Measuring Clustering Benefits and Competitiveness: What Do Players Really Value?

Adrian TH Kuah
Nottingham Business School

John Day
Huddersfield University Business School

Abstract

Clustering bestows a beneficial environment by providing potential access to valuable local resources and favourable conditions that contribute to creating competitive advantage for firms. This paper presents a novel approach by integrating two research frameworks, one from each of economic geography and country marketing planning, to measure the benefits and competitiveness of the Singapore Financial Centre. A combination of a general benefits analysis and an importance performance analysis highlights the existence of important relationships and captures the needs of players within a cluster. Thirty-three personal interviews provide the exploratory dataset and illustrate the approach. This paper is relevant both to policymakers keen to develop, or initiate clusters, as well as academics and practitioners interested in the study of international competitiveness.

This paper combines and extends two research streams to present a novel approach in getting to the heart of the behaviour and needs of players in the Singapore Financial Centre. These are a General Benefits Analysis (GBA) and an Importance Performance Analysis (IPA) to explore the benefits and competitiveness of a cluster respectively. Data were sourced from a sample of 33 respondents to demonstrate the use of the approach in this exploratory study. There were six directors, 20 senior managers, and seven junior managers, all of whom had more than five years experience of working in that cluster and coming from a diversity of financial institutions. This novel approach contributes to the study of international management while offering a way to actualise Porter's (1990) diamond concept and apply it in practice.

The extent of beneficial clustering effects is an important question, not lest many governments and regional development agencies are expending a great deal of resources to the support of clusters (see, for example, McDonald, Huang, Tsagdis and Tuselmann, 2007). More particularly, within financial services, clusters are an obvious descriptor of key global financial districts (Reed, 1981; Sassen, 1991; Gieve, 2007). London, New York, Hong Kong, and Singapore are all leading world cities and all have prominent financial centres (Beaverstock, Smith and Taylor, 1999).

Reed (1981) observes the rise of a strong financial and banking district in Singapore more than a quarter century ago, with the origins stretching as far back as the early 1900s (Kuah, 2008a). The Singapore Financial Centre has recently undergone a liberalisation process from 1999 to 2003, and recently taken the number four position after London, New York and narrowly missing the third spot after Tokyo (Tucker, 2008). Therefore, the choice of this lesser-explored centre is of interest especially to management scholar interested in the Asia-Pacific region.

The current literature generally follows Porter's (1990) terminology of industry clusters. Four key determinants constitute the diamond of national advantage: factor conditions; demand conditions; related and supporting industries; and firms' structure, strategy and rivalry. The relationship between a location and its competitive industry cluster is symbiotic: clusters contribute to national competitiveness and national competitiveness drives globally competitive clusters. While Porter (1990) recognises the clustering phenomenon and provides an insightful definition, the concept does not suggest any way to measure it. It does not encourage the researcher to try to understand behaviour of a cluster, nor the needs of its players, in intimate detail.

This study draws inspirations from the IPA concept of Martilla and James (1977); the notion from Nielson (1983) of applying strategic marketing to a nation; and the work of economic geographers like Cook, Pandit, Beaverstock, Taylor, and Pain (2007). The GBA, which Cook et al (2007) propose, measures the benefits derived from the vertical and horisontal relationships in a cluster. The technique enables one to understand the extent of beneficial interactions between the cluster members, in which knowledge exchanges. However, it does not look at the value of the location attributes, the factor conditions, and their competitiveness. These are important reasons that attracted firms to a location in the first place and will continue to attract new entrants—the sign of a successful cluster (Porter, 1998). Martilla and James (1977) propose the concept of the IPA, which treats the cluster players as "customers" of the environment and analyses their needs and perceptions. Figure 1 presents the theoretical framework.

Figure 1: The Theoretical Model
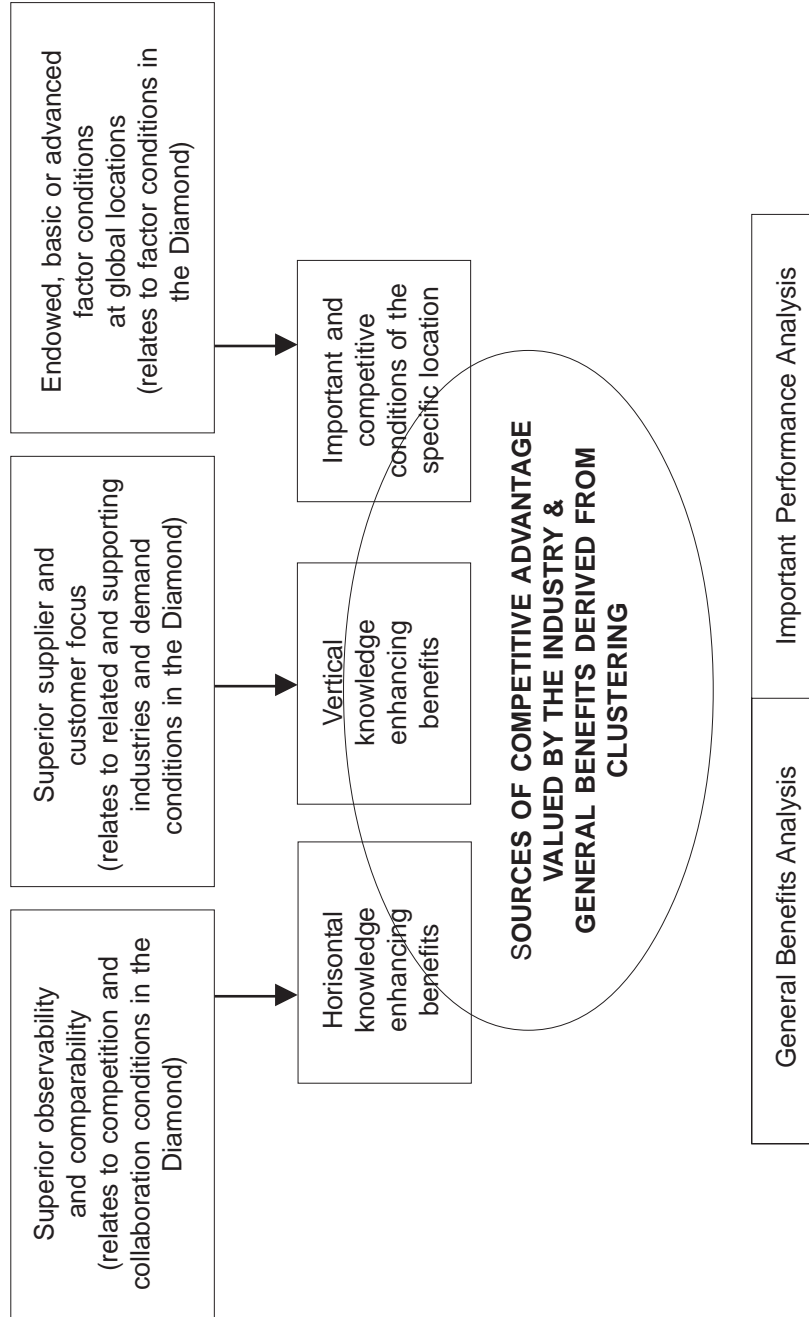
The first column in Figure 1 represents the Cook et al's (2007) argument on the enhanced benefits gained from the horizontal interactions between firms in a cluster. This relates to the competition and collaboration of firms in Porter's (1990) strategy, structure, and rivalry component. The second column extends Cook et al's (2007) argument and represents the vertical interactions between a firm, its suppliers, and its customers. This column supports the need for related and supporting industries to cluster together (Porter, 1990), as some of the related industries are (internal) customers in a cluster and supporting industries are suppliers. In addition, the presence of customers and the cluster's ability to attract external customers represent the local demand conditions in a cluster. Finally, the third column represents the location attributes and factor conditions, which by using the IPA would reveal what the industry players value most, what attracted them there in the first place, and what might continue to draw new entrants.

One key advantage of IPA is that it lends itself to a simple visual representation. As has been shown recently by Day and Schoemaker (2005) on peripheral vision, and Kim and Mauborgne (2002) on strategy canvasses, reducing complex situations to simple and visual frameworks is hugely insightful. The output from an IPA can provide diagnostic information to help regional planners consider not only how much resource to allocate for cluster development but also where to focus that allocation.

Antecedents

Three important antecedent literature streams underpin the development of the theoretical model in Figure 1: firstly, the theory and practice of importance performance analysis; secondly, the consideration of the sources of international competitiveness; and lastly, a consideration of the forces that drives industry players' behaviour and superior conditions that cater to their needs.

Importance Performance Analysis

Martilla and James (1977) suggest the application of the importance performance grid, more commonly known as the importance performance analysis (IPA), which perpetuates in its diversity and applicability. For example, Deng (2007), and Zhang and Chow's (2004) apply on to the tourism industry; Vanryzin and Immerwahr (2007) on citizen satisfaction surveys; Helgesen (2007) on Norwegian fish exporters; Beldona and Cobanoglu (2007) on in-room hotel technology; Ibrahim, Joseph and Ibeh (2006) on United Kingdom banks and electronic service delivery; O'Leary and Deegan (2005) on Irish tourism, and Joseph, Yakou and Stone (2005) on university student satisfaction. These analyses seek to discover whether priorities that

organisations give to their products or services are those that their customers actually value. By doing so, organisations can evaluate the priorities against their delivery performance.

Another technique is SERVQUAL (Parasuraman, Zeithaml and Berry, 1985), which measures the gap between customer expectations and service delivery. There are also derivatives, for example, E-S-QUAL (Parasuraman, Zeithaml and Malhotra, 2005). Some authors, for example, Joseph et al (2005); O'Neil and Palmer, (2004a and b); Aigbedo and Parameswaran, (2004) see them as complementary since SERVQUAL can be used to generate the salient attributes for an IPA, while the IPA is a simple way to demonstrate appropriate strategic actions. However, Hudson, Hudson and Miller (2004) argue that the IPA measures the difference between performance and importance, while SERVQUAL measures the difference between performance and expectations. Interestingly, Hudson et al (2004) show that SERVQUAL, the variation SERVPERF and IPA provide broadly similar interpretations of pertinent delivery attributes.

In practice, advances made on the IPA concept over the last three decades have been in the refinement of the measurement scales using statistical methods (see Abalo, Varela and Manzano, 2007; Deng, Chen and Pei, 2008) alongside more insightful interpretations, and drawing out of those concomitant strategies that maximise customer satisfaction (see Slack, 1994; Abalo et al, 2007; Bacon, 2003). These studies mainly concern business-to-consumer satisfaction. Customer satisfaction questionnaires, qualitative interviews or the econometric manipulation of large datasets provides the data and analysis.

This paper takes its cue from a fascinating and hugely innovative article by Neilson (1983) that advocates using strategic marketing planning at the country level. IPA can also be a useful technique to represent and analyse the data by obtaining the industry players' evaluations of their relative country performance based on their judgements of the importance of certain conditions. Key insights on the attractiveness of the location could be gathered. Policy makers could use the information as a diagnostic tool to determine the extent and priority of resource allocation needed to rectifying weaknesses in their local cluster.

The fundamental assumption of the IPA is that not all attributes will contribute equally to competitiveness of the location. If a country performs well in those conditions considered important by pertinent industry players, the nation can enhance the likelihood of a successful industry cluster. On the other hand, poor performance on an important condition may have detrimental consequences for both the industry and the country. In successful clusters, competitive cluster conditions are often resources for the firm, which

may be rarer in origin and not easily assembled or replicated at another location.

Figure 2: Importance Performance Analysis and Decision Zones
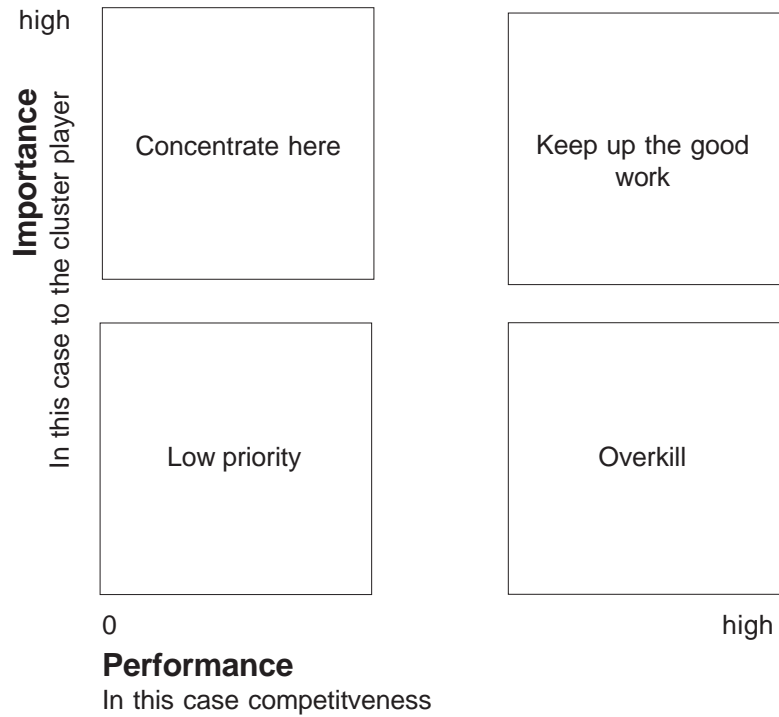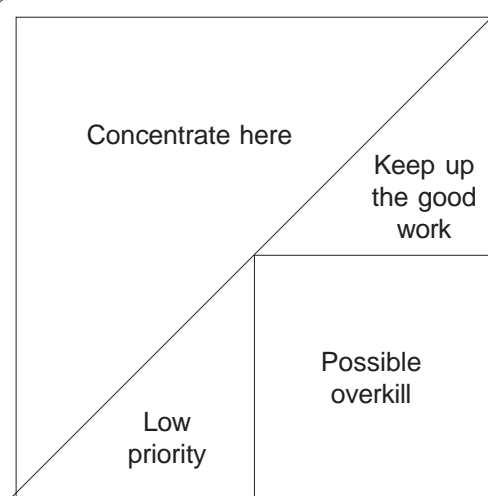
Figure 2 (a)

Figure 2 (b)

Figure 2 (a) illustrates the original way that the Importance Performance Grid (matrix) divides into zones. *Figure 2 (b)* illustrates the next most popular zoning method, with a diagonal (or iso-line) drawn from the origin along where performance and importance are equal Eskildsen and Kristensen (2006) conduct an interesting discussion on how different authors have suggested dividing the grid. The results on a grid that combines the diagonal line and grid divisions that occur below that line (as Abalo et al, 2007) can provide insightful findings. The zoning of the matrix is critical, as it will affect the strategic advice given. Whilst the greatest strength of the matrix is its visual simplicity, the data point locations need careful and thoughtful interpretation and explanation to the client.

Sources of International Competitiveness

What affects competitiveness of a location may also come through the four pinnacles of diamond (see Porter, 1990): the factor conditions; demand conditions; related and supporting industries; and the firms' structure, strategy and rivalry. The popularity of the diamond concept among policymakers may in part stem from Porter's (2000) assertion that clusters are of benefit to all industries. The IPA approach has the potential to measure the extent to which firms in a specific industry value those clustering conditions provided by that location. For a government concerned with effective intervention, the diamond paradigm provides an obvious framework from which to draw and evaluate those environmental characteristics that would enhance competitive advantage for the firm. Porter's thoughts in this area is pervasive, since firms can draw resources from the proximate environment, they may seek to supplement their own value chain with the value system found in a cluster.

The diamond is a normative and rather non-evaluative concept as to what important conditions really matter to the firm in a specific industry. Porter was initially more concerned with describing the clustering development process rather than what actually takes place in the cluster (see Clancy, O'Malley, O'Connell, and van Egeraat, 2001).

Earlier cluster studies using solely the diamond framework (for example, Oz, 2002; Kuah, 2008b) either could not report what it was that the industry players valued particularly, or if they did concern themselves with the beneficial outcomes to cluster members it was without a great deal of focus. By concentrating upon a single cluster and bringing actual behaviour and needs into sharp focus, one can overcome one of the criticisms leveled at the Porterian Diamond—that it is too generalised an explanation when applied across nations.

Porter (1998b), however, points that the enduring competitive advan-

tage in a global economy lies increasingly in local things—knowledge, relationships, motivation—that distant rivals cannot match. Miller, Henthorne and George (2008), supporting Kuah's (2002) "economy of globality and proximity" principle, argue that the economies of small countries have an inherent edge due to their geographical compactness. Though the economy of globality means that production of goods and services does not necessarily need to be close to the end-user, proximity still provides many value-added services. One needs to look inside the cluster itself and to pay due regard to its historical evolution and particular characteristics. Economic geographers, such as Cook et al (2007), therefore prescribe focusing on the centripetal and centrifugal forces that actually act within a cluster.

Behaviours, Benefits, and Needs of Financial Clustering

Cook et al's (2007) study looks at the forces influencing financial services players at London Financial Centre to get to the heart of the behaviour of firms. They identify important aspects of the horizontal knowledge enhancing benefits (superior observability and comparability) and vertical knowledge-enhancing benefits (superior customer focus) as being attributable mainly to face-to-face contacts in the economy of proximity. They found that member firms benefited from benchmarking against competitors, being close to other leading competitors and to other organisations such as professional bodies. These are horizontal knowledge enhancing benefits. Cook et al (2007) identify that being close to market-leading customers and an appropriate labour pool are two of the vertical knowledge enhancing benefits.

While this research stream reveals many of the horizontal dimensions of interactions between firms in a cluster, which lends support to Porter's (1990) argument, it neglects an important part of the vertical dimensions (suppliers and supporting industries). The value system integrating the value chains of industries is an important dimension to clustering.

Porter (1990: 239–276) argues that the diamond is equally applicable to the internationalisation and competitiveness of the services sector, but does not provide specific examples of the financial services industry Therefore, to understand further the needs of existing and potential players in an international financial centre warrants a further consideration of the extant literature.

Reed (1981) and Sassen (1991) emphasise the importance of political, communications, and regulatory conditions to the competitiveness for an international financial centre. Stable legal and regulatory environment arising from political stability (Hall, 1966), financial stability (Reed, 1981) and regulation (Sassen, 1991) are also necessary and important for interna-

tional financial services. According to Porter (1998a), internationally competitive suppliers, or supporting industries, create advantages to downstream activities by delivering cost effective inputs and providing innovative and upgraded alternatives. Porter (1990) also suggests that technology played a role in the internationalisation of financial services, while Reed (1981) also recognises that a strong information and communication infrastructure is most important to an international financial centre.

Stable local infrastructure such as power supply is important to the electronic manufacturing and the information technology sector. In the London Financial Centre, the IT and financial clusters have a connected relationship (Kuah, 2008b). In addition, the corporation tax regime is thought to be an important consideration for businesses in London (Lascelles, 2003), while Nielsen (1983) hypothesises that tax reduction is one way which a government can intervene to promote its industry.

Finally, the availability of skilled labour is an important factor condition for services, especially where there is growing complexity of products and sophistication of customers (Porter, 1990). Firms in vibrant clusters can tap into this pool of specialised and experienced resources, thereby lowering their search costs and time wasted on the learning curve. One main feature for Singapore was its liberal government policy towards foreign talents and the lack of strong unions (Kuah, 2008a). These conditions, arising as the pinnacles of the diamond, may be what financial services institutions value from a clustered location like London or Singapore. The ranking of their importance is less obvious from the literature.

Method

The choice of the Singapore Financial Centre complements the Cook et al's (2007) study, particularly given that Reed (1981) and Beaverstock, Smith and Taylor (1999) argue that Singapore, alongside London, is one of the 10 "alpha" cities with significant financial agglomerations. The choice of the cluster meets similar criteria to those used by Porter (1990) and Clancy et al (2001) to distinguish leading economic clusters. Namely, the cluster holds a relatively large share of world exports in financial services; the sector is a sizable contributor to national exports with this cluster contributing some 12.3 per cent to Singapore's gross domestic product; and there is a positive balance of trade in services.

Data Collection

There were 33 face-to-face interviews conducted over a two-week period in summer 2003. Each interview lasted about 40 minutes using the semi-structured format to allow responses to flow. Personal contact net-

works provided many of the interview referrals, but all had to be experienced industry players with more than five years in that financial centre and all had to be graduates in management positions. Because participants of this calibre were under obvious time pressure, the sample was a non-random snowball. Stratification occurred by sector type and organisational seniority to encompass the whole industry cluster. The data collected included the firm demographics and business activities in the cluster. Some of the participants were interviewed collectively but all responded individually. Questions were available beforehand to enable them to give more thoughts prior the interview. No one sought prior clarifications on these and this suggests that the questions were clear, or did not contain terminologies alien to the participants. The study had two main parts: 12 questions that looked at the cluster behaviour and knowledge-enhancing benefits, that is, the components of the GBA; and there are another 12 questions to capture the needs and perceptions of industry players on the relative importance and performance of clustering conditions, that is, the IPA.

Operationalisation of the General Benefit Analysis

The GBA concerns mostly intangible general benefits derived from clustering in the Singapore Financial Centre. Figure 3 details the 12 semi-structured interview questions in the first column and their theoretical rationale in the second.

Four of these questions concern horizontal knowledge enhancing benefits of competing firms, while six questions cover vertical knowledge enhancing benefits. Two of the questions are of a more general nature and less amenable to a precise classification. All these questions used a Likert Scale of 1 to 5 in soliciting the response, and are similar to Cook et al's (2007) but applied to the Singapore Financial Centre.

Operationalisation of the Importance Performance Analysis

This research derives conditions for the IPA through a positivist deductive approach using the extant literature on financial centres. Although other approaches are possible using managers' knowledge or focus groups to cater for SERVQUAL (see Aigbedo and Parameswaran, 2004; Hudson et al, 2004) and generating larger statistical datasets, there is no reason why expert industry players' perceptions are inferior.

The extant literature suggests conditions important to an international financial centre. They are: (a) good local economy and demand for products; (b) good regional economy and demand for products; (c) availability of supporting industries; (d) stable legal and regulatory environment;

Figure 3: General Benefit Analysis and its Focus

Horizontal Knowledge Enhancing Benefits—Collaboration

Local business organisations (such as the Chamber of Commerce) provide useful links	These are horizontal knowledge enhancing benefits through having professional bodies, trade associations and business networking organisations located nearby.
Universities and research centres provide a valuable source of new knowledge and information	Many technology clusters also enjoy benefits from linkages to nearby universities, 'think tanks', standards setting agencies and training institutes.

Horizontal Knowledge Enhancing Benefits—Competition

Most of the businesses that we support are located here	Reflecting the presence of an entire value system encompassing incumbents' value chains, a part of horizontal knowledge enhancing benefit by being among competing firms.
We can react to our competitors better as news spreads fast	Reflecting the desire to benchmark against competitors as there would be significant informational and knowledge spillovers. Another benefit of horisontal knowledge enhancing benefit by being among competing firms.

Vertical Knowledge Enhancing Benefits—Customers

It is easier to meet prospective clients and develop new businesses here	Reflecting being close to market-leading customers, with the ability to interact with them, a part of vertical knowledge enhancing benefit.
It is easier for customers to find us here	Customers external to the cluster will find it easier to interact as suppliers are more easily found, thus minimising search costs as customers can shop around and easily locate information on products and services. Another part of vertical knowledge enhancing benefit with the customers.

Figure 3: General Benefit Analysis and its Focus *(Cont'd)*

Vertical Knowledge Enhancing Benefits—Labour Pooling

The local labour market provides a pool of labour appropriate to our needs	Access to an appropriate labour pool or benefiting from a skilled labour supply is essential as a resource for the delivery of financial services, part of vertical relation-ship to sources of supply.
Key skills appropriate to our business are available in the local labour market	Reinforcing on specialised labour pooling and knowledge accumu-lation in a successful cluster, so that firms may be able to quickly tailor their needs and recruit people at short notice.

Vertical Knowledge Enhancing Benefits—Supporting Industries

It is easier to contact our supplier if we are located here	Reflecting access to local compet-itive supporting industries, a part of vertical relations with the suppliers.
We find the local supplier base val-uable, including a pool of appropriate companies providing key services	Reinforcing the ability to find firms who will supply bespoke services, a part of vertical relations with the suppliers industry.

Other General Benefits

Our managers and staff like this location	The attractiveness and reputation of a location increases a firm ability to attract and retain key staff. Relates to the quality of infrastructure, trans-port and the environment.
It is a useful location to establish our reputation	Locating in a successful cluster pro-vides potential customer with an indi-cation of quality and reliability that translates into reputation. The address may increase one's perception of credibility and reputation.

(e) good transportation and communications infrastructure; (f) availability of stable utilities; (g) availability of good fiscal policies (tax incentives); (h) availability of good offices and working environment; (i) incentives to employ local labour; (j) availability of skilled personnel; and (k) stable political environment. Interviewees are able to offer a response of their own.

The interviewees select the five most important conditions and rank them in order of importance to their organisations, and then from the same list to select and rank what they considered to be the five most competitive conditions for the financial centre. The conditions become markers on the IP Matrix after data normalisation.

One methodological issue that Abalo et al (2007) raised is that datapoints can crowd together and obscure differences. One way around this is to force respondents to choose only some but not all from the list, thus reducing overload or indecision that might lead to a lack of discrimination. Choosing the top five conditions would be an appropriate compromise. Clearly, this comes at a cost of losing some data but one could argue that these are the less influential attributes. A dual cross-hair and diagonal line approach to partitioning the matrix is used to draw out a discussion about strategic options.

As this study collects data on the participant's position in the company (classified as director, middle manager and junior manager), it can report both an overall matrix and sub-matrices to give a more rounded understanding of the sample. In general, this sub-matrices approach, where Wu and Webber (2005); Williams and Dossa (2003); and Bruyere et al (2002) suggest, avoids making management recommendation that are too simplistic.

Findings
General Benefit Analysis
Horizontal Knowledge Enhancing Benefits—Collaboration
There are 12 agreements and eight disagreements that local business organisations, such as the local chamber of commerce, provide useful links to the financial institutions. Another 13 industry players have no strong opinion on this issue. Similarly, there are 11 agreements and eight disagreements that universities and research centres provide a valuable source of new knowledge and information, with 14 expressing no strong opinion. Local business organisations are useful as networks, and universities and research centres provide a valuable source of new knowledge and information to some industry players, but the benefits are not widespread. The mixed results contrast findings from Cook et al's (2007) study on the London Financial Centre.

Horizontal Knowledge Enhancing Benefits—Competition

About 38 per cent of the industry players report that more than half of their businesses are in the local market and 2 per cent of the industry players report that more than half of their businesses lay in regional markets. This suggests that some of the business linkages in the Singapore Financial Centre lie beyond the shores of the city-state. In spite of this, the demand arising from the local economy is important to 58 per cent of the industry players and another 42 per cent of the industry players contend the demand arising from the regional economy is important.

Twenty-four industry players indicate there are good business-to-business relationships within the cluster, and they are located there to support other member firms. Most of the industry players (25 participants) agree that news spread fast in the Singapore Financial Centre and they can react to the news better by being in the cluster. These findings are in line with the Cook et al's (2007) study on London.

Vertical Knowledge Enhancing Benefits—Customers

Evidence exists to suggest that industry players find it easier to meet prospective business clients and develop new businesses in Singapore, with 25 industry players agreeing on this. This result suggests that the ability to interact with the clients forms an integral part of the vertical knowledge enhancing benefit. Also, there are 21 agreements and three disagreements on the general benefit that customers find it easier to find the firms when they are located in the Singapore Financial Centre. Again, the finding seems in line with Cook et al's (2007) study.

Vertical Knowledge Enhancing Benefits—Labour Pooling

For the question on the availability of key skilled personnel in the local labour market, 81 per cent of the industry players indicate that they find it beneficial to their performance. A total of 78 per cent perceive that the local labour market provides a pool of labour appropriate to their needs. One cannot ignore Singapore's skilled and educated labour force and almost 60 per cent of industry players contend its importance. Sixty per cent of the industry players also feel that Singapore is competitive with the provision of skilled labour for her industries, while 10 per cent perceive that there are credible incentives to employ the local skilled workforce.

An expatriate who was a former CEO of the Deutsche Bank Group, now managing director of his company, highlights that Singapore's labour force is "process-oriented and numerical", particularly suitable for financial services industries. Another observer, who is an assistant director in a foreign bank, points out: "Singapore has a pool of skilled labour whereby

international players can actually tap into and set up offices here. Apart from Hong Kong and Japan, if you look at the rest of the region, in terms of the labour force standard of education, Singapore is quite far ahead. In terms of all the levels of labour force *(sic)* in the financial services, including intermediate management, or even top management, Singapore has provided adequately at all the levels."

Vertical Knowledge Enhancing Benefits— Supporting Industries

The availability of supporting industries for the financial centre does not rank highly as an important condition by the 74 per cent of the industry players. However, in contrast, 18 industry players agree that they find it easy to contact suppliers, while another 13 express no strong opinion. Sixteen industry players point out that the local supplier base is valuable, including a pool of appropriate companies providing key services, but an equal number expressed no strong opinion on the matter. The fact that an almost equal number of players have no strong opinions on the issue of suppliers and supporting industries in the Singapore cluster is indicative of a less significant presence of strong competitive supporting industries. It does suggest that the presence of strong and competitive supporting industries is less important to such firms relative to other diamond conditions.

Other General Benefits

Twenty industry players agree that Singapore is a useful location to establish one's reputation. With more discerning and sophisticated customers, locating in a cluster could provide an indication of quality and reliability for potential customers. Nineteen industry players feel that Singapore has a pleasant working environment, with only one disagreement. However, this benefit is quite general and does not cover the specificity of attractiveness in terms of transport, communication or buildings. The wording, in retrospect, may have been a little unclear on whether "environment" refers to the professional environment or to personal living space. Perhaps, this is why 13 industry players have no strong opinion on the matter.

The important horizontal and vertical relationships that form the first two columns of the theoretical model *(Figure 1)* serves to illustrate some of the inimitable characteristics that make the Singapore Financial Centre one of the leading financial centres in the world. The following IPA reveals if the needs of the industry players are met.

Importance Performance Analysis

Figure 4 (a) presents the combined result of the IPA based on the 33 respondents. A traditional "cross hair" interpretation suggests that Singapore has supported its financial services industry with some of the essential diamond conditions, such as the legal and regulation framework, a stable political environment, an abundance of skilled personnel, and good local market and economy. There seems to be no particular area that Singapore needs to invest and improve in order to support this industry. The finding suggests that Singapore has correctly identified important cluster conditions and has maintained good conditions for this sector by being quite competitive in the important conditions. There are no scores in the "concentrate here" category; some "low priority" areas that need addressing; two variables that suggest "overkill" relative to expectations; and the rest are in the "keep up the good work" category.

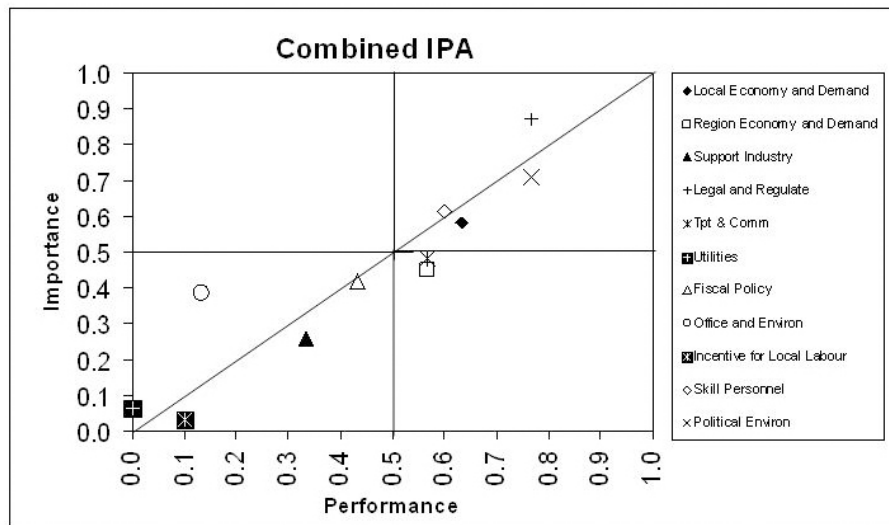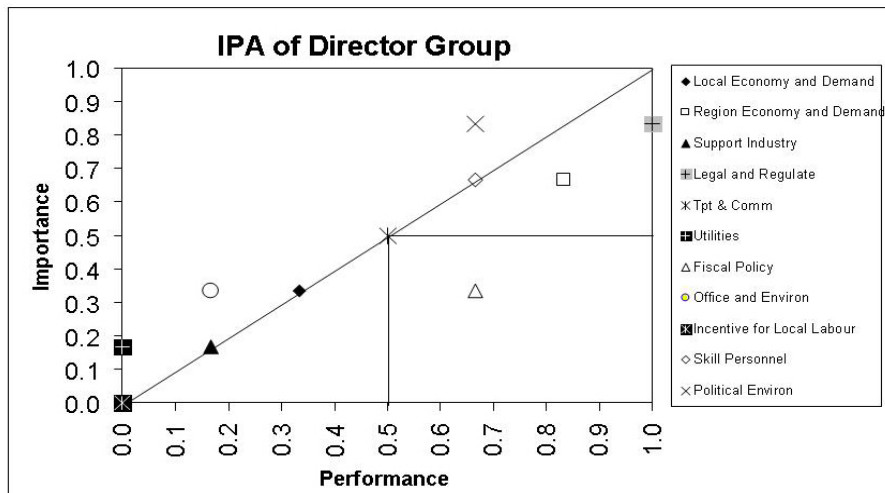**Figure 4:** Expectations of Different Groups

Figure 4 (a)

Figure 4: Expectations of Different Groups *(Cont'd)*

Figure 4 (b)

Alternatively, in *Figure 4 (a),* using the diagonal line as the boundary, then Office & Environment and Legal & Regulatory appear as areas on which to concentrate, but for different reasons. The former has a higher importance score than performance score (0.387, 0.133) and is a relatively poor performer. On the other hand, the latter is the best performer at 0.767, but the industry rates its importance as even higher. So it is not only low performing attributes that need enhancement, policy makers need to raise the "bar" at all levels. For all the other attributes, performance is on the right side of importance.

Different industry players will have different perceptions. *Figures 4 (b), 4 (c) and 4 (d)* present the IPAs for the subgroups. *Figure 5* summarises this variation by noting the responses for the subgroups; where JM is the junior managers group; MM, the middle manager group; and DG, the director group.

Figure 4: Expectations of Different Groups *(Cont'd)*
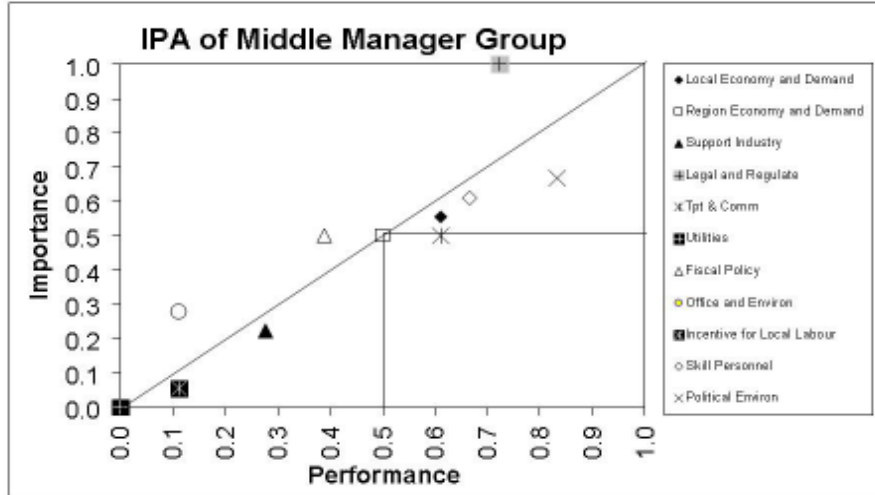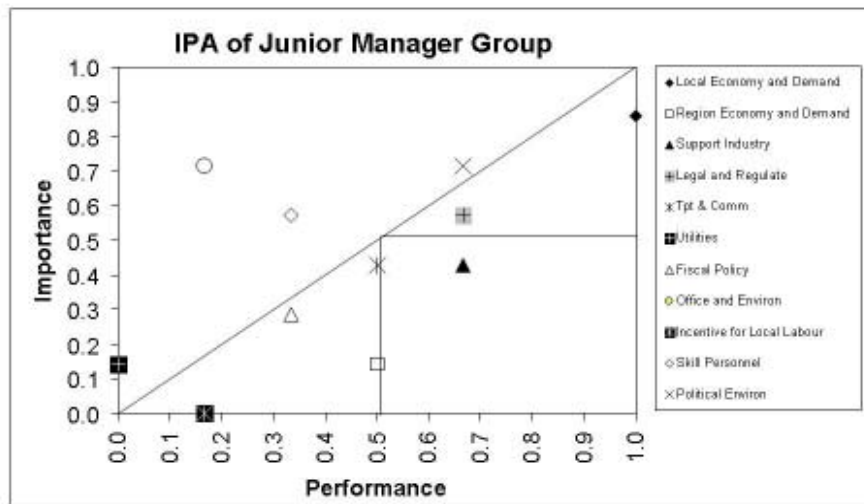
Figure 4 (c)

Figure 4 (d)

The Director group consisted of six managing directors or senior vice-presidents in four sectors of financial services. Although the low number of respondents could make the results less meaningful, this might be balanced out by their obvious role as key strategic decision-makers for their companies. This group has identified as important: the country's legal and regulation framework; a stable political environment; and a good regional economy and demand (instead of just local demand). Transport and communication infrastructure is quite important and competitive. They also feel that whilst Singapore has a favourable fiscal policy, it is less important to their businesses.

The Senior Manager group is both the largest and widest ranging. This group consists of 20 respondents from seven of the eight sectors, and identifies important conditions as the legal and regulation framework; a stable political environment; abundance of skilled personnel; and a good local market and economy. As with the Director group, they place importance to a good regional market and economy, as is a good transport and communication infrastructure.

While the Director and Senior Manager groups display broadly consistent opinions, the Junior Manager group (consisting of seven respondents) displays greater differences in opinion to their more senior colleagues. Although this group identifies important conditions as being the legal and regulation framework; a stable political environment; and a good local market and economy, they feel that Singapore is less competitive in the provision of a good working environment and skilled labour. What is most interesting is that the Junior Manager group identifies supporting industries as being important, and that in this respect Singapore is competitive.

Some cluster literature argues strongly for the importance of the presence of supporting industries but two of our groups did not identify this as important. At this stage, the authors are unsure whether the finding captures a real difference by managerial level with their different set of concerns, or whether it is due to a small sample. In addition, these respondents are from the insurance sector.

Together, this section and the previous one have added a new insight into that relationships do matter to cluster players by integrating both the GBA and IPA approach; and, shown the importance (in line with existing literature) of considering an IPA by sub-group. While expressing some concerns about the subgroup sizes, it is still interesting to note the difference responses by the junior managers. Given that they represent the future wellbeing of that cluster, they may well be the very group that policymakers want to retain in the cluster.

Figure 5: Results from the Importance Performance Analysis Sub-group Matrices

	In the Concentrate here quadrant	In the Low priority quadrant	In the Possible overkill quadrant	In the Keep up good work quadrant	On the Diagonal (ISO) line
Local Economy & Demand				JM, MM	DG
Regional Economy & Demand				DG	MM
Supporting Industries	MM	MM	JM		DG
Legal & Regulatory Environment	MM	JM (*)			
Transport and Communication	JM, DG	JM (*)		JM, DG	DG
Utilities	MM				MM
Fiscal Policy	JM, MM, DG	JM	DG		
Office and Environment		JM, MM			
Incentive for local Labour	JM			MM	DG
Skilled Personnel				MM	DG
Political Environment	JM, DG				

Notes: JM–Junior Managers;
   MM–Middle Managers
   DG–Director Group
   (*)–on the boundary betwen two quadrants

Conclusion

This paper presents a novel theoretical approach. It also illustrates that the approach yields a refreshing insight into the nature of clustering, its beneficial outcomes, and how better to cater to the needs of its industry players in Singapore. Business analysts and regional planners can gain valuable insights into what really matters on the ground to cluster members. The methodology contributes to the study of international competitiveness by extending and integrating two traditional research streams and applies the cluster concept in practice to deliver a sharp focus on what the industry players in a cluster really value within that business environment. Moreover, its simplicity has attractions when considering a dynamic and time-precious industry like financial services. The methodology is quick and relatively simple to administer and so eminently suitable to monitor long-term changes through repeated applications.

The analysis offers a good insight into how a financial cluster behaves and provides for its players in general and for the Singapore Financial Centre in particular. There are clearly some sources of competitive advantage in this location, such as the provision of skilled and specialised labor for financial services institutions as well as the buzz for new businesses and customers. Without a doubt, clustering bestows a beneficial environment by providing potential access to valuable, and by implication, difficult to replicate local resources that, in turn, leverage the competitive advantage of firms within that cluster. It is hardly surprising that governments and local planners would want to initiate or enhance clusters.

The general benefits analysis has similarities to the approach taken by Cook et al (2007) with a matching of many questions on beneficial effects, both vertically and horizontally, but this research extends the coverage on vertical relationships in the light of the diamond model. The approach would facilitate benchmarking one cluster against another. The importance performance analysis, in particular, is a good research tool for regional planners and business analysts to use in coming to a conclusion on the provision of clustering conditions for a particular industry, especially when influencing the location decisions for new entrants. Conventionally, IPAs explain and map the outcomes from large numerical datasets, but there is no reason not to use it with a smaller number of valuable industry player opinions. After all, they are the most important stakeholders in the cluster. There is every reason to keep this as simple and visual tool.

However, while arguing above that that a deeper qualitative approach is the way forward to understanding the subtle social nuances within a phenomenon, it may be of interest for some researchers to consider a research design based upon this combined approach and apply it to a larger and

random sample so that appropriate statistical methods like binomial test for the GBA or a multivariate regression for the IPA can be carried out.

While the dataset has a specific focus on a financial centre, some of the lessons on what is most important to an industry are transferable to other financial centres or indeed other clusters in the process of development. This article has moved the literature on clusters and financial centres along. Firstly, concerning important vertical and horizontal relationships and attractive cluster conditions; and, secondly to have reintroduced to the reader the important role that an IPA can play in considering strategy and policy to support cluster development.

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