

Developing Small and Medium-Sized Enterprises (SMEs) Taxonomy in Malaysia

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ABSTRACT

In most economies, small and medium-sized enterprises (SMEs) constitute a variety of different firms encompassing a wide range of industries. SMEs are heterogeneous: they differ at least in terms of their capabilities, stage of development, resources as well as requirements. The heterogeneity of SMEs suggests that any systematic and rigorous attempt to understand, explain and predict their behaviour should begin with the development of a taxonomy for them. A taxonomy provides a means for grouping and defining heterogeneous SMEs - understanding their similarities and differences, their strengths and weaknesses. In the literature, several attempts to develop SMEs taxonomies have been made. Upon examining three of these taxonomies, it is found that SMEs can be classified in a number of different ways. Nonetheless, whilst this review of taxonomies literature is insightful in developing our own SMEs taxonomy, a careful study of the various features of SMEs is awaited if we were to develop a comprehensive taxonomy for the Malaysian SMEs.

ABSTRAK

Dalam kebanyakan ekonomi, perniagaan kecil dan sederhana (PKS) merangkumi pelbagai syarikat dalam pelbagai industri. PKS adalah berlainan, iaitu mereka berbeza dari segi keupayaan, tahap pembangunan, sumber dan juga keperluan.

Kepelbagaian PKS mencadangkan sebarang percubaan sistematik dan rapi untuk memahami, menjelaskan dan meramal gelagat mereka perlu bermula dengan pembentukan taksonomi bagi mereka. Sesuatu taksonomi itu merupakan satu cara bagi mengumpul dan mentakrif kepelbagaian PKS, iaitu bagi memahami persamaan, perbezaan, kekuatan serta kelemahan mereka.

Dalam kepustakaan, beberapa percubaan untuk membentuk taksonomi PKS telah dilakukan. Berdasarkan kepada tinjauan tiga taksonomi tersebut, didapati PKS boleh diklasifikasikan mengikut beberapa cara. Meskipun tinjauan tersebut sangat berguna dalam membentuk taksonomi dalam kajian ini, penelitian tentang pelbagai ciri PKS perlu dilakukan bagi membentuk taksonomi yang lebih komprehensif bagi PKS di Malaysia.

INTRODUCTION

Small and medium-sized enterprises (SMEs) which constitute an important part of today's business system of both developed and developing economies, include a variety of different firms encompassing a wide range of industries.

Similar to those in other countries, SMEs in Malaysia are heterogeneous in nature. These firms differ in type of founders, in management style and sophistication, in stage of development and technological advancement as well as in general performance. Appropriately, developing a taxonomy of SMEs is a prerequisite for a systematic study on SMEs.

In the developed countries, as documented in the literature, several attempts have already been made to develop taxonomies of SMEs. Among the most outstanding ones are the taxonomies provided by the Economic and Social Commission for Asia and Pacific (United Nations, 1992), Rizzoni (1990) and Hosmer et al. (1977).

The aim of this paper is to examine these three taxonomies with the hope that we could get some insights into developing our own taxonomy for the Malaysian SMEs.

The present paper is structured as follows. We begin, in Section Two, with a brief interpretation of the **taxonomy** concept. In Section Three, the rationale behind the need for a taxonomy of SMEs in Malaysia is highlighted. This is followed by a review of three interesting SMEs taxonomies that have so far been developed (in the literature). Then, based on the information gathered from this review, we suggest some possible ways to develop a taxonomy for the Malaysian SMEs in Section Five. The paper is concluded in Section Six.

DEFINING TAXONOMY

The *Webster Newworld Dictionary* defines **taxonomy** as **classification**. Further, the *Oxford Advanced Learner's Dictionary* interprets taxonomy as **scientific process of classifying living things**. For the purpose

of this paper, the term **taxonomy** is used to refer to the **systematic grouping of SMEs based on certain characteristics**.

A taxonomy represents a number of specific and separate attributes which are meaningful collectively rather than individually. Therefore, a taxonomy for SMEs provides a means for grouping them – to help ascertain and explain why some SMEs are relatively unique and have strong commonalities with others.

WHY STUDY SMES TAXONOMY?

In recent years, SMEs in Malaysia have gained increasing attention from the Malaysian Government. Consonant with this development, researchers have also shown their increasing interest in studying this economic sector.

Whereas research on SMEs has been increasing, the issue of how they differ from each other (i.e., the development of a taxonomy) does not appear to have received any attention in the Malaysian SMEs literature. Whereas SMEs are heterogeneous – at least in terms of their capabilities, resources, and requirements – previous studies on SMEs in Malaysia have mainly concentrated on observing and reporting certain demographic characteristics. (Sim, 1991).

Developing a taxonomy for the Malaysian SMEs could be viewed as the starting point in the tradition of systematic and rigorous research on SMEs in this country. A taxonomy for SMEs is considered useful for several reasons:

- a. In general previous studies seem to assume that SMEs are homogeneous. Consequently, findings of these studies are not capable of fully reflecting the true nature of SMEs since they are actually heterogeneous. As such the strength of these findings in helping us to understand, explain and predict SMEs behaviour could be doubted.
- b. Any attempt to investigate SMEs as a whole would be impossible to produce accurate information since there are too many SMEs in too many different industries. Here, the role of an SMEs taxonomy is to facilitate researchers so that a more

systematic research according to the type of SMEs could be initiated.

- c. Assistant programmes for SMEs that have been developed so far in this country are based on the assumption that SMEs are homogeneous and as such all SMEs are viewed to have the same problems, constraints and needs for their successful operations and growth. On the contrary, the reality is that SMEs are heterogeneous and hence, they need tailor-made assistant programmes for them. Having said this, with the presence of a taxonomy for the Malaysian SMEs, more effective policy formulation and implementation for SMEs could be expected.
- d. A taxonomy for SMEs is useful for SMEs owners and managers in identifying which category they are in. Such information is insightful for them in knowing their industry, market, strengths, weakness, opportunities, threats and requirements.
- e. As a field of study, the foundation or framework that has been laid down in the literature for explaining SMEs are still weak. This is because the SMEs sector has not yet been systematically and rigorously studied. In fact, previous studies on SMEs are fragmented in nature. Therefore, it is plausible to believe that the development of taxonomies for SMEs could pave the way towards a more systematic and pragmatic approach to understanding SMEs.
- f. Currently, SMEs in Malaysia have been variously defined by different parties (Hashim 2000a; and Hashim 2000b). In this connection, an SMEs taxonomy which is developed based on the belief that they are heterogeneous, could be useful in guiding the development of more appropriate definition (s) of SMEs.

To generalise, it will be easier for us to examine and understand various aspects of SMEs if there is a taxonomy for them. A better understanding of the nature of SMEs is of great value to owners/managers of such firms, policy makers as well as research students who wish to conduct further research in this area.

A REVIEW OF THREE TAXONOMIES

The literature indicates that studies in developed countries have identified the different types of SMEs. According to these studies, the different types of SMEs evolved from the imperfections in the economy that may result from changes in consumer demand, levels of technology and infrastructure, as well as the personal characteristics of owners/entrepreneurs.

Further, according to Rizzoni (1990), SMEs have different structures and develop different patterns of behaviour, particularly in adapting to the environment.

However, in Malaysia, there is still no published work to suggest that there has been any attempt to determine a more precise identification of the different types of SMEs.

To the best of our knowledge, it has also never been suggested in the small business research literature in Malaysia that SMEs have different structures and develop different patterns of behaviour in adapting themselves to the environment.

For the developed economies on the other hand, several attempts to develop taxonomies for SMEs can be found in the literature. The studies by the United Nations (Economic and Social Commission for Asia and the Pacific), Rizzoni (1990) and Hosmer et al. (1977) are some of these attempts made to develop SMEs taxonomies – to identify the various types of SMEs.

Based on the various features of SMEs such as the personal characteristics of the owners/entrepreneurs, characteristics of the sector where the small firm operates, the stage of the life cycle, and the characteristics of the firms' technology, these studies managed to identify the various types of SMEs. These suggested taxonomies are briefly examined in the following sub-sections.

The Taxonomy of SMEs Developed by ESCAP

Over the years, in adapting to changes, three broad types of SMEs have been identified by the Economic and Social Commission for Asia and the Pacific (ESCAP).

According to the ESCAP (1992), SMEs in the Asia and Pacific region comprise of a wide range of plant sizes and technologies, both across and within these developing countries, covering three broad levels of activities. It is based on these three broad levels of activities that ESCAP classified SMEs into the following three groups of firms:

Taxonomy Developed by ESCAP
1. The Modern SMEs
2. The Traditional SMEs
3. The Agro-based SMEs

a. *The Modern SMEs*

Located at the top of the three broad levels of activities, the modern SMEs are often closely linked with large firms as subcontractors and producing products such as metal goods, paints, processed foods, plastic goods and wood products. According to ESCAP, this type of enterprises generally use more modern technology and locate themselves nearer to cities and ports with well developed infrastructure facilities. Urbanisation and localisation tend to facilitate the growth of these SMEs.

b. *The Traditional SMEs*

As oppose to the modern SMEs, the traditional SMEs consist of artisans, workshops, household units and crafts. ESCAP observes that SMEs in this group usually depend on local markets for supply of raw materials and sales of final products. SMEs in this group also operate with low technology, in fragmented markets and are usually labour-intensive.

c. *The Agro-Based SMEs*

The agro-based SMEs lie between the modern and traditional SMEs. According to ESCAP, these SMEs are often found in semi-urban areas, which utilise agricultural raw materials as major production inputs, but may also depend on other outside markets for selling their products. These SMEs cluster around towns and populated areas.

They are also seen to have potential to assist underdeveloped economies in their development process.

According to ESCAP (1992), of the three types, the modern SMEs are considered the most important. This is because these SMEs emphasise on skill and knowledge-based activities. Additionally, these modern SMEs are more adaptable to the current business environment.

The Taxonomy Developed by Hosmer, Cooper and Vesper.

In addition to the three types identified by the ESCAP, Hosmer et al. (1977) classified SMEs into three other categories. Based on the variety of smaller companies, their wide range of performance and the characteristics of the owners, the authors developed the following three classifications:

Taxonomy Developed by Hosmer, Cooper and Vesper
1. The Mom and Pop Company
2. The Stable High-Payoff Company
3. The Rapid Growth Company

a. *The Mom and Pop Company*

According to Hosmer et.al, this type of companies are small in size and that they will always remain small. Many firms that fall under this type do not hire employees, but depend on the proprietor or members of the family to run the daily operations of the enterprise. This is because the profit margins are generally inadequate to warrant the employment of additional workers.

SMEs classified under this type are usually geographically scattered and normally require relatively little capital to start. Furthermore, many of the managers/owners of these businesses have modest education and most probably have no previous managerial experience. Examples of this type are retail and service firms such as the neighbourhood restaurants, groceries stores and beauty shops.

b. *The Stable High-Payoff Company*

Unlike the mom and pop type of companies, the stable high-payoff companies provide their owners with higher income, substantial freedom and many other benefits. In some cases, owners of such companies put in long hours and selects to do so by employing or training others to assist with most of the day-to-day operations, where-by allowing the owners to concentrate on other broader policy issues and activities.

According to the authors, the stable high-pay-off type of companies normally adopt competitive strategies in order to maintain their profitability. In certain cases, this type of companies also enjoy the monopoly of a particular market – a market which is not big enough to attract other competitors. The operations of such companies are also characterised by higher capital requirements, specialised know-how and also protected by patents. Some established retail services firms, and many of the manufacturing firms fall into this category.

c. *The Rapid Growth Company*

This type of firms are characterised by their high payoff as well as growing profitability. These rapid growth enterprises normally have more than one owners and they do not enjoy as much independence as the owners of the stable high-payoff companies.

The operations of this type of companies are more demanding. Due to their growth potentials, this type of enterprises needs adaptation, constant change, new systems, and also the development of new skills by the managers.

SMEs under this category are normally found and positioned in growing markets. As such, they are also characterised by having more capable management – management which is willing to take risks and having satisfactory level of financing.

In addition, they are known to use competitive strategies such as the growth strategy. Having functional policies that can lead to competitive positions based upon their unique products or lower prices, is another feature of SMEs grouped under this category.

Rapid growth firms normally have strong management as the results of previous managerial experience and the skills of the founding members – such as in areas of engineering, sales and cost control.

In addition, the management of such firms are also willing to further grow by taking more risks; for instance, by broadening their product lines and adding more facilities to expand their current operations and businesses. Furthermore, in anticipation of growth, the rapid growth companies are likely to become candidates for mergers as well as having the potential to go public within a few years of their operations. Examples of this type of firms are the high-technology manufacturing ventures such as those involved in electrical and electronics, transportation equipment, and machinery and equipment.

The Taxonomy Developed by Rizzoni

Based on the different structures and behaviour of small firms towards technological innovation, Rizzoni (1990) identified six different types of small firms. The taxonomy of small firms as developed by Rizzoni are presented below:

Taxonomy Developed by Rizzoni	
1.	The Static Small Firms
2.	The Traditional Small Firms
3.	The Dominated Small Firms
4.	The Imitative Small Firms
5.	The Technology-based Small Firms
6.	The New Technology-based Small Firms

a. *The Static Small Firms*

This group of small firms indicate some degree of conservatism, inefficiency, and are not involved in innovative processes. According to Rizzoni, these firms managed to survive because they are sheltered from competitive pressures such as tax evasion, monopolistic competition, and low labour costs. Furthermore, the owners of these type of small firms practise their management based on their intuition and motivation.

This type of firms normally follow a non-growth approach that emphasise on achieving only satisfactory profit and survival in the short term. These static small firms are also characterised by the lack of financial resources as well as technical skills. Their operations are mainly confined to activities such as retailing and manufacturing that involves craft skills and experiences.

b. *The Traditional Small Firms*

This type of small firms operate in mature, labour intensive industries such as furniture, clothing and footwares. Unlike the static firms, these firms adopt innovations developed from outside and compete in markets where the goods are relatively homogeneous.

The traditional small firms also reflect limited level of entrepreneurial and technical skills. The adoption of innovative processes by these firms increases their efficiency, improves their production processes and hence allows them to compete in monopolistic markets.

c. *The Dominated Small Firms*

Similar to the vendor companies found in Malaysia, the dominated small firms produce on behalf of bigger firms. These type of firms normally operate in growing or mature industries that have high barriers to entry. These small firms enter these industries by establishing functional relations with the bigger firms. They also produce with low level of capital. The following are among the major characteristics of the dominated small firms:

- i. specialisation in their production activities;
- ii. highly dependence on the bigger firms for guidance;
- iii. lack of managerial skills, low differentiated structure and poor innovative ability;
- iv. owners/entrepreneurs normally display adequate technical skills that are acquired from previous work experiences;
- v. their objectives are mainly focused on short term survival and obtaining autonomy in operations; and
- vi. dependence on outsiders for additional assistance and resources.

d. *The Imitative Small Firms*

This group of small firms display imitative forms of innovations. The small firms belonging to this classification are identified to have the following characteristics:

- i. their operations are found in stabilised industries, along with the bigger firms such as in the machine tools industries;
- ii. having the capabilities in penetrating certain market, experiencing cost advantages, flexible and adaptable;
- iii. they emphasise on medium term objectives; and they are dependent on external resources;
- iv. displaying limited managerial skills, but possessing certain level of functional skills;
- v. their imitative innovativeness dependent on the bigger organisations; and
- vi. limited utilization of new technology and mainly operate in only some of the advanced services industry such as engineering.

e. *The Technology-based Small Firms (TBSFs)*

The technology-based small firms can be found in rapid-growth industries where technological opportunities are available. These opportunities resulted from the technologies in industries such as scientific instruments, telecommunication systems

and industrial automation which are yet to be stabilised.

Furthermore, the TBSFs are able to take advantage of the available opportunities due to the creativity and technical skills of the firms. The TBSFs are characterised by:

- i. the presence of technical entrepreneurship;
- ii. adequate managerial skills;
- iii. the availability of highly skilled employees;
- iv. the presence of R&D activities;
- v. the achievement of medium-long term objectives;
- vi. development of distinctive competency in the technological environment;
- vii. creation of networks with other firms such as in areas of research, design and technological information; and
- viii. the presence of product innovations.

f. The New Technology-based Small Firms (NTSFs)

The new technology-based small firms (NTSFs) are responsible for introducing new technology as well as the development of new industries. Correspondingly, the NTSFs play an important role in developing and commercialising innovations. These small firms are characterised by:

- i. the presence of high technical and scientific skills;
- ii. dynamic and participative management;
- iii. the presence of innovative entrepreneurship and managerial skills;
- iv. organic organisational structure;
- v. radical innovations as the results of research linkages with external sources;
- vi. achievement of technological leadership;
- vii. intensive research activities; and
- viii. found in industries such as those involved in bio-technologies and semi-conductors.

SUGGESTIONS FOR DEVELOPING A MALAYSIAN SMES TAXONOMY

After examining the three taxonomies provided in the previous section, we might get some insights into developing a taxonomy for the Malaysian SMEs. Perhaps, we could develop a taxonomy for the Malaysian SMEs based on any of the following criteria:

- a. *Level of SMEs capabilities or resources.* This would include aspects such as finance, technology, number of employees, skills and knowledge.
- b. *Types of owners or founders.* Here, for instance, we could compare their personality types, level of education, business experience, and involvement in the firms. Based on these criteria, we could classify SMEs into different business types, such as the study conducted by Wareham (1987).
- c. *Level or stage of development.* In this case, SMEs could be grouped into three: starting or infant SMEs (i.e., those newly established), growing SMEs (i.e., those in operations for only a few years) and matured SMEs which are in business for many years.
- d. *Management styles and sophistication.* To understand and appreciate this, a careful study needs to be conducted on the owners/entrepreneurs personalities and the level of the technological complexity of their firms' products and processes.
- e. *Level of performance.* Company performance especially in terms of ability to attain organisational objectives such as long term growth and profitability could be assessed. Based on the achievement of the organisational objectives, SMEs may be classified as poor performers, average performers and high performers.

CONCLUDING REMARKS

SMEs are made up of various firms representing almost all industries in an economy. The heterogeneity of

these small and medium-sized enterprises suggests that, any systematic and pragmatic attempt to understand, explain and predict their behaviour should start with the development of a taxonomy for them.

Our review of three of the taxonomies for SMEs that have been developed in the literature reveals that SMEs can be classified in several ways. They can be grouped for instance, based on their levels of technology, potential growth and profitability of their operations. SMEs can also be grouped based on their locations and modernisation.

It is hoped that our examination of these taxonomies would not only assist in our better understanding of SMEs in general, but would also provide insights into the development of a taxonomy for the Malaysian SMEs. Nonetheless, a careful investigation into the various aspects of SMEs needs to be carried out if we were to develop a comprehensive taxonomy for the Malaysian SMEs.

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