



# Firm Level Competitiveness of Small and Medium Enterprises (SMEs): Analytical Framework Based on Pillars of Competitiveness Model



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## Abstract

The research on competitiveness has been increasing in popularity amongst scholars, there is a lack of studies focusing on the firm level competitiveness of Small and Medium Enterprises (SME). The objective of this paper is to develop a framework model, which can be used to analyze the competitiveness of the SME at the firm level. In this paper, we propose a framework of six pillars of competitiveness, which constitute the physical and human resources, innovation, networking, management processes as well as customers (demand conditions) and competitors (supply conditions). The methodology is unique in the sense that it incorporates the unique analytical framework called the bottlenecks over the pillars of competitiveness, which calculate the individual level competitiveness points for each SME and competition points that can collate significantly with the selected measures of competitiveness. This comprehensive framework needs to be tested empirically with the data in future research.

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## 1. Introduction

In the fast-changing and increasingly competitive global business environment, the Small and Medium Enterprises (SMEs) exert a strong influence on the economies of many countries and considered as the engine of economic growth and technological progress (Bruque and Moyano, 2007). SMEs have become more important for the whole world because of their flexible and compatible structures (Kayadibi *et al.*, 2013). These SMEs play a significant role in economies by providing a large portion of production due to their adaptability features. They can be established for all kind of activities of every business and are considered as a backbone of country's economy, especially in the underdeveloped and developing world (Radam *et al.*, 2008). Research on SME has been developed since the growth

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of debut upon the role of this business organizations to economic development process (Gunasekaran & Griffin, 2011). One of the debates that have been emerging among business scholar is how to increased SME competitiveness (Rostek, 2012; Ada *et al.*, 2013). Rostek (2012), argues that SME needs to improve competitiveness to survive in a changing environment and face increasing business competition. Ada *et al.*, (2013) found competitiveness of SME could increase their bargaining position in the business competition. There are a variety of levels and approaches actually reflects the wide applications of this concept. This paper will review different approaches of competitiveness studies and suggest a theoretical framework for analyses the competitiveness of SMEs though proposed six pillars model.

## 2. Research Methods

This study is applied to a qualitative and quantitative model in analyzing the data. The analysis focusing on the analytic framework based on pillars of the competitive model. The methodology is unique in the sense that it incorporates the unique analytical framework called the bottlenecks over the pillars of competitiveness, which calculate the individual level competitiveness points for each SME and competition points that can collate significantly with the selected measures of competitiveness. This comprehensive framework needs to be tested empirically with the data in future research.

## 3. Results and Analysis

### 3.1 Competitiveness of SMEs

#### a) Competitiveness as a Concept

The concept of competitiveness is applied in various level of studies including firm level, the microeconomic level for industry and macroeconomic level for the national economies (Nelson, 2012). A review by Waheeduzzaman and Ryans (2006), also pointed out that the competitiveness concept involves different disciplines, such as comparative advantage, price competitiveness, the strategy, and management perspective as well as the historical and sociocultural perspectives. Competitiveness can also be treated as a dependent, independent, or intermediary variable, depending on the perspectives from which we approach the issue (Mulatu, 2016).

Moreover, competitiveness describes the economic strength of a country or industry or firm with respect to its competitors in the global market economy in which goods, services, people, skills and ideas move freely across geographical borders (Murths, 2008). A small firm is not a scaled down version of larger firms. Larger and smaller firms differ from each other in terms of their organizational structures, responses to the environment, managerial styles and more importantly, the ways in which they compete with other firms. As a result, the competitiveness studies focusing on large corporations may not be applied directly to the SME level. In fact, studies of competitiveness with a focus on SMEs have increased substantially in recent years, with a number of studies devoted to identifying the various factors of competitiveness. Naturally, major part of SMEs have to compete with foreign competitors either on domestic or international markets, while in case of number of companies on the domestic markets, maintaining position in competition with domestic players is crucial, the "duality" of which, in my opinion, should be taken into account in determining competitiveness of SMEs.

#### b) Models of Competitiveness

Over the last decade, trade globalization and liberalization have significantly increased customer expectations and competition among companies. They were able to get the opportunity to enter the market better than larger firms due to systemic change. Competitiveness remains a concept that is not well understood, despite widespread acceptance of its importance. Porter (1985) defined competitiveness as the implementation of value-creating strategy by a firm and not simultaneously implemented by a competitor and this strategy is not easily duplicated. Moving away from the traditional Ricardo idea of comparative advantages, Porter's diamond model aims to explain the competitive advantages of the nations (Porter, 1990). The competitive position of a nation depends on the factor endowments, demand conditions, the support of related industries, and the firms' strategy, structure, and rivalry, argues Porter. These four factors together affect other four components that determine the competitive position of the nation. The four components are the availability of skills and resources, the information that firms use how to apply these skills and resources, the goal of the businesses and the pressure of the firms to renew, innovate or invest. In addition, the government can also play a role by effective industry and antitrust policies, stimulating demand and specialized factor

creation.

Over years there have been many new developments in the field of competition. According to the Chaudhuri and Ray (2007), there is a two-dimensional approach; one is at the level of analysis (nation, industry, and firm) and the other is the types of used variables. Out of these possible approaches, this paper focuses on the firm level investigation. The Porter's view is not the only way to examine the competitiveness of the businesses (Ambastha & Momaya, 2004), besides traditional theories such as the Structure Conduct Performance (SPC) the competency theories provides a useful alternative to Porter. The competency theories include the resource-based theory, the dynamic capabilities theory, and knowledge-based theory. A common characteristic of these theories that they give a decisive importance "to the firm's internal rather than to its external conditions for understanding its competitive market position" (Ambastha & Momaya, 2004). In the following, we rely mainly on the well-known resource-based view (RBV) out of the competing theories.

### 3.2 Conceptual Framework

According to the resource-based theory, to sustain competitive advantage, the firm has to have unique resources. Barney (2009) list four characteristics of this unique resource as a resource should be effective and efficient, rarity takes into account the specificity of the resource, imperfect in-imitable refers to the difficulty to reproduce the resource, and substitutability involves the availability of the alternative resource. A resource, that can be interpreted as an asset, competency, organizational processes, information, knowledge or capability is considered to be unique if it is valuable, rare, difficult to imitate and has no close substitute (Man et al., 2008).

Moreover, distinctive resources lead to sustained competitiveness and superior returns (Karaev et al., 2007). Whilst the resource-based theory literature lists several factors of competitiveness, the knowledge-based theory of the firm identifies knowledge as the single most significant resource of the firm because it is relatively rare, difficult to imitate, and socially complex. Despite increasing globalization, small firms compete mainly in the local, domestic markets or market niches. SMEs frequently face the lack of proper inside resources that makes essential to develop human resources and innovation (Karaev et al., 2007). As a consequence of networking, outside collaboration, co-operation as well as efficient inside knowledge sharing methodology are the core of effective competition of the smaller sized businesses (Ambastha & Momaya, 2004).

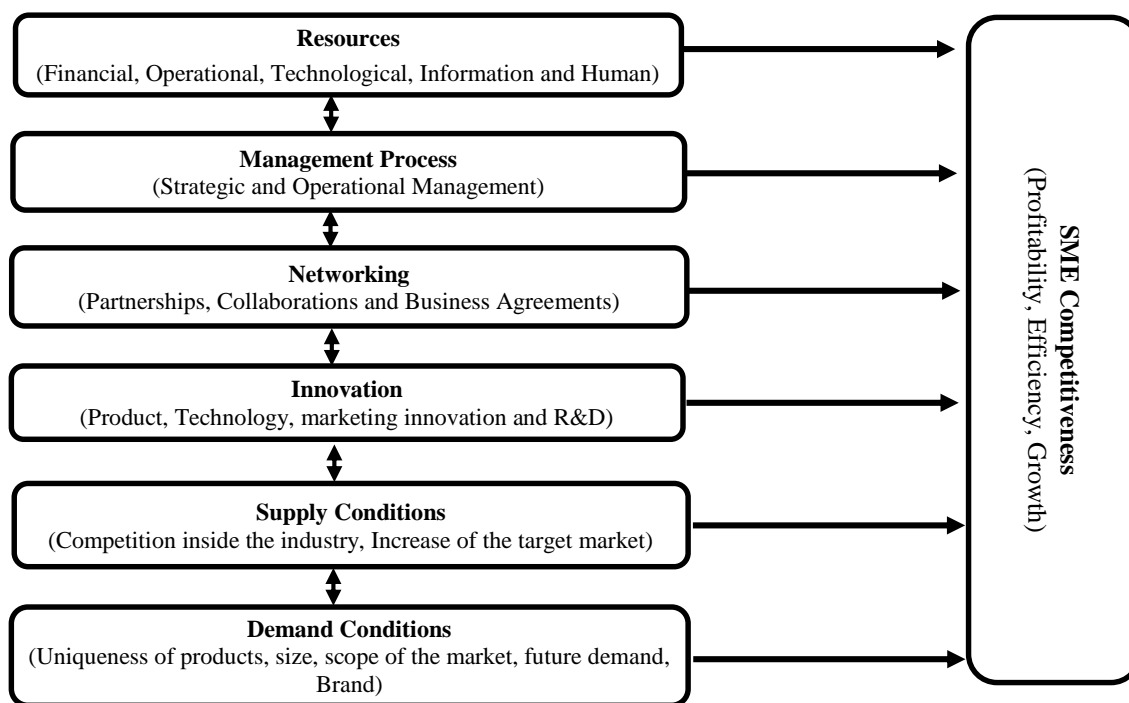


Figure 1. Conceptual Framework

According to Figure 1, out of the six pillars of competitiveness, six pillars constitute the core competencies of the businesses, physical and human resources, on the one hand, innovation, networking, information and management processes on the other hand. Core competencies provide the possibility to be competitive; however, competencies should be adjusted to the other two pillars, to costumes (demand conditions) and to competitors (supply conditions). Competitiveness can be measured basically by relative performances of profitability and efficiency. Other measures such as growth are also frequently applied success criteria of competitiveness.

Since profitability or efficiency data (bracketed terms) normally not available for SMEs, the level of competitiveness can be qualified by growth. The interaction and the fit of the six pillars are vital. Similar to other competitiveness models, this one also relies on the benchmarking view. The benchmark businesses are those possess high level of technology, effective information communication tools (ICT), heavily invest and relies on outside debt and capital if it is necessary, have highly educated and frequently trained human resources as well as competent management, innovate products, technology and marketing, good R & D capacity, continuously collaborate in innovation, cooperates, frequently builds on outside resources, have sophisticated multi-party decision making and knowledge dissemination system, has low level of rivalry, increasing markets, unique product, and high demand from wide range of geographical area within the country.

### 3.3 Analytical Framework

The analytical model suggests that six variables; physical resource, human resources, innovation, networking, management, information, supply and demand conditions interact; if they are out of balance, competitiveness is inhibited. It is proposed to conduct a field survey to collect the cross-sectional data from the SMEs. Besides collecting the basic data, it also needs to cover the question all major functional fields of the business as per the analytical framework. There are several possibilities from factor analysis, cluster analysis to simple methodology such as addition and just calculating the average values. Regression techniques are improper because of the strong correlation between the different factors of competitiveness, i.e. multicollinearity Miller (2009). Here, three-step method, called the penalty for bottleneck\* can be applied in this analysis.

- a) In the cases of the variables constituting a particular pillar, calculation of pillar values can be done by assuming that there is a partial substitutability amongst the variables. Therefore after normalization, simply calculate the averages of the variables to receive the values of each of the six pillars.
- b) In order to overcome the problem of combining the pillars, the calculation of the penalty for bottleneck (PFB) points from the six pillars can be used as proposed by Miller (2009). Therefore the combined effect of these factors is the key to the overall level of competitiveness. In order to calculate the joined influence, it is proposed to use the new methodology by Miller (2009) and called the penalty for bottleneck (PFB). This notion of the bottleneck is important for strategy purposes. The model suggests that resources, innovation, networking, management, supply and demand conditions interact; if they are out of balance, competitiveness is inhibited. The six pillars should be adjusted in a way that takes this notion of balance into account. The value of each pillar is penalized by linking it to the score of the pillar with the weakest performance in that firm. This simulates the notion of a bottleneck; if the weakest pillar were improved, the overall competitiveness would show a considerable improvement.
- c) The overall competitiveness point of an individual firm is simply the sum of the PFB adjusted pillar values.

The PBF methodology is consistent with the Miller configuration theory emphasizing the combined interplay of the pillars.

## 4. Conclusion

Since most firm level competitiveness models aim to investigate large, mainly international firms, this new analytical model will fit better to small business setup. The model contains six pillars. The resource-based theory and Michael Porter's theory of competitiveness served as a basis to construct this six pillar model of competitiveness. A potential drawback is that this model still prefers larger size businesses and disregards incorporating institutional factors. However, the incorporation of sectoral differences would also be useful. Since most SMEs do not have

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\* The Penalty for Bottleneck (PFB) methodology is based on the assumption that the performance of the system depends on the weakest link, i.e., the variable that has the lowest value. This approach deviates from the most frequently applied method of calculating the arithmetic averages of the variables, which explicitly assumes perfect substitutability and, hence, provides potentially false policy implications. The resulting PFB based policy recommendation is clear: the bottleneck should be improved first because it has a magnifying effect on the other indicators in the system.

management routines, selling only in narrow niche markets and having very low innovation capabilities would be conducive to the low level of competitiveness for most micro businesses. Moreover, the availability of the variables limits the empirical application of the model. A further potential application of the model is to provide tailor-made strategy suggestions to individual businesses by improving the weakest link.

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*Statement of authorship*

The author(s) have a responsibility for the conception and design of the study. The author(s) have approved the final article.



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