Identification and Evolution mechanisms of Dynamic Managerial Capabilities (DMCs) in the Grain Milling Sub-sector

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1. Introduction

The changes in the business environment necessitates firm capabilities to evolve in responding to the threats and opportunities exposed by the environment (Helfat & Peteraf, 2003a). By studying the evolution of capabilities helps us understand how firms can sustain a competitive advantage over a period of time (Teece, 2007). Over decades strategic management research has been skewed to organizational dynamic capabilities[1] rather than individual´s or manager´s dynamic capabilities (Mollick, 2012). Thus explanation of the Dynamic Managerial Capabilities is still missing. DMC signifies *"the capacity of managers to purposefully create, or modify the resource base of an organization"* (Helfat et al., 2007, p. 24). However, in the latest literature (Helfat & Martin, 2015; Helfat & Peteraf, 2015; Kor & Mesko, 2013; Teece, 2014) DMCs research has started gaining attention.

DMC theory argues that firms whose managers have superior DMCs can adapt and change more successfully than firms whose managers have less effective or no DMCs (Helfat & Martin, 2015). A manager who rates superior in DMCs, performs the function of asset orchestration (search for resources and their selection, investment, deployment and configuration), create value through developing and building of assets that affect firm abilities (Helfat & Martin, 2015; Helfat et al., 2007). Adner and Helfat (2003) claim that managers in organizations are in charge of strategic change, building organization resources and competences hence firm performance. Creativity and innovation within organizations depend in part on the capacity of the managers/ top management to sense and seize opportunities (Harris and Helfat, 2013). Heterogeneity in DMC explains differences in managerial actions and decisions and hence differences in sustained firm performance (Andersson & Evers, 2015). It is thus important to understand the DMCs and their evolution in order to explain capabilities differences among managers and hence sustained firm performance.

[1] (Barney, 1991; Grant, 1991; Helfat et al., 2007; Li & Liu, 2014; Makkonen, Pohjola, Olkkonen, & Koponen, 2014; Nath, Nachiappan, & Ramanathan, 2010; Niehaves, Plattfaut, & Becker, 2013; Ortega, 2010; Protogerou, Caloghirou, & Lioukas, 2011; Zott, 2003)

Since DMCs theory introduction (Adner & Helfat, 2003), very few studies exist most of which are theoretical and very few empirical (Bellner, 2013). The business environment in which firms operate shapes the nature and evolution of capabilities (Helfat & Peteraf, 2003a). Thus the DMCs and their evolution mechanisms are context dependent as business environment differs from one business context to another. The existing studies (Helfat & Peteraf, 2003a; Helfat & Raubitschek, 2000; Helfat, 1994; Zollo & Winter, 2002) on the evolution of firm capabilities identify circumstances (prior firm/manager experience, business environment, product innovations, and market entry decisions) that shape capabilities.

The developing countries context provides a theory testing ground due to various structural economic adjustments that have recently taken and continue to take place. Meyer & Peng (2005) comment that the emerging and developing economies have being undergoing various fiscal adjustments and providing a ground for testing new organizational theories. Such a test adds to the body of knowledge with regard to the identification and evolution of DMCs and DMC theory development. For instance Tanzania, since 1990s has been on the move from socialism to market economy and has been implementing the Structural Adjustment Programme (SAP) recommended by the World Bank and IMF in order to adjust the business environment that would fuel the growth of the private sector (Wangwe et al., 2014). Such SAP transformations in Tanzania have witnessed the grain milling sub-sector move from being in the government hands (National Milling Corporation) to newly formed private companies competing on market basis. This has given to the rise of new private enterprises in the sub-sector. By 2010 the sub-sector had a total number of 1292 firms whereby 59%, 39%, 1%, 1% were micro (1-4employees), small (5-49employees), medium (50-99employees) and large (above 100 employees) enterprises respectively (National Bureau of Statistics, 2012). The grain milling sub-sector is potential in terms of employment, GDP contribution, food security and other spiral over effects (Bagachwa, 1992).

The sub-sector history reveals that after advent of the privatization policies, new private firms emerged and the existing ones such as Said Salim Bakhresa (SSB) acquired the previous National Milling Cooperation sets in certain regions like Dar es Salaam (Sutton & Olomi, 2012). Since 1990s it has been unclear for firm performance differences in the sub-sector. It is observed that some firms like SSB, Azania, Power-Foods had a humble begging but of late they are giants in the sub-sector (Donley, 2012; Sutton & Olomi, 2012). Some other companies have collapsed in the early stages, some have remained stagnant, others survive and some obtain supernormal profit. Donley

(2012) documents the success story that there are some companies in the Tanzania grain milling sub-sector that have excelled in the East, Southern and Central Africa. Most of these companies are family businesses it would thus be interesting to disclose the dominant DMCs and how the manager's DMCs evolve to cope with the environmental changes.

Despite the potential of the subsector and mushrooming of private entities, the phenomenon of some being successful and some not is still undocumented. The existing studies on DMCs (Adner & Helfat, 2003; Bellner, 2013; Helfat & Martin, 2015; Helfat & Peteraf, 2015) are theoretical and have not responded the phenomenon in question. Most of these studies have introduced the theory and few such as Bellner (2013) have identified the DMCs in their respective contexts. There are some studies (Helfat & Peteraf, 2003a; Helfat, 1994; Macpherson & Jones, 2004; Zollo & Winter, 2002) that have tried to explain evolution of capabilities however, skewed to organizational capabilities rather than managerial capabilities. Studies focusing on grain milling sub-sector (Amaro, Paul, Rymer, & Cary, 2009; Bagachwa, 1992; Donley, 2012; Worley, Sievertsen, & Desmond, 1999)have not addressing the current issue in question.

The successful and unsuccessful scenario implies heterogeneity of capabilities among firm managers in the sub-sector. The Central question posed is how do DMCs in the grain milling sub-sector evolve? In responding to the evolution of DMCs the study identifies and classifies the DMCs in the grain milling sub-sector. Understanding DMCs evolution aims at explaining the practical and policy concerns in the sub-sector. The practical concerns include explanation of the DMCs heterogeneity among managers and hence explaining firm performance differentials. Due to the potentiality of the sector with regard to food security concerns, implications from the study are informative in the policy. The study makes both theoretical and empirical contribution on DMCs research.

The paper is structured in five sections notably; introduction, literature review that presentation the theoretical and empirical frameworks; methodology section, findings and discussion and finally the conclusion and recommendations

2. Literature Review

2.1 Theoretical Framework

Theory of Dynamic Managerial Capabilities

The DMC theory anchors on Resource Based View (RBV) and Dynamic Capability View (DCV) (Barreto, 2010). From RBV, it is identified that for a firm to realize its long term performance, its resources/capabilities have to be valuable, rare, imitable and non-substitutable (VRIN) (Barney, 1991). Heterogeneity and imperfect mobility of resources/capabilities are the pre-requisites for rent generation from resources hence sustained firm performance (Barney, 1991; Eisenhardt & Martin, 2000). DCV complements RBV inefficiencies of not explaining firm performance under changing business environment (Teece, Pisano, & Shuen, 1997). DCV theorizes that for the firms to realize long-term performance, they need to possess competences/capabilities that sense, seize and reconfigure or transform firm internal and external competences to address changing environments (Teece, et al., 2007).

DCs are identified as complicated routines comprising a variety of managerial and organizational processes (Helfat et al., 2007; Protogerou, Caloghirou, & Lioukas, 2011). Teece being a pioneer of DC in their article of Teece et al. (1997) they define DC as "a firm's ability to integrate, build and reconfigure internal and external competencies to address the rapidly changing environment"(1997, p. 516). There have been several definitions of DCs. However, this study adopts Helfat et al. (2007)'s definition where DC is the capacity of a firm intentionally to create, extend and modify its resource base. The justification of the choice is DCs do not necessary operate in a rapid changing environment only even in moderate environment as argued by Eisenhardt & Martin (2000). Teece's original definition limited the application of the concept only in rapid changing environment such as IT thus limiting its use in the subsectors such as grain milling. A capability refers to the "firm's ability to perform a particular task or activity" (Helfat et al., 2007, p. 1). A capability may be dynamic or operational however, it is not the focus of this study to go into details of differentiating the two. DCs' ingredients are organization processes (directed at learning and innovation) and decision frames (managerial processes) that inform the organization's investment choices (Helfat et al., 2007).

DCV theorizes that firms need to develop new capabilities for identifying opportunities and quickly responding to them (Teece, 2014). DCs aid the firm in deploying new strategies in response to changing environment by combining and transforming the available resource base in new and different ways (Ambrosini & Bowman, 2009). Teece et al. (1997) identify that SCA is a function of firm's processes, positions and paths. DCs are often characterized as unique and idiosyncratic processes that emerge from path-dependent histories of individual firms (Helfat and Peteraf, 2003; Teece et al., 1997).

Organizational resources and prior paths provide a starting point or initial position while paths are strategic alternatives available for the firms and processes (organizational or managerial) are where DCs reside (Teece et al., 1997). DC Organizational processes are named Organization Dynamic Capabilities (ODC) while those pertaining to managerial processes are named as Dynamic Managerial Capabilities(DMC) (Helfat et al., 2007). The focus of this study is DMCs due to limited scholarship on the phenomenon. In a changing (dynamic) environment, a firm may use its DCs (processes) to change its original positions and move along a certain strategic path to achieve SCA. Thus the strategic direction of a firm is constrained by its positions and prior paths(1997, p. 524). Since the introduction of the DC scholarship still there are many questions, it requires more clarification and development of the underpinnings focusing on empirical observations (Helfat et al., 2007). They add that the concept lacks details with regard to the kind of processes (organizational or managerial) that make the firm move from its initial position to a new one.

In a changing business environment firms have to alter their resource base/position (Teece et al., 1997) to ensure heterogeneity among other firms and hence SCA. During the time of change firms cannot continue relying on the positions or prior paths rather they have to adapt and exploit the existing opportunities in the business environment. The DC link to SCA is through the search and selection, configuration and deployment processes (Helfat et al., 2007). They add that management of the firm is in charge of asset utilization and orchestration in achieving new combination and co-alignment something which is essential for the DCV. They further argue that orchestration requires decision making and entrepreneurial capacity. They conclude that managers play a critical role in orchestration and therefore are important when discussing DCs. Decision with regard to search and selection of resources is the part of asset orchestration function. Asset orchestration includes the search, selection and configuration/coordination functions.

Search includes identification of opportunities and threats where managers in business entities take this responsibility (Helfat & Eisenhardt, 2004). Helfat et al. (2007) put an argument that not all managers perform this aspect of DC equally well. This implies that managers differ in the way they recognize opportunities or mitigate a threat in the business environment. Some managers fail to respond at all as exemplified by Adner & Helfat (2003). Selection of the resources highly depends on the fitness of the DMCs. Managers differ with regard to their selection of resources. Underlying the search and selection functions are key elements of DMCs notably; Managerial Cognition, Managerial Social Capital and Managerial Human Capital (Adner & Helfat, 2003; Helfat & Martin, 2015; Helfat et al., 2007). DMCs and their associated elements (MC,MSC,MHC) may have low evolutionary fitness if applied in a wrong context (Helfat et al., 2007). Some of the paths/strategic alternatives that could be undertaken may include learning from partners, joint ventures, acquisitions and innovation. Constraints of change on the side of DC may include managers themselves lacking foresight, relational capabilities, having cognitive biases and resource base of the organization.

It should be recalled from Teece et al. (1997) that in case of change in the environment, markets do not adjust accordingly, managers are required to integrate, build, reconfigure internal and external competences to address the rapidly changing environment. Strategic managerial roles commenced to gain a upper hand during time of change and later Adner & Helfat (2003) named them as Dynamic Managerial Capabilities (DMC). No significant differences among the DMCs definitions. For instance, Helfat et al. (2007, p. 24) define DMC as "*the capacity of managers to purposefully create, or modify the resource base of an organization"*. DMCs are "*capacities with which managers build, integrate and reconfigure organization resources and competences*" (Adner & Helfat, 2003, p. 1012). Helfat & Martin (2015) amplify the capacity of managers that it may be individually or in teams. Adner & Helfat (2003) argue that variance decomposition of corporate effects lead to differences between firms. Along the same lines Andersson & Evers (2015) identify that DMCs help to explain differences in managerial actions and decisions. In other words heterogeneity among managers is the source of business performance differences.

The DMC extends from DCV with focus on the role of managers, individually and in teams. The focus of DCV is on strategic change rather than organization change while DMC view is managerial impact on strategic change and firm performance (Helfat & Martin, 2015). They identify that DMC view theorizes that managers with superior DMCs can adapt and change more successfully than managers who have less. The view explains the relationship between managerial decisions and actions; strategic change and corporate performance under the conditions of change. DMC view identify that firms differ in DMCs and thus the source of heterogeneity in firm performance. Adner & Helfat (2003) provide evidence that CEOs or top managers aid strategic change whereby managers build and reconfigure organization resources and competences in addressing the changing environment. DMCs not only affect the internal part of the organization but also its external environment (Harris & Helfat, 2013). The strategy literature around DMC view still leaves inconclusive arguments. This study adopts DMC view so as to be able to explain how differences in managerial capabilities may be associated firm performance heterogeneity. (Adner & Helfat, 2003) in question involving why firms differ in performance could be best asked why do managers differ?

Management scholarship as presented earlier is traced far back form the book entitled *"The Functions of the Executives"* by Barnard (1938) that introduced the role undertaken by managers in the organizations. However, the roles identified in this era focused more on operational ones rather than strategic roles notably; control, supervision and administration. These functions only make the firm survive but not achieving SCA over others. He further narrows the role of the managers as limiting conflict and enhancing cooperation within the firm. Later, Baumol (1968) laments over the Economy Theory that didn't accommodate the roles undertaken by the managers in a business entity. He makes an argument that the economic theory for a long period of time has treated the manager in a firm as a passive calculator. The theory for long didn't provide room for the enterprise initiative alter the business environment. He distinguishes the roles of the entrepreneur and manager by considering the manager to undertake operational roles while entrepreneur have novelty in generating and implementing new ideas. However, with the current study, a manager on focus has to be an entrepreneurial manager with DMCs in the search, selection and reconfiguring of organization resources.

Adner & Helfat, (2003) provide a special emphasis on the roles of the managers in a changing business environment by introducing the concept of Dynamic Managerial Capabilities. Their argument is the heterogeneity of business performance being the result of variance in the decomposition of corporate effects. They criticized the previous studies for lacking time variation in measuring the corporate effects on firm performance. Furthermore, they identified that most of the studies focused on organizational rather that managerial dynamic capabilities. They used data from the US petroleum industry. Their findings reveal that under the changing environment uncertainty increases, managers are required to make judgement about the correct cause of action. Due to differences in DMCs composition, strategic choices will as well differ. They found that in an industry where managers face the same challenges corporate effects are statistically significant. Their study findings were consistent with Bowman & Helfat (2001). They conclude that differences in managerial decisions results in heterogeneity in firm performance. They argue that managerial decisions are result of the MC, MSC and MHC. Differences in MC, MSC and MHC lead to differences in managerial decisions and hence heterogeneity in strategic alternatives and firm performance. MC, MSC and MHC shape the organization resource and capability base. Top managers play strategic roles in response to the changing environment. They recommend the future studies to base on the conceptual model provided to raise more avenues of inquiry.

Helfat et al. (2007) in their book entitled *"Dynamic Capabilities: Understanding Strategic Change in Organizations"* dedicated some chapters on DMCs. In chapter two they focused on "Managers, markets and Dynamic Capabilities". Chapter four documented on "Executives, DCs and Strategic Change". Chapter eight on "DCs: Future Paths and Possibilities" provided the future direction of DMCs. The study focused on stimulating more discussion on the strategic roles of mangers in responding to a changing business environment. They identified the strategic and operational roles that managers undertake. The argument is DCs are manifested in the 3Ps of Positions, Processes and Positions. Positions are determined by the organization initial resources and prior paths, paths being the strategic alternative available for the firm and processes (organizational or managerial) transforming the initial position to a new one by adopting new paths. They provided more link with regard to the link on how the functions of DCs (search, selection, deployment and reconfiguration) and DMCs influence strategic change and firm performance. They further clarify the underling elements of MC, MSC and MHC on how they influence the decision frames and heuristics of the manager in the asset orchestration functions. Their scholarly writing provides light with some detailed cases borrowed from Adner & Helfat (2003). They recommend that the scholarship is still at its infant stage and more room is available for the future studies to explore on the role DMCs and firm performance.

Helfat & Martin (2015) focused on "*DMCs: Review and Assessment of Managerial Impact on Strategic Change*". Their debate focused on DMC influence strategic change and organization performance. They identify that DMCs extends from DC attention to the role of managers, individually and in teams. They consider DMCs as entrepreneurial capabilities of managers. It is a conceptual study that reviewed various studies in each of the three underpinnings of DMCs and how they link to strategic change and firm performance. They argue that managers differ in respect to these three aspects that are likely to affect different organization outcomes. They document that the literature identifies that the effect of DMC may be traced into two step processes; tracing their intermediate outcomes in terms of strategic change and assessing the impact of such change on measures of firm performance. However, they recommend that avoiding tautology the relationship of each managerial resources and firm performance may be traced straight away without tracing the intermediate strategic change. In their area for further studies they propose that areas that require contribution are ways in which managerial team heterogeneity affects strategic change and firm performance; interactions of the three underpinnings affect strategic change and why managers matter

Kor & Mesko (2013) in their study on DMCs: Configuration and Orchestration of Top Executives' Capabilities and firm's Dominant Logic consider DMCs as key mechanisms to achieve congruence between firm's competences and changing environment conditions. Managers serve this role by redefining the growth and opportunity boundaries of a firm and by designing its competitive positions in changing environment. Their concern was on DMCs producing change in firm's configuration of resources and competences. This was a theoretical study that developed a theory on how these functions create and sculpt the management team's absorptive capacity, which in turn shape the team's adaptive capacity. CEO and senior executives DMCs drive top management's ability to revitalize the firm's dominant logic and to achieve evolutionary fit. They encourage future studies to focus on providing more light on the co-evolution of DMCs and firm's dominant logic.

Sirmon & Hitt (2009) examined the contingent nature of resource investment and deployment decisions and firm performance. Their argument is against the background that they need to understand how managers utilize strategic resources to yield firm performance. They underscore that through DMCs managers undertake the asset orchestration functions of ensuring fit between resource investment and deployment. They identify that DMCs focus on manager's related decisions. Using a sampling frame from the US Banking Sector where firm size, age and charter (national class) as control variables. Their findings reveal that firm performance suffers when manager's decisions deviate from the norms of the rivals. However, firm performance is enhanced when the two (investment and deployment) resources are contingent. They conclude that resource management through asset orchestration is necessary for firm superior performance. In there are for future studies they advocate for need to understand how managers shape resource based advantages.

Andersson & Evers (2015) adopt DMCs to explore their roles in international opportunity recognition in international new ventures. It is a conceptual study that shows how DC can be created and enacted. They identify that DMCs facilitate the international opportunity recognition and thus leading to international firm growth. The study banks on an argument that very few studies exist exploring how firms identify international opportunities. It reviews the underlying factors of DMCs (MC, MSC, MHC) and how they facilitate the opportunity recognition. They argue that opportunity recognition is the function of the prior knowledge, social networks and entrepreneurial alertness. DMCs help to explain differences in managerial actions and decisions. They finally develop a conceptual framework that links the DMC elements, international opportunity recognition and international firm growth. They underscore that the three elements are correlated that later influence the opportunity recognition and later firm growth. Later the international firm growth in turn influences the elements of DMCs. In the area for future studies they recommend for further empirical research testing the developed model.

Synthesis of DMCs Theory and Empirical Literature Review

Grain milling subsector in Tanzania presents a platform for knowledge addition with regard to the DMC view. On the other hand the sub-sector benefits from the DMC scholarship. This is from the fact that DMC scholarship provides insights that are very useful to what is not responded in the sub-sector. It should be noted that there is scant of literature explaining what is taking place in the subsector. DMC and Grain milling sub-sector exhibit a win-win situation. DMC scholarship lacks empirical ground so it benefits from this study. On the other hand the insights from DMC explain the performance differences taking place in the sub-sector.

DMC conceptualizes on one hand that managerial decision making frames and heuristic are very important in executing the asset orchestration functions of search, selection, deployment and configuration. In undertaking these functions managers with superior DMCs stand a chance to effectively execute the asset orchestration functions than others and hence leading to superior firm performance. The problems leading to poor firm performance earlier in the grain milling sub-sector infer lack of DMCs. The main problems identified are challenges with technology choice, managerial skills and other general ones pertaining to business environment (power, access to finance) could be cabbed by managers with superior DMCs.

The empirical studies reviewed in this study provide a justification for this study. Both theoretical and empirical gaps are revealed by the available studies. Theoretically, scholars (Andersson & Evers, 2015; Helfat & Martin, 2015; Sirmon & Hitt, 2009) agree that the DMC concept is still at its infant level.. The emergence of the concept is traced in Adner & Helfat (2003) There are inconclusive debates with regard to the DMC scholarship. Little is known with regard to the evolution of DMCs (Kor & Mesko, 2013). The theory lacks testing in the developing countries context in the available studies. The business environment in developing countries like Tanzania has the impact on the conceptualization of DMCs notably in the managerial social capital and the managerial perceptions of the business environment. The findings will contribute to the development of the concept.

Empirically, very few studies exist with regard to DMCs. Out of the total DMC seven studies reviewed only two were empirical (Adner & Helfat, 2003; Sirmon & Hitt, 2009), the rest are conceptual studies that do not have empirical grounding. In the struggles to develop the DMC theory more empirical studies are called upon by several scholars (Adner & Helfat, 2003; Andersson & Evers, 2015; Helfat & Martin, 2015; Helfat et al., 2007; Kor & Mesko, 2013). For instance, Helfat & Martin (2015) is a conceptual study that adds more knowledge on DMCs. They recommend for empirical studies that could measure how heterogeneity among top managers affect firm performance. Kor & Mesko (2013) recommend for future studies to focus on the co-evolution of DMCs and firm's dominant logic. This study banking of the grain milling sub-sector in Tanzania adds to the body of knowledge with regard to empirical grounding of DMCs.

Identification of DMCs

DMCs identification process focuses on its definition on how managers create or modify the organization resources during change. Helfat et al (2007) and Bellner (2013) document that in identifying a DMC, Asset Orchestration (AO) is central and refers to " managerial search, selection, and configuration/coordination of resources and capabilities" (Helfat et al., 2007, p. 121). From Teece, (2007, p. 4) it is identified that managing opportunities and threats (TD) "For analytical purposes, dynamic capabilities can be disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise's intangible and tangible assets". Furthermore, the Conceptual yardsticks provided by Helfat et al (2007) are very important in assessing the fitness of the identified capabilities. The yardsticks include technical and evolutionary fitness. Technical fitness (TF) denotes "how effectively a *capability* performs its intended function (its quality) when normalized (divided by) by its cost" (Helfat et al., 2007, p. 122). Evolutionary fitness (EF) refers to "how well a *dynamic capability* enables an organization to make a living by creating, extending, or modifying its *resource base*. Influences on evolutionary fitness include *technical fitness*, competition, and market demand"(Helfat et al., 2007, p. 121). In identifying DMCs once the managerial behavior possesses all the first order constructs (DMC, AO, TD, TF,EF) it then exhibits the DMC evidence (Bellner, 2013).

<u>Evolution of DMCs</u>

There is limited conceptualization on how heterogeneity of capabilities arises (Helfat & Peteraf, 2003). This implies that there is little explanation on how firm resources and capabilities are used to generate competitive advantage over others for a certain period of time. Heterogeneity of resources and capabilities forms the basis of explaining Competitive advantages/disadvantages. Competitive advantage/disadvantage comes over a period of time and may shift over time. Wernerfelt (1984) posits that resources and capabilities are like products with recognizable paths as they are brought into existence, grow, mature and decline. Likewise as products have the Product Life Cycle (PLC), capabilities exhibit what is called Capability Life Cycle (CLC). CLC helps to explain the fundamental sources of firm heterogeneity and provides a common language and way of thinking about the evolution of capabilities (Helfat & Peteraf, 2003). CLC identify that there are general patterns and set of possible paths for the evolution of capabilities. CLC explains the emergence, development and progression of the capability. It further guides the future studies like this one in exploring the evolution of capabilities. It proposes three main stages of capabilities notably; founding stage, development stage and maturity stage.

Under the founding stage the capability of an individual is shaped through participating in teams that have central objective (s) to undertake. Through the working together an individual's human capital, social capital and cognition are improved. The development stage emphasizes on organizational learning as argued by Nelson & Winter (2002). This is enhanced through learning by doing or imitating capabilities from other organizations (Lazonick & Brush, 1985). Improved productivity is a function of learning by doing. The learning by doing may be done in teams or individuals, process improvements, problem solving and iterative process that involve trial and error (Winter, 2003). However, capability development may be limited by available technologies, inputs, workers and state of managerial practice. Thus heterogeneity results from the differences in capability trajectories , cognitive and limited by external environment (Helfat & Peteraf, 2003). They conclude that capability developed depends on the prior experience of the team being together, initial path chosen by the team, success of the initial alternative, new alternatives that appear reasonable, choices made within a set of limited alternatives. The maturity stage focuses on capability maintenance. This depends on regular exercise of the capability. They are usually embedded in the organization memories, routines become habitual.

Inconclusive debate exists with regard to what contributes to capability evolution. A mixture of scholarship exists with regard to the evolution of capabilities. For instance Helfat & Peteraf (2003) argue that capability may not necessary reach maturity if the external event to the capability intervenes. They categorize the kind of external influences to the capability that might include factor within the firm and outside the firm. Factors within the organization include managerial decisions while external factors may include changes in demand, science and technology, availability of raw materials, and government policy. This study focuses on explaining the organizational capabilities and no specific attention that was paid to the evolution of DMCs. Their study was a conceptual one that based on the elements of capability life cycle and explaining the supporting logic. The two scholars have raised several avenues for future research however, two opportunities for this study. They first acknowledge the missing theoretical and empirical perspective for the evolution of resources and capabilities and they recommend that the future studies focus on understanding the evolution of capabilities as a separate undertaking.

Another study that has tried to attempt the evolution of capabilities is from Zollo & Winter (2002) whose main focus is on capabilities evolving out of the learning mechanisms. They argue that firms at one time generated learning from accumulated experience, knowledge accumulation programs within the firm such as deliberate learning, codified activities. This is the theoretical study that focuses on the genesis and evolution of dynamic capabilities. They focus on the role of several learning mechanisms and their interaction with selected attributes of the organizational task. Focus is on the learning processes being learned. Their findings reveal that DCs emerge from the coevolution of tacit experience accumulation processes with explicit knowledge articulation and codification activities. The lower the frequency of experiences the higher the likelihood that explicit articulation and codification mechanisms will exhibit stronger effectiveness in developing dynamic capabilities, as compared with tacit accumulation of past experiences. The higher the heterogeneity of task experiences, the higher the likelihood that explicit articulation and codification mechanisms will exhibit stronger effectiveness in developing dynamic capabilities, as compared with tacit accumulation. The higher the degree of causal ambiguity between the actions and the performance outcomes of the task, the higher the likelihood that explicit articulation and codification mechanisms will exhibit stronger effectiveness in developing dynamic capabilities, as compared with tacit accumulation of past experiences. The evolution of capabilities is based on the three elements of tacit accumulation of past experience, knowledge articulation, and knowledge codification processes.

Gebauer (2011) on his study on exploring the contribution of management innovation to the evolution of dynamic capabilities stress that management innovation lead to the evolution of capabilities. Macpherson & Jones (2004) argue that capability evolution depends on technological and organization innovations. Relations of managers with other firms provide an opportunity to develop organization opportunities. Business networks supplementing organization knowledge and skills.

Synthesis and Theoretical Contribution

The difference that exists between this study and other reviewed studies. This study pays a special attention to the evolution of DMCs and none of the reviewed scholars did. The study further uses the developing countries context in exploring the evolution of DMCs. However, in explaining the heterogeneity of DMCs, the study borrows from Helfat & Peteraf (2003)'s logics and capability lifecycle model with the emphasis on the managerial processes rather than the entire organization processes. The grain milling subsector presents a unique business environment that may to a certain extent provide a theoretical contribution to the heterogeneity of capabilities among managers of different firms. Thus in this study a question is posed as to how do DMCs evolve over a period of time in the grain milling

3. Methodology

The study is guided by a phenomenology philosophy. The philosophy is guided by beliefs about how things can be understood and studied (Guba, 1990). The study adopts this philosophy as it seeks to understand and explain the evolution of DMCs in the grain milling sub-sector based on human action. The evolution of the DMCs is still under explored. The study doesn't aim at making inferences regarding the population as whole. The study intends to make a theoretical generalization and identify the level of replication of the phenomenon among firms in the grain milling sub-sector. The study uses a multi-case study where top managers/CEOs are focal points in the case method (Stake, 2008).

The multi-case study is conducted with five companies ranging from small to large. Such a number is considered sufficient for qualitative data (Eisenhardt, 1989). Various data collection methods are involved that is in-depth interview; archival records such CVs, certificates and questionnaires for personality test on cognition. Selection of the managers and firms is based on purposeful sampling strategy (Merriam, 2009). Managers with at least five years in the current organizations are focal units due to propensity for DMCs as they might have experienced significant environmental changes (Bellner, 2013).

Data collected in multi-case study includes both primary and secondary data relied on a semi-structured interviews conducted with each manager. Interviews are supported with archival data. Data is analyzed using the constant comparison method (Eisenhardt, 1989). The case data analysis is supported with some descriptive statistics on personality test (Yin, 2013). The data are compared with the literature to establish patterns and themes. The results from the case study are used to formulate propositions that might be tested in the future studies. The design of the case study (use of the case protocol) ensures the validity and reliability of the study (Yin, 2013). This is accomplished through the use of multiple evidences and maintaining a case study database (Bellner, 2013).

4. Findings and Discussions

4.1 Findings

Profile of the five firms

In total five firms were visited with a total of eight managers who interviewed. Firms A and B are among the largest companies in the sub-sector while firm C and D are among the medium firms and E is a small one. Firm A is one of the largest milling companies in East Africa with the net worth of US $ 520million employing more than 1200 employees in Tanzania. The firm has the daily processing capacity of 1750tons of wheat, 100tons of maize and 50tons of rice. Firm B has a total of 500tons production capacity of wheat per day. Firm C has a production of 10 tons per day with 23 employees; Firm D has a production capacity of 2 tons per day and firm E with 3 tons per day. For the current study, only two out of five have successfully been analyzed. Out of the two firms, three units of analysis have been presented.

Identification of the DMCs

Several incidences or episodes were identified during the in-depth interviews. These incidences have been summarized from each to generate first order constructs. The incidences or episodes are selected based on the managers' reactions to significant changes in the environment. These episodes are assessed based on the definition of Dynamic Managerial Capabilities, AO, TD, TF and EF. It is argued that when the episode includes the first constructs reveals the evidence of DMC. Most of the episodes presented in table 1 below have exhibited important DMCs.

It is noted that the identification process involves assessing the case incidences where (1) managers created, extended, and modified resources, (2) where managerial search, selection and configuration, and coordination of resources and capabilities (AO) was involved, (3) where this included managers "sensing" and "seizing" opportunities and managing threats (TD), and also whether the capacity exhibited (4) technical (TF) and (5) evolutionary fitness (EF).

In total 25 incidences are currently presented whereby 18 (non-shaded rows in the table below) have exhibited DMCs evidence.

Table 1 **DMC Identification**

Unit of Inquiry	Case Episode/Incidence	First Order Construct				
		DMC	AO	TD	TF	EF
Marketing Manager for Firm B	Responding to Customers' Needs-High Quality Products, New Products for new Demands	v	v	v	V	v
	Diversification to other support sub-sectors (Edible Oils, Polybags plants)	v	v	v	V	v
	Business models for the customers (Coping with electricity fluctuations and other entrepreneurial skills such as record keeping, laboratory demonstration in Bakeries)	v	v	v	X	x
	Relational abilities with customers	v	v	v	V	v
	Marketing Intelligence (wholesalers)	v	v	v	V	v
	Transforming the working culture and attitude (Agents and their employees)	v	v	v	V	v
	New software for customer Database	v	v	v	X	x
	Provision of Soft Loans to our esteemed customers	v	v	v	X	x
	Competitors surveillance using insiders	v	v	v	V	v
	Use of Parliamentary Committees	v	v	v	X	x
Marketing Manager for Firm	Restructuring of the marketing and sales Department (Customer retention, events)	v	v	v	V	v
	Collecting Customer Database	v	v	v	V	v

A	Customer feedback	v	v	v	V	v
	Reward Systems for his subordinates	v	v	v	V	v
	Problem solving strategy –Direct/Personal Contacts with the CEO-Quick Authorization/Relational capabilities	v	v	v	V	v
	Instituted annual marketing plans	v	v	v	X	x
	Patenting competitors Name in other countries	v	v	v	X	x
	Formed a Compliant Team (Multi-Disciplinary)	v	v	v	V	v
	Developing various activation programmes (mama Lishe projet)-Tools for trade	v	v	v	V	x
	Use of Tribal Customers networks in generating new accounts/ Relational Capabilities	v	v	v	V	v
Chief Miller for Firm A	Creating a pool of sustainable personnel to take over in the next 10years to come	v	v	v	V	v
	Automation of the milling processes	v	v	v	V	v
	Managing the types of raw materials (quality) from the Supplier's point	v	v	v	V	x
	Participating in the investment decisions (creating a feasibility study)	v	v	v	V	v
	Continuous anticipation of the future technological changes	v	v	v	V	v
	Renovation of the old Milling machines	v	v	v	V	v
	Accessing training from the Suppliers of various technological equipment	v	v	v	V	v

Source: Field Data, 2016

DMC Classification

Table 2 DMC Classification

	DMC	Incidences
1.	Marketing Intelligence Dynamic Managerial Capabilities (MIDMCs)	Marketing Intelligence (wholesalers)
		Competitors' surveillance using insiders
		Collecting Customer Feedback
		Customer Database
2.	Learning Dynamic Managerial Capabilities (LDMCs)	Accessing training from the Suppliers of various technological equipment
		Transforming the working culture and attitude (Agents and their employees)
		Creating a pool of technical personnel to take over in the next 10 years
		Accessing training from the Suppliers of various technological equipment

3.	Innovation Dynamic Managerial Capabilities (IDMCs)	Responding to Customers' Needs-High Quality Products, New Products for new Demands
		Business Re-engineering
		Automation of the milling processes
		Renovation of the old machines
4.	Future-Oriented Dynamic Managerial Capabilities	Continuous anticipation of the future technological changes
		Participation in the Investment Decisions
5.	Relational Dynamic Managerial Capabilities	Relational abilities with customers
		Use of Customers' Tribal networks in generating new and developing the existing accounts
		Internal Problem solving strategy through use of Direct/personal contacts with CEO
		Reward Systems for subordinates
6.	Diversification Dynamic Managerial Capabilities	Diversification to other support sub-sectors (Edible Oils, Polybags plants)

Source: Field Data, 2016

<u>Evolution Mechanisms of DMCs</u>

Table 3 Evolution Mechanisms

Sn.	**Factors accounting for Evolution**
	Personal Level
1.	Personal Aspirations
2.	Past Experience in the Industry, sub-sector
3.	Mentorship from the family
4.	Relational Capabilities
	Firm Level
1.	Relational Capabilities
2.	Internal environment (Weakens-Lack of cooperation activate Innovation etc)
3.	CEO's flexibility
	Outside the Firm

1.	Infrastructure challenges

4.2 Discussion

5. Conclusion and Recommendations

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