept of Corporate Financial Intelligence (CFI™)

Finance and financial decisions are important factors and are

integral to a business corporation as the activities of each unit of the organization in one way or the other have to do with financing [38,42]. The need to further enhance the financial knowledge of students was emphasized by Bender et al. [53]. Irrespective of the discipline, it would be beneficial to include corporate financial education into curricula through multidisciplinary projects and courses. In addition, Nazemoff [49] suggested that financial intelligence is more of a tool for those involved in the process of designing strategic goals, objectives and initiatives of an organization. The study further admonished managers to do away with the conception that only those within the finance unit of the organization or the chief financial officer (CFO) needs financial intelligence as everyone is saddled with the task of understanding and measuring financial success. Also, Berman and Knight [48] put forward the idea that having acquired good working knowledge and the ability to understand and analyze the implications of financial positions of an organization; individual managers need to understand the big picture of the organization.

Like most of the other research on financial intelligence, Wise [42], and Ehringer and Soderstrom [43] treated financial intelligence on an individual basis. They suggested that the point of departure is at the individual level and the benefits accrue to the organization as a whole, since financial intelligence improves decision-making of managers. Dahmen and Rodríguez [54] found evidence that there is clear connection between inadequate financial intelligence and financial difficulties experienced by SMEs.

It is observed however in the literature that there is as yet no operational definition of financial intelligence [37,40,45]. Most studies on the subject matter had actually been on financial intelligence for increased wellbeing of the individual, which is not necessarily associated with the success of the organization [38,39,41]. There is however, increasing call for better financial knowledge of individuals and managers alike to enhance their decision-making capacity within the context of the organization [38]. However, no established means of measurement has been developed [42]. Moreover, despite the increasing call for financial intelligence for success of businesses, the emphasis of the theoretical and the empirical literatures have been on individual benefit of financial intelligence.

Following Berman and Knight [48], Nazemoff [49] and Ehringer and Soderstrom [43], financial intelligence is required by members of the management team beyond the financial manager for improved decision-making. In light of the need to reduce involuntary closure of SMEs and corporate entities, Wise [42] and Bender et al. [53] stressed the need for financial intelligence by owners and managers of businesses. This exploratory study proposes a firm-wide concept of Corporate Financial Intelligence (CFI™) as a framework for improving organizational performance and shareholder value.

This study also proposes an operational definition of Corporate Financial Intelligence as:

"The conscious design and institutionalization of corporate policies, culture, financial information systems, processes and the development of the financial intelligence of managers within an organization, which seeks to deliberately employ financial information, techniques and metrics in analyzing problems across all functional domains of the business, with a view to designing solutions, taking decisions, and evaluating and rewarding performance in a way that drives corporate performance and improves shareholder value in a measurable way".

CFI is premised on the notion that all managerial decisions have financial implication, irrespective of its originating functional domain [49] and that decision outcomes must improve the financial performance of the organization and increase shareholder value [33,40,42]. It assumes that all managers must possess Managerial Financial Intelligence (MFI) and thus must employ financial acumen/financial intelligence in evaluating problems and taking decisions within their various functions.

It is therefore possible to identify and measure specific attributes and outcomes that characterizes in a perceptible way that an organization has corporate financial intelligence. We should also be able to compare the level of corporate financial intelligence of various organizations within and across industry and time and rank them accordingly based on their performance outcomes and measurement of shareholder value. This leads us to the concept of Corporate Financial Intelligence Quotient (CFIQ™). Proper conceptualization and measurement of CFIQ and its ranking could be a basis for efficient capital allocation and investment. It could also be a means of incentivizing managers and staff to strive for improved corporate performance and shareholder value.

Corporate Financial Intelligence Quotient (CFIQ™): A Conceptual Model for Measuring Corporate Financial Intelligence (CFI™)

When a business entity has a shortfall of financial literacy needed for successful operation, the risk is more than that of individual business risk [54]. Corporate financial intelligence on the other hand is a firm-wide concept, rooted in the culture, system, processes, information systems, and all decision makers in the organization. CFI can be measured using corporate financial intelligence quotient (CFIQ). CFIQ is therefore conceived as a measure of the level of corporate financial intelligence of an organization. It is the measurement of specific attributes that characterize an organization in terms of its level of corporate financial intelligence. This follows in part from the literature by identifying factors that are responsible for financial intelligence of manager(s) [37,49,50,54].

As suggested by some scholars, the process of generating, increasing and institutionalizing financial intelligence follows the learning process of acquiring financial knowledge to become financially literate [37,43]. For that reason, the role of Bloom's taxonomy is relevant. As presented in Huitt [55], Bloom [56] proposed three domains of learning, which are cognitive, affective, and psychomotive. Each of these domains is a categorization of the learning process based on acquisition of knowledge in terms of mental skills (cognition), development of attitude through affections and emotions, and the development of physical ability in terms of actionable skills/competencies. These domains were later divided into subdivisions to take learning process from the simplest learning activity to the most complex activity.

Conceptually, there are a series of components or attributes that can lead to the measurement of CFI as a metric, CFIQ. At this stage however, we have conceived CFIQ to be a quotient of five constituent factors, which are important to assessing the level of corporate financial intelligence, and we have attempted to map these to the Bloom's taxonomy. These attributes are: (i) Managerial Financial Intelligence (MFI): Cognitive and affective dimensions (ii) MFIS (Management and Financial information system quality/diffusion/distribution timeliness etc.): Cognitive and psychomotive dimension (iii) Use of key financial performance indicators for decision making/evaluation and reward systems (KFPI): Psychomotive dimension (iv) Managerial commitment to CFI (Policy and budget spend on financial training for staff etc.): Cognitive, affective and psychomotive dimensions and

(v) Organizational culture/structure that supports CFI: Affective dimension i.e., information and time/capacity and willingness to generate and share financial information on a timely basis to relevant personnel, including institutional capacity to utilize financial information in policy formulation etc.).

Managerial Financial Intelligence (MFI) speaks to the cognition domain, and is the individual and collective financial intelligence of the managers of the organization and the active use of this intelligence in taking financial and other decisions that invariably have financial implication for the business. Studies such as Remund [47], Huston [37], Berman and Knight [48], Dahmen and Rodríguez [54], and Nazemoff [49] had stressed knowledge of finance as a starting point of financial intelligence. Operationally, MFI represents the level of financial intelligence that mangers possess and actively employ, and their degree of awareness and/or willingness to adopt Corporate Financial Intelligence in their organization. It is the ability of managers to take decisions in the business using financial acumen and understanding the financial implications of their several and collective decisions as manager.

Conceptually, managers can be classified on the basis of their Managerial Financial Intelligence (MFI) at: (i) A cognitive level, having financial intelligence and awareness of the importance corporate financial intelligence (ii) An emotive/affective level, appreciating the need for corporate financial intelligence and (iii) A psychomotive level, willingness to adopt and institutionalize corporate financial intelligence. Representing this on a 2 × 2 matrix, we can summarize this concept as shown in Figure 1.

The amount of relevant financial (and non-financial) information available to managers in an organization, and the processes and systems for generating, storing, validating and distributing this information is characterized by the Management and Financial Information System (MFIS). MFIS have significant impact on the level of financial intelligence displayed by managers in the process of making decisions. MFIS also relies on information and cognitive dimensions, which relate to acquiring more knowledge as enumerated in the Bloom's Taxonomy. Evident in Ehringer and Soderstrom [43] is the need for a reliable information system as they emphasized the role of information processing in developing financial awareness in managers. Financially intelligent managers are expected to identify relevant information and how to source for it. The MFIS should be able to provide broad information that captures internal and external financial characteristics relevant to the organization.

Corporate performance as suggested by Berman and Knight [48], Wise [42], Dahmen and Rodríguez [54], and Nazemoff [49] are the outcomes of improved financial intelligence/knowledge which lead to increase in shareholders' value. KFPI is the use of key financial performance indicators for decision-making, evaluation of performance and the reward systems. Movements in Key Financial Performance Indicators will be a good reflection of the level of financial intelligence possessed by the managers.

Therefore, we propose that corporate financial intelligence (CFI) can be measured using corporate financial intelligence quotient (CFIQ) and CFIQ is conceived as a linear combination of five key variables weighted by coefficients, derived using discriminant analysis. This can be modeled as follow;

$$CFIQ=\alpha_0+\alpha_1 MFI+\alpha_2 MFIS+\alpha_3 KFPI+\alpha_4 MCM+\alpha_5 OST+\kappa \quad (5)$$

where MFI, MFIS, KFPI, MCM and OST represent Managerial Financial Intelligence, Management and Financial Information System Quality, Key Financial Performance Indicators, Managerial Commitment to CFI and Organizational Culture/Structure that supports CFI. α_1, α_2, α_3, α_4 and α_5 are coefficients, α_0 and κ are constant parameter and error terms that capture other factor not factored in the modelling of CFIQ, where $\alpha_i>0$, i=0, 1, …, 5. Using a principal component analysis tool, eqn. (5) should lead to a measure of the various elements that determine CFI within an organization, obtain empirical values for these elements and thus determine the CFIQ level of an organization. A comparison of the level of CFI of various organizations can thus be made. Further, a study of the relationship between CFIQ and performance of these organizations can be estimated. It is speculated that the organizations with well-established CFI frameworks (high CFIQ) will outperform those with low CFIQ scores.

The Quality of Managerial Decisions (QMD) as proposed by the model in eqn. (4) is a function of a number of variables, which include Managerial Cognitive Capacity (MCC) and Quality of Relevant Information (QI) available for decision-making. This paper further proposes therefore that Corporate Financial Intelligence (CFI) can support and improve the Managerial Cognitive Capacity (MCC) and Quality of Relevant Information (QI) required for high quality decision-making that can improve organizational performance and shareholder value.

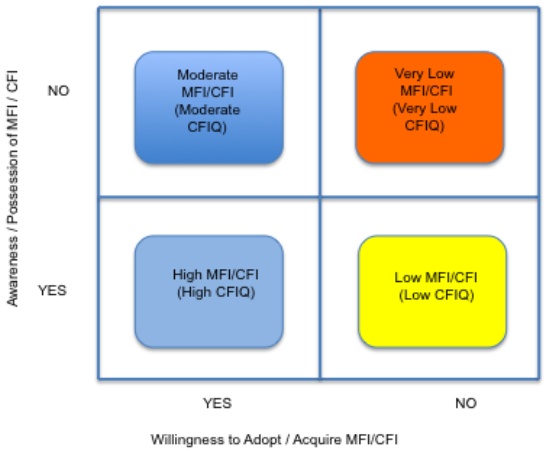

Figure 1: Managers awareness and willingness to acquire/adopt managerial financial Intelligence and corporate financial intelligence.

Further Research Opportunities

When a business entity has a shortfall of financial literacy required for successful operation, the risk is more than that of individual financial risk [54]. The entire organization will be subject to the risk that financial and non-financial resources will not be sourced and deployed in a manner consistent with the objective of maximizing shareholder value.

Corporate Financial Intelligence (CFI) has been conceived as a framework/tool for mitigating this risk. With CFI, organizational design and decision-making philosophy will be premised and executed on the underlying assumptions that: (i) A business is setup with the objective of maximizing returns to, and value of the shareholders while being responsive to the needs and impact of its actions on other stakeholders; (ii) In pursuit of this objective(s), managers take decisions which essentially reduces to identifying appropriate opportunities for investments, and sourcing and deploying financial and non-financial resources in the most efficient manner consistent with the objectives of maximizing shareholder value based on some risk-return trade-off [33]; (iii) All managers, irrespective of their functional areas of responsibilities, take decisions which have a financial impact on the organization and so has the potential of increasing or destroying shareholder value; (iv) All financial and non-financial managers must thus have the capacity to understand the financial consequences of their decisions and likely impact on shareholder value; (v) The organization should be designed to support, equip and empower all decision-makers with the information, systems, processes, expertise, culture and performance measurement and rewards system that recognizes the central role of finance in decision-making and the operations of the business.

In validating this concept, following the suggestions and arguments made in this paper, further research effort should be directed towards: (i) Ascertaining the behavioral intention of managers/organizations in adopting a CFI framework in their decision-making processes and organizations; (ii) Rigorously characterizing and measuring the attributes that determine Corporate Financial Intelligence (CFI); (iii) Developing an empirical model for measuring Corporate Financial Intelligence Quotient (CFIQ), which is a measure of the degree to which an organization's managers, processes, systems, culture, operating philosophy and performance, reflect the institutionalization of Corporate Financial Intelligence (CFI) in decision-making; and (iv) Measuring and ranking organizations according to their CFIQ measure. It is likely that organizations with high CFIQ will outperform those with low CFIQ in terms of shareholder value maximization (Figure 2).

Conclusion

This exploratory study is premised on the fairly well established understanding that managers within an organization are responsible for taking decisions aimed at improving corporate performance and enhancing shareholder value. At its core, a business is essentially a vehicle for generating incremental cash flows, starting with the sourcing of funds from capital providers (debt and equity), and the efficient allocation of these funds in accordance with the opportunities, objectives, strategies and operations of the organization, with a view to enhancing the generation of incremental and distributable cash flows to the shareholders, which is a measure of the increasing wealth and value of the business. Thus, all managerial decisions, irrespective of the originating functional domain of the decision, impacts the sourcing and allocations of funds and thus the potential of enhancing or destroying corporate performance and shareholder value. In other words, all managerial decisions have financial implications. Thus while managers, irrespective of their functional expertise and responsibilities, must develop and possess financial intelligence, this paper argues for organizations to develop and institutionalize corporate financial intelligence (CFI), a broader and organization-wide conceptual framework, which requires firms to have a culture, processes, systems and human capital that places financial knowledge, information, competencies and metrics at the heart of its decision-making, resource

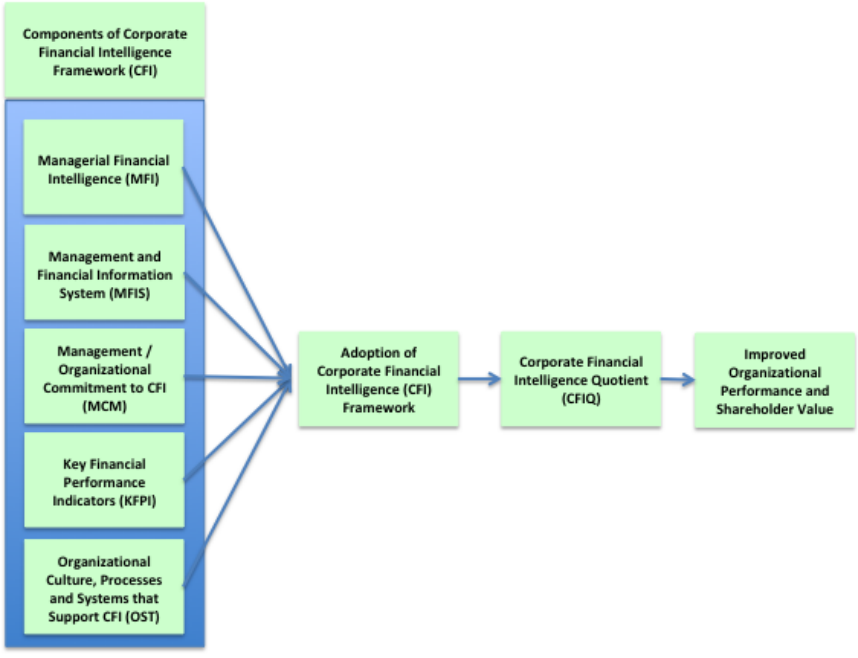

Figure 2: Corporate financial intelligence framework.

allocation, risk evaluation, performance evaluation and reward systems, as it pursues its objectives and as a means of improving corporate performance and shareholder value. The paper further proposes the concept of corporate financial intelligence quotient (CFIQ) as a means of measuring the extent to which an organization has instituted corporate financial intelligence in its practice. It is conceived that organizations with higher levels of CFIQ are less risky and more likely to be better performers, and generate higher returns to shareholders than those with lower measures of CFIQ. CFIQ can thus be used potentially by investors as one of the considerations in deciding how to allocate their investment funds. The challenge remains in testing of the perceived usefulness and adoption intentions of such a framework amongst managers, the empirical validation of the concept of corporate financial intelligence (CFI), and the characterization and measurement of the elements/attributes of CFI in determining the corporate financial intelligence quotient (CFIQ) of firms. This is the subject of on-going investigations. This study provides opportunity for ongoing research on the relationship between corporate performance, shareholder value and the institutionalization of corporate (organizational) financial intelligence.

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