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Understanding organizational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda

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Abstract

Purpose of this study is to understand development of organizational capabilities in micro enterprises. Organizational capabilities underpin companies' competitive advantages as well as their ability to respond internal and external change. Current literature is focused on mainly large enterprises, with some interest on SMEs. However there is little research attempting to understand the applicability of organizational capability theories on micro enterprises. In this paper we propose a research framework and a research agenda for addressing this gap.

Keywords—Micro Enterprises, Organizational Capabilities, Dynamic Capabilities

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1 Introduction

SMEs have important place at all economies in the world, but especially to those in developing countries and, within that broad category, especially in those economies with major employment and income distribution challenges. SMEs are the engine of growth, essential for developing competitive and efficient markets and reduction of poverty particularly in developing countries (Fan, 2003). Small and medium-sized enterprises are contributing to employment growth at a higher rate than larger firms. In the EU economy about 99.9% of the enterprises are SMEs of which 93 % are micro enterprises (European Commission, 2003). Micro companies are also a source of skilled workforce and have an important role in creating competitive industrial base (European Commission, 2003).

Firms need to adapt environmental change to remain successful. When the environment is dynamic or unpredictable, firms are especially challenged to revise their routines (March, 1991). Helfat (1997) suggests that organizational capabilities allow firms to create new products and processes and respond to changing market circumstances. Organizational capability is the ability of a firm to perform a coordinated task, utilizing organizational resources, for the purpose of achieving a particular end result (O'Regan and Ghobadian, 2004). Development of organizational capabilities are well documented in literature for large enterprises (Barney, 1991; Peteraf, 1993; Teece et al., 1997; Amit and Schoemaker, 1993). However there is little research attempting to understand the applicability of organizational capability theories on micro enterprises. In this paper we propose a research framework and a research agenda for addressing this gap.

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2 SMEs Literature Review

2.1 Definition of SMEs

Definition of SMEs is different for each country based on their industrial and economic structure. Revenue, payrolls, total assets of enterprises, number of employee are key indicators used to differentiate micro, small, medium and large enterprises (SMEDP, 2014; USITC, 2014; European Commission, 2014). The most common indicator is number of employees as illustrated in Table-1.

Table - 1 Definition of SMEs by countries

	<i>Medium</i>	<i>Small</i>	<i>Micro</i>
	Up to	Up to	Up to
USA	500	100	N/A
China	2000	300	N/A
EU	250	50	10
Australia	200	20	5
Turkey	250	50	10
UK	249	49	9

2.2 Differences between Large, SME and Micro Enterprises

SMEs have specific characteristics that distinguish them from large corporations and that can of course change across different countries and cultures. According to literature, SMEs are generally independent, multi-tasking, and cash-limited based on personal relationships and informality, as well as actively managed by the owners, highly personalized, largely local in their area of operation and largely dependent on internal sources to finance growth (Vyakarnam et al., 1997; Moore and Manring, 2009; Hudson-Smith and Smith, 2007; Ates et al., 2013).

However, in literature difference between micro enterprises and others are not so well defined. In this study, in order to clarify what makes micro enterprises different than others, we interviewed owners/managers of 16 micro manufacturing enterprises. The results are illustrated in Table 2. For the purpose of this study, micro enterprises are defined as manufacturing firms which have less than 20 employees.

Table – 2 Comparison of Large, SME and Micro enterprises

	<i>Large</i>	<i>SME</i> <i>from literature</i>	<i>Micro</i> <i>from primary data</i>
Leadership	Leaders are more involved with strategic activities	Leaders are more involved with operational activities than strategic activities	Leaders are exclusively involved with operational activities
Management	Participative management	Mixture of empowered supervision and command and control	Command and control
Strategic Planning	Short and long term planning	Short term planning focus on niche strategies	Fire-fighting to survive
Organizational Structure	Hierarchical with several layers of management	Flat with few layers of management	Flat with one layer
System & Procedures	Formal control systems, High degree of standardization	Personal control Some degree of standardization and formalization	No procedures Low degree of standardization and formalization
Human Resources	Training and staff development is planned and is in large scale	Training and staff development is adhoc and small scale	Almost no training and staff development activities
Market and Customer Focus	Formal customer relationship Larger customer base	Formal-Informal customer relationship Limited customer base	Informal customer relationship Very limited customer base
Operational Improvement	Vast knowledge or understanding of operational improvement activities	Limited knowledge or understanding of operational improvement activities	No knowledge or understanding of operational improvement activities
Innovation	Innovation based on R&D	Innovation based on clusters and networking	Innovation based on technological improvement and customer needs
Networking	Extensive external networking Better understanding of support available from local government	Limited external networking Limited knowledge of funding and support available from local government	Very limited external networking No knowledge of funding and support opportunities

3 Organisational Capabilities

Organizational capabilities are defined as a firm's capacity to deploy its resources, tangible or intangible, to perform a task or activity to improve performance (Amit and Schoemaker, 1993; Grant, 1991; Teece et al., 1997). Helfat and Peteraf (2003) define organizational capability as 'the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result'. Organizational capabilities are fundamental to firms' ability to solve effectively their organizational problems (Dosi et al., 2000).

Researchers distinguish between different organizational capabilities. Collis (1994) proposed four categories of organizational capabilities. The first 'are those that reflect an ability to perform the basic functional activities of the firm' (Collis, 1994). The second category concerns dynamic improvements to the activities of the firm such as continuous improvement activities. The third category is 'to recognize the intrinsic value of other resources or to develop novel strategies before competitors' (Collis, 1994). The fourth category is labelled 'higher order' or 'meta-capabilities', and it relates to learning-to-learn capabilities. Winter (2003) proposes that there are zero level capabilities, also called operational or ordinary capabilities, which he defines as those that permit the firm to earn a living in the present. Then he explains that there are first-level capabilities which modify and change zero-level capabilities. He also suggests, similarly to Collis (1994), that there are higher order capabilities which operate on the first level capabilities. Table – 3 provides a comparative summary of different categorization of organizational capabilities.

Table – 3. Distinguishing organizational capabilities by different authors

Collis (1994)	Winter (2003)	Zahra et al. (2006)	Ambrosini et al. (2009)
First category capabilities	Zero-level capabilities	Substantive capabilities	Resource base
Second and third category capabilities	First-order capabilities	Dynamic capabilities	Incremental Dynamic capabilities Renewing Dynamic capabilities
Meta capabilities	Higher order capabilities		Regenerative Dynamic capabilities

In this study, we have developed a theoretical framework for organizational capabilities which classifies organizational capabilities into two categories: dynamic and operational. Following section explains this framework.

3.1 Foundations

Organizational culture is defined by many authors in literature. Most commonly used definition is "the way we do things around here" (Lundy and Cowling, 1996). Schein (1985) argues that culture consists of three dimensions; assumptions, values and artefacts. Assumptions are widely held, ingrained subconscious views of human nature and social relationships that are taken for granted. Values represent preferences for alternative outcomes as well as means of achieving those outcomes. Artefacts are the more solid or physical representation of culture that includes rituals, slogans, traditions and myths. Organizational culture has been identified as an important influence in the process of capability development (Oliver, 1997). Culture is central to the change process and to the attainment of strategic objectives (Bluedorn and Lundgren, 1993). Culture has vital role to develop other capabilities. Martins and Terblanche (2003) suggest five determinants of organizational culture as: strategy, structure, support mechanism, behaviours that encourages innovation, and communication. Organizational goals and objectives reflect the priorities and values of organizations and as a result may promote or hinder innovation (Arad et al., 1997).

Table – 4 Determinants of organizational culture (Martins and Terblanche, 2003)

Strategy	Structure	Support Mechanisms	Behaviour that encourages innovation	Communication
<ul style="list-style-type: none"> • Vision and mission • Purposefulness 	<ul style="list-style-type: none"> • Flexibility • Freedom -Autonomy -Empowerment -Decision making • Cooperative teams and groups interaction 	<ul style="list-style-type: none"> • Reward and recognition • Availability of resources -Time -Information technology -Creative people 	<ul style="list-style-type: none"> • Mistake handling • Idea generation • Continuous learning culture • Risk taking • Competitiveness • Support for change • Conflict handling 	<ul style="list-style-type: none"> • Open communication

Organizational learning is defined as a process encompassing the acquisition, distribution, and interpretation of information, together with the development of organizational memory (Bell et al., 2002; Tippins and Sohi, 2003). Organizational learning capability is important to develop other capabilities. Four dimensions are identified for development of learning capability as managerial commitment, system perspective, openness and experimentation, knowledge transfer and integration (Jerez-Gomez et al., 2005). Management should recognize the relevance of learning, thus developing a culture that promotes the acquisition, creation, and transfer of knowledge as fundamental values. (Jerez-Gomez et al., 2005). The organization is considered as a system that is made up of different parts, each with its own function but act in a coordinated manner and it is important to that various individuals, departments, and areas of the firm should have a clear view of the organization’s objectives and understand how they can help in their development (Jerez-Gomez et al., 2005). Openness is important to develop and share new ideas and encourage other individuals to share their ideas. Knowledge transfer and integration requires effective communication and knowledge sharing within the organisation.

Zollo and Winter (2002) suggest that learning processes develop over time in two different types of organizational capabilities as operational capabilities and dynamic capabilities.

3.2 Operational Capabilities

Winter (2003) defines an operational capability as 'a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type'. Operating capabilities enable the firm to execute its main operating activities (Newey and Zahra, 2009). An operational capability enables a firm to perform an activity on an on-going basis using more or less the same techniques on the same scale to support existing products and services for the same customer population (Helfat and Winter, 2011). Operational capabilities are important to sustain and improve business performance.

Routines of operational capabilities are continues improvement and strategy development and implementation. Improvement capability is defined as the ability to incrementally increase manufacturing performance using existing resources (Swink and Hegarty, 1998). Continuous improvement is defined as a company-wide process of focused and continuous incremental innovation (Bessant et al., 2001). There are different methodological problem solving approaches such as PDCA (Plan-Do-Check-Act) is developed by Deming and DMAIC (Define-Measure-Analyse-Improve-Control). The PDCA cycle is more than just a tool; it is a concept of continuous improvement processes embedded in the organization’s culture (Sokovic et al., 2010). DMAIC is more data driven approach developed for Six Sigma projects (Sokovic et al., 2010).

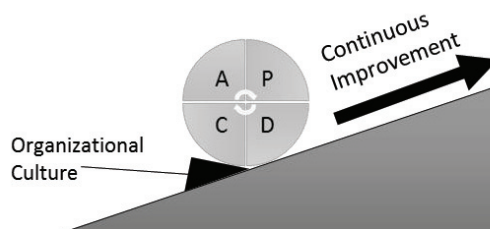


Figure – 1 PDCA cycle in continuous improvement process

There are various definition of strategy in literature. A typical definition of strategy is “the direction and scope of an organization over the long term. It ideally matches its resources to its changing environment, and in particular its markets, customers or clients so as to meet stakeholder expectations” (Johnson and Scholes, 1993). Strategy has important role to develop core capabilities for long term competitive advantages (Kak and Sushil, 2002). Continuous improvement activities should align with strategic goals and objectives (Muda and Hendry, 2003). There are different well established strategy development and deployment approaches in literature. Figure – 2 represent an example of strategy development and implementation process (Feurer and Charbaghi, 1995). A key feature of the literature on strategy formulation and deployment is that smaller firms or small business units of larger firms should have focused clear and concise strategies and that these strategies should be clearly deployed to operational activities of the business.

Operational capabilities, literature comprises many management tools and practices which are implemented at mostly larger firms and adopted to SMEs such as continues improvement (CI), Just-In-Time (JIT), lean production, total quality management (TQM), totally productive management (TPM), customer relationships management (CRM).

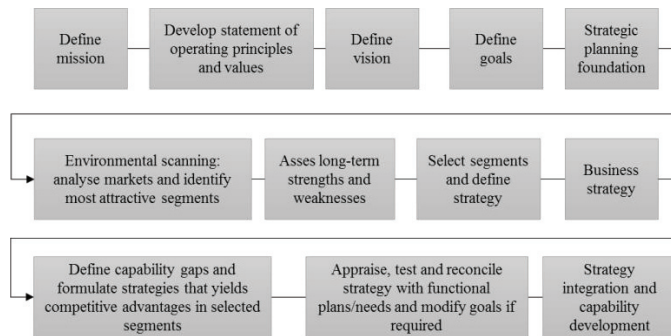


Figure – 2 Strategy development and implementation

3.3 Dynamic Capabilities

There are different dynamic capabilities definitions from different authors on their own perspective. Teece et al. (1997) define dynamic capabilities as the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. The firm’s processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match or even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resources configurations as market emerge, collide, split, evolve and die (Eisenhardt and Martin, 2000). Dynamic capabilities are essentially change-oriented capabilities that help firms redeploy and reconfigure their resource base to meet evolving customer demands and competitor strategies (Zahra and George, 2002). A newer source of competitive advantage in conceptualizing how firms are able to cope with environmental changes (Lu et al., 2010).

Teece (2007) claims that dynamic capabilities enable firms to gain competitive advantage in rapid (technological) changing markets. They also enable firms to adapt internal and external changes (Zahra and George, 2002). Firms develop capabilities to deal with change.

Dynamic capabilities compromise different routines suggested by different authors. Sensing, Seizing, Leveraging, Transformation and Reconfiguration are routines to develop dynamic capabilities (Teece et al., 1997; Ambrosini and Bowman, 2009). Learning is another type of routine suggested in literature but in our framework learning is placed at foundation level because all kind of capabilities requires learning routines.

Sensing refers to the recognition of market and technological opportunities and the mobilization of requisite resources (Katkalov et al., 2010). Sensing (and shaping) new opportunities are very much a scanning, creation, learning and interpretation activity (Teece, 2009).

Seizing refers to the organizational strategy and infrastructure for making appropriate decisions and absorbing and integrating resources to create and capture value from opportunities (Katkalov et al., 2010). Once a new (technological or market) opportunity is sensed, it must be addressed through new products, processes or services. This almost always requires investments in development and commercialization activity (Teece, 2009).

Transforming refers to the continuous renewal and modification aimed at maintaining competitiveness, as markets and technologies change once again (Katkalov et al., 2010). The successful identification and calibration

of technological and market opportunities, the judicious selection of technologies and product attributes, the design of business models, and the commitment of resources to investment opportunities can lead to enterprise growth and profitability. Profitable growth will lead to the augmentation of enterprise-level resources and assets (Teece, 2009).

Reconfiguration refers to the transformation and recombination of assets and resources, e.g. the consolidation of central support functions that often occurs as a result of an acquisition (Ambrosini and Bowman, 2009).

Leveraging involves replicating a process or system that is operating in one business unit into another, or extending a resource by deploying it into a new domain, for instance by applying an existing brand to a new set of products (Ambrosini and Bowman, 2009).

Some of dynamic capabilities in literature are as follow R&D Capability (Easterby-Smith et al., 2009; Teece et al., 1997), Innovation Capability (Easterby-Smith et al., 2009), Product Development Capability (Easterby-Smith et al., 2009; Eisenhardt and Martin, 2000; Teece et al., 1997), Environmental Scanning Capability (Teece et al., 1997), Networking Capability (Easterby-Smith et al., 2009), Alliancing and Acquisition Capability (Teece et al., 1997; Eisenhardt and Martin, 2000), Imitation/Replication Capability (Zott, 2003), Reconfiguration Capability (Ambrosini et al., 2009) Knowledge Development/ Learning Capability (Teece et al., 1997; Eisenhardt and Martin, 2000), Marketing Capability (Bruni and Verona, 2009; Easterby-Smith et al., 2009).

3.4 Relationship between Operational and Dynamic Capabilities

Newey and Zahra (2009) suggest that dynamic capabilities is the ability of the firm to reconfigure operating capabilities and thus allow the organization to adapt and evolve. Dynamic capabilities are used to extend or modify their current resources different ways such as altering operational capabilities (Winter, 2003; Helfat and Winter, 2011) or features of the external environment or ecosystem (Teece, 2007).

Purpose and outcomes of dynamic and operational capabilities are different. However, there is not a certain line between operational and dynamic capabilities because change is always occurring to at least some extent; it cannot be distinguished dynamic from operational capabilities based on whether they support what is perceived as radical versus non-radical change, or new versus existing businesses; and some capabilities can be used for both operational and dynamic purposes (Helfat and Winter, 2011).

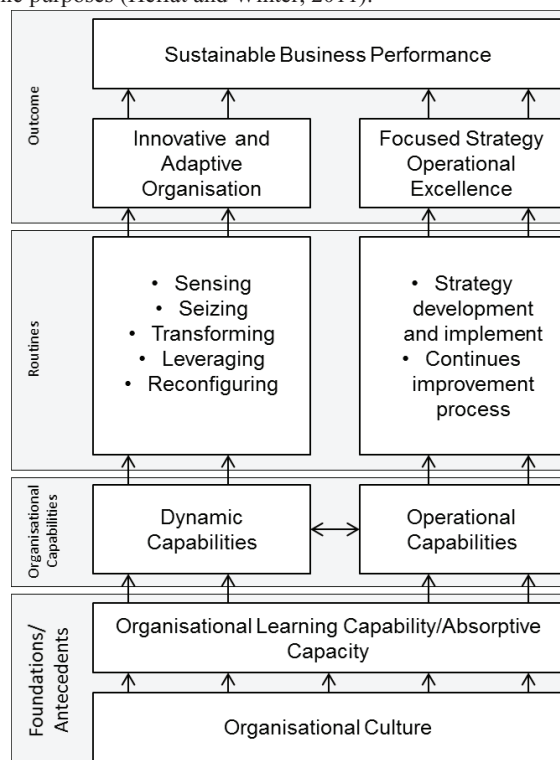


Figure – 3 Theoretical framework

4 Dynamic Capabilities in the Context of Organisational Capabilities – Case of Micro Enterprises

Literature suggests approaches to develop capabilities for mostly large firms and SMEs but not for micro enterprises. As Penrose (1959) states “we cannot define a caterpillar and then use the same definition for a butterfly”. Micro enterprises are different than SMEs and large enterprises. Thus, a tools developed for larger enterprises and/or SMEs cannot be implemented to micro companies without any contextualization. The framework at figure 4 conceptualizes an organizational capability framework for micro enterprises. Firstly, key capabilities are identified from the literature in general (such as for operational capabilities continues improvement, lean production, agile production, JIT, TQM, TPM and CRM). Then these capabilities are conceptualized for micro enterprises based on their differentiating characteristics as discussed earlier.

For example, R&D capability is suggested in literature as one of the core dynamic capabilities (Teece et al., 1997; Teece, 2007). However, a micro enterprises cannot finance R&D activities most of the time. Furthermore, micro companies are much closer to their customer and their innovation activities based on customer needs. They produce innovative products for customer needs. Thus, we prefer to call innovation and product development capability rather than innovation capability.

Learning activities seen as responsibilities of owner in many micro companies. Moreover, owners do not share their knowledge and not open for new ideas comes from employees. Thus, to develop learning capabilities management should support employees for learning, organization should focus on same objectives, owner and managers should be open minded for new ideas, and finally knowledge and experiences should be openly shared within the firm.

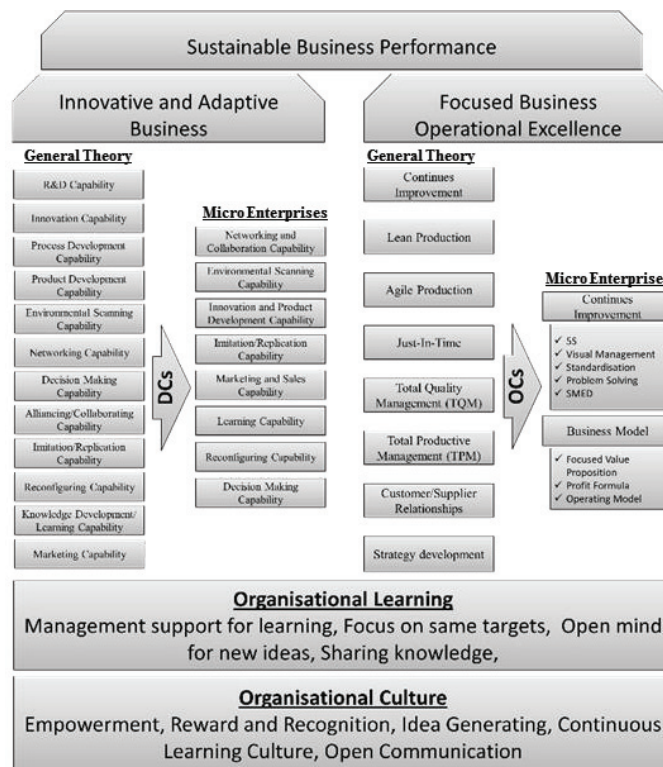


Figure – 4 Developing organizational capabilities of micro enterprises

Culture has important role in capability development process and it’s hard to change. Many micro enterprises have command and control culture. Owners control everything in organization, employees do what owners says. This prevent micro companies to develop capabilities such as learning, innovation and continues improvement capabilities. To create better organizational culture we suggest that micro enterprises pay particular attention to empowerment, reward and recognition, idea generating, continues learning and open communication routines.

5 Research Agenda

Quite clearly there is very little work organizational capabilities theories in micro companies. In this work, though an empirical study we explicated the differences between micro enterprises and others. However, applicability and relevance of organizational capabilities theories to micro companies still remain illusive. There is two key research questions remain to be answered. Assuming that organizational capabilities are relevant micro companies.

RQ1: How organizational capabilities are related with each other in micro enterprises?

RQ2: How organizational capabilities can be developed in micro companies?

For this purpose, action research methodology can be used to explore these research questions. A maturity model based on our framework can be used to assess capability maturity of organizations. This may be achieved through semi-structured interviews with owners/managers and immersive observations at firms. Data collection process can be designed in four steps:

Step 1 has two part

- a) Diagnostic – Identify current issues and priorities at firms
- b) Maturity Assessment – Current level of organizational capabilities

Step 2 Design intervention plan

Step 3 Implement intervention plan and review outcomes

Step 4 Maturity assessment of organizational capabilities after 3 – 6 months

A longitudinal action research such as the one outlined above will enable the researchers to observe the interaction between different capability areas in the context of the firm's current issues and priorities in a micro enterprise setting.

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