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Leadership and Innovation in Small to Medium Enterprises in Indonesia

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Abstract

This study examined the relationship between leadership style and the innovative behaviour of small-to-medium enterprises (SMEs) in Indonesia. 170 SMEs from various industries participated in the survey that was conducted during 2001 – 2002 period. Factors, influencing innovativeness, were determined by using several quantitative data analysis methods. Companies with high levels of innovation were found to have horizontal organisational charts, long-term focus, and available resources and rewards for innovative activities. High commitment to innovation, long-term vision for the future, good acceptance of change, and a transformational style of leadership were identified as positive traits among the SME owner-managers. Transactional leadership styles may be required among Indonesian owner-managers in order to cope with a poorly educated workforce and the need to encourage greater employee loyalty.

Keywords: *Small Business, Entrepreneurship, Innovation, Asian Management*

INNOVATION AS A MAJOR DRIVER OF ECONOMIC GROWTH

Innovation is now driving private sector growth as companies realize they must innovate to remain competitive in today's global market. The past decade witnessed an excessive focus on short-term asset management and restructuring rather than enhancing competitiveness through innovation (Chang, 2001). As the rate of technological change continues to accelerate, governments and companies within the Asia-Pacific region have recognised that the adoption of new technology and innovation are the most critical factors to sustaining future economic growth (Yoshida, 2001).

The economic crisis that hit many of Asia's economies in 1997 provided a sobering lesson for both government and business leaders, forcing recognition of the need for enhanced innovation within local industry. In many Asian states this has focused attention on the small to medium enterprise (SME) sector. Within Indonesia small firms are a major source of employment and industry growth (Jones et al., 1997), contributing more than 90 percent of all employment within the manufacturing sector (Tambunan, 2000), and providing much of the innovation (Pambudi, 2001).

However, like many developing economies, Indonesian industry suffers from constraints in the form of social, cultural and structural impediments. Innovation within such an economy is therefore faced with unique challenges (Hadjimanolis and Dickson, 2000). There is a need for enhanced research methodologies capable of properly studying innovation within industry (Soutar and McNeil, 1993), particularly within developing economies. This study attempts to better understand innovative behaviour within SMEs, particularly why some firms are more innovative than others and what factors affect the ability of SMEs within an economy such as Indonesia's to innovate?

CULTURE OF INNOVATION IN SMES

Innovation is a key driver in enhancing global economic competitiveness (Birchfield, 2000). It is a key factor in success within increasingly knowledge-based and hyper-competitive environments (Johannessen et al., 2001). However, gaps remain in our understanding of why some organizations innovation more successfully than others (Troy, Szymanski and Varadarajan, 2001). For example, while culture is recognised as having a strong influence on creativity and innovation, research into the relationship between culture and innovation is sparse (Kwang, 2001), more like a 'black box' in which relationships are hard to determine (Shane, 1995). More information is required to assist in opening this 'black box', and identify the forces influencing an "innovation-supportive culture" (Chandler et al., 2000) within the organization, and the impact that leadership may have on this.

Innovation studies frequently emphasize the interrelationship between company structure and the ability to either encourage or resist innovation. According to Christiansen (2000), organization structure is a primary influence within the firm on job design, communication flow and resource allocation, thereby impacting on innovative behaviour. An organization's internal structure should be viewed not as an end in itself but as a potential instrument for innovation (Light, 1998). Organizational structure has been recognized as containing several variables likely to impact on innovativeness (Rogers, 1995; Soutar and McNeil, 1993). At least four key elements of organizational structure are important in this context: centralization and formalization, complexity, interconnectedness, and the degree of organizational slack.

Centralization is defined as the degree that power and control in a system are concentrated in the hands of relatively few individuals (Rogers, 1995). This is usually measured in terms of the overall hierarchy within the organization. Flatter structures with greater devolution of authority have been found to encourage innovation (Smith, 2000). Formalization refers to the degree to which an organization emphasizes adherence to formal rules and procedures in the role performance of its members (Rogers, 1995). The dominant perspective is that formalization hinders idea generation due to the inflexibility that constrains creativity as group members facing stricter rules and procedures who are likely to respond to problems with routine solutions rather than new ideas (Troy et al., 2001).

Complexity refers to the degree to which an organization's members possess a relatively high level of knowledge and expertise, usually measured by the members' range of occupational specialties and their degree of professionalism expressed by formal training (Rogers, 1995). Complexity encourages the organization's members to envision and propose innovations (Woodman, 1993), knowledge intensive organizations also tend to be more innovative (Freel, 2000).

Interconnectedness is the degree to which the units in a social system are linked by interpersonal networks (Rogers, 1995). New ideas can flow more easily among an organization's members if the

organization has higher network interconnectedness, leading to greater information sharing and openness (Troy et al., 2001). Interconnectedness could be measured by the degree that organization's members are able to communicate easily and freely with each other and with members of management (Ruppel and Harrington, 2000). The cumulative evidence suggests that openness of communication facilitates the creative output of the organization's members (Troy et al., 2001).

Organizational slack is defined as the degree to which uncommitted resources are available to an organization (Rogers, 1995) to adapt to internal and external pressures (Ahmed, 1998). Organizational slack has been correlated positively with innovation and can be measured by the availability of resources provided by the company. While some resources are relatively small others are large (e.g. financing major R&D projects). This might also include the availability of financial rewards and incentives to creative and innovative employees. Whether large or small, the effect of the innovation investment funds was to stimulate ideas within the organization (Light, 1998).

THE ROLE OF LEADERSHIP IN CREATING INNOVATIVE CULTURE

Leadership has been identified as one of the most important variables in enhancing innovation within organizations (Kuczmarski, 1995). Leadership, particularly from the owner-manager or Chief Executive Officer (CEO), is important in encouraging innovation and supplying the management and resources to make it happen (Brunner, 2001). Scott and Bruce (1994) have suggested that leadership affects individual innovative behaviour directly and indirectly through perceptions of a 'climate' – sub-unit of culture – for innovation. The leaders of innovative organizations made their greatest contributions for other members to succeed, by caring most about the soil in which innovation and ordinary good practice grow (Light, 1998). Although there is a lack of a common classification system for leadership theory (Reser and Sarros, 2000), the two main leadership styles considered most appropriate to understanding its potential impact on innovation are transformational and transactional leadership (Krishnan, 2001: Kelloway and Barling, 2000; Parry, 2000b)). According to Birnbaum (1999), there are several major differences between the two types of leadership, which are discussed in later sections. Transformational leadership emphasizes the potential power of leaders; transactional leadership notes the potential influence of followers. Transformational leadership looks for major changes of policy and direction; transactional leadership is likely to move in smaller, incremental steps. Transformational leadership captures their imagination; transactional leadership is more ordinary and less dramatic (Birnbaum, 1999).

Bass (1990) defined transformational leadership as a superior form of leadership that occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and the mission of the group and when they stir their employees to look

beyond their own self-interest for the good of the group. Transformational leadership consists of four factors – charismatic leadership or idealized influence, inspirational leadership or motivation, intellectual stimulation, and individualized consideration (Bass, 1985). By contrast transactional leadership is based on the principle of a fair social exchange in which leaders provide their followers with a sense of direction and recognize their needs and efforts. In exchange, through mutual regard and two-way influence, followers provide the leader with responsiveness to the leader's efforts (Birnbaum, 1999). In the transactional approach, leaders are seen as people who motivate and guide their followers in the direction of established goals by clarifying their role and their task (Aaltio-Marjosola and Takala, 2000). It consists of three characteristics, which include contingent reward, active and passive management-by-exception, and laissez faire management (Barling et al., 2000).

From the above review of the literature the follow research propositions can be developed:

P1: Centralization and formalisation are negatively associated with organisational innovativeness.

P2: Complexity is positively related with organisational innovativeness.

P3: Interconnectedness is positively linked with organisational innovativeness.

P4: Organizational slack is positively associated with organizational innovativeness.

P5: Transformational Leadership is positively related with organizational innovativeness.

P6: Transactional Leadership is negatively related with organizational innovativeness.

P7: Top management's attitudes toward long-term orientation, vision, and high commitment to innovation, are positively related with organizational innovativeness.

METHODOLOGY

The methodology used in this study was a survey of SME manufacturers within Indonesia followed subsequently by a series of in-depth case studies. This paper examines the survey findings only. The survey instrument used in the study comprised a series of measures of organizational innovativeness originally tested by Soutar and McNeil (1993) with Australian firms and Rogers (1995) study of innovation and organizational structure. A series of five-point rating scales were employed to measure respondent perceptions of innovation activity within the firm as well as the four key organization structure variables identified mentioned above. Leadership was examined using items designed to measure transactional or transformational types (Parry, 2000a).

The questionnaire was translated from English to *Bahasa* Indonesian and then 'back-translated' into English and compared with the original to confirm accuracy. Prior to distribution the questionnaire was pilot-tested using an expert panel comprising academics, and four selected SME owner-managers based in Jakarta. Modifications were made to the final question items following this pilot testing.

The sampling frame developed for the survey drew from a variety of small business databases held by government and non-government agencies in Indonesia. These sources were selected to enhance the reliability and, representativeness of the sample, and to ensure good response rates. The final sample included 280 mailed questionnaires with the instructions and returned envelopes with stamps, and 81 personal surveys conducted during exhibitions. All surveys were targeted at the owner-managers or CEOs of the surveyed firms. The final sample drawn for the study comprised 170 SMEs from various industries in several locations in Indonesia. This sample comprised firms from a wide range of industries with 50 percent from Jakarta and the rest from elsewhere in Java or Bali. A comparison of the final sample with official Indonesian statistics on SMEs suggests that the sample was highly representative.

DATA ANALYSIS

Data analysis comprised initial examination of the descriptive statistics followed by a principal component 'factor' analysis performed to achieve both a degree of data reduction and to examine the underlying structure of the data and ensure no problems may exist with multicollinearity. A final step involved development of a multiple regression model using a step-wise approach to test the propositions outlined for the study. The dependent variable used in this study was the same "innovation score" originally employed by Soutar and McNeil (1993). This permitted the identification of high, moderate and low innovation firms within the sample.

RESULTS

For all the variables, separate principle component factor analyses were used to reduce the data and develop and test the validity of meaningful constructs. In keeping with the principal component analysis procedure only factors with eigenvalues greater than one were selected. Measures of sampling adequacy (e.g. KMO) were used to determine the suitability of the data prior to testing. A varimax rotation was used to provide enhanced readability in the results and items with factor loadings below 0.4 were not included in the final models. Scale reliability was examined using Cronbach's alpha (Johannessen et al., 2001). Table 1 outlines the findings from the factor analysis procedures highlighting six separate factors.

Table 1: Factor Results – Innovation within the Firm

Factor Variable		
People involved in Innovation:	*Emergent Strategies*	*Formal Strategies*
Top managements are the sources of innovation	0.770	
The customer / market is the sources of ideas	0.661	
All employees generate ideas for innovation	0.603	
A creative genius in the company is the source of innovation		0.861
A special task force team is the source of innovation		0.718
(57% of variance explained in two factors)	(alpha = 0.48)	(alpha = 0.47)
The Company Structure:	*Company Policy*	*Communication & Structure*
Number of rules and procedures in the company	0.756	
Education level of the employees	0.737	
Funds allocated for innovative activities	0.685	
Decision-making in the company		0.832
Communication flow in the company		0.803
(53% of variance explained in two factors)	(alpha = 0.57)	(alpha = 0.63)
The Values the Company Holds:	*Top Mgt Supports*	*Company Supports*
Top management commitment to innovation	0.883	
Top management have good vision toward future	0.861	
Resources available for innovative activities		0.822
Rewards available for innovative employees		0.718
Employees autonomy for innovation		0.673
(60% of variance explained in two factors)	(alpha = 0.76)	(alpha = 0.69)

It can be seen from Table 1 that three separate factor analyses yielded six separate factors with eigenvalues greater than one. These were labelled according to their component variables. Although the first two had fairly low alpha scores it was considered worthwhile continuing to include them in the analysis given the exploratory nature of the study.

A further factor analysis was undertaken to examine the leadership variables. Table 2 shows these findings. This produced three factors with eigenvalues greater than one that explained 63 percent of variance. Factor 1 was called 'general transformational leadership' since it contained ten general characteristics of a transformational leader. Factor 2 was related to leaders' attitudes toward changing

environment and it was named 'acceptance for change'. The questions regarding openness of top management to their employees were fit into factor 3 that was termed 'openness for change'.

Table 2: Factor Results: Leadership Style

Variables	General Transformational	Acceptance for Change	Openness for Change
Explain vision, mission, and value effectively	0.815		
Have clear vision and goals for the future	0.793		
'Fire up' employees regularly	0.731		
Communicate effectively with staff	0.700		
Brief the team about economic condition routinely	0.691		
Give good examples in time management	0.631		
Communicate effectively with customers	0.619		
Focus on priorities and communicate them to team	0.579		
Create plan for each person in the team	0.539		
Cope well with pressure	0.486		
Follow through with good ideas for change		0.797	
Cope well in crisis situations		0.751	
Actively pursue a continuous improvement program		0.719	
Ask other for opinion on major decisions			0.875
Always listen to other people's viewpoints			0.848
(63% of variance explained in three factors)	(alpha = 0.90)	(alpha = 0.78)	(alpha = 0.79)

Innovation was measured in the study as both product and process innovations. Analysis of the items measuring these attributes found no significant differences between the two types of innovation employed by the firms participating in the study. A single innovation score was then developed from the data creating an 'Innovation score' with a range from a low of 1 to a high of 5 with low scores indicating little innovation taking place within the firm. The mean "Innovation score" across the sample firms was 3.82.

A correlation analysis was undertaken to examine the relationship between the "Innovation score" and the other variables in the survey. Table 3 shows the results of this analysis, where it can be seen that 11 variables – both firm and leadership related – were found to be significant. It seems that emergent strategy, general transformational leadership, leaders' acceptance of change, top management support of innovation, and company support for innovation may have stronger relationships with the "Innovation score", compared to other independent variables.

Table 3: List of Significant Independent Variables to 'Innovation Score'

Independent Variables	Pearson Correlation	Significance (2-tailed)
Emergent strategies	0.531	.000
General Transformational leadership	0.456	.000
Top Mgt Supports for Innovation	0.443	.000
Leaders' acceptance of change	0.435	.000
Company Supports for Innovation	0.423	.000
Company risk-taking	0.390	.000
Company focus	0.278	.000
# of Employees	0.264	.001
Amount of Annual Sales	0.263	.001
Company policies	0.258	.001
Formal strategies	0.241	.002

A stepwise linear regression analysis was then used to test the relationship between the dependent variable as measured by the "Innovation score" and the independent variables. Three assumptions were conducted for the individual variables that included normality, homoscedasticity, and linearity. Table 4 shows the results of this modelling. It can be seen that the respondent's perceptions of their firm's emergent strategies, the leader's acceptance of change, top management support for innovation, and the nature of the organization chart (e.g. whether a tall or flat structure), as well as the company focus or vision, had significant relationships with the 'Innovation Score'. The model predicted around 42 percent of variance (R-square of 0.442 and Adjusted R-square of 0.423) in the "Innovation Score" at the 0.01 levels of significance. Variables relating to company policies, communications and decision-making structures, company risk-taking, company supports for innovation, leadership styles, and government and network supports for innovation were not found to impact significantly on the 'Innovation Score'.

Table 4: Regression Results

Independent Variable	B	Beta	T Values
Emergent Strategies	0.345	0.368	5.147 *
Leaders' Acceptance of Change	0.155	0.169	2.396 **
Top Management Supports for Innovation	0.208	0.226	3.115 *
Organization Chart	0.133	0.172	2.678 *
Company Focus	7.11 E –02	0.134	2.073 **

*** significant at .005 level**
**** significant at .01 level**

DISCUSSION AND CONCLUSIONS

These findings are exploratory and should be viewed as providing a perspective into the innovativeness of small firms in a developing economy and the possible influence of leadership on this innovation. They are not meant to provide a definitive model of such behaviour. The identification of a single "Innovation

score" covering both product and process innovation supports Johannessen (2001) who argued that the type of innovation does not appear to influence the relationship between organizational determinants and innovation. His study suggests that innovation at the organisational level – whether it is a product, a service, a process, or a management innovation – could be defined and measured as a single construct, distinguished only by the degree of radicalness. The regression analysis suggests that innovation within small firms is likely to be associated with emergent strategies, the flexibility of the leadership in the face of change, the support within the top management of innovation, the relative flatness or lack of formality within the organisational structure and the vision of the firm for its future.

These findings provide support for propositions 1, 4, 5 and 7 suggesting that low centralization and formalization, high organizational slack and transformational leadership styles and top management support of innovation are likely to be as important to enhanced innovation within SMEs in emerging economies as they appear to be in developed ones. The lack of support for propositions 2 (complexity) and 3 (interconnectedness) invite further in depth study – preferably case studies – to prove that more innovative SMEs have organic subsystems which allow higher educated employees to communicate freely with the owner-manager to perform activities for innovation. The lack of support for proposition 5 (transactional leadership) may indicate that it is important for an owner-manager of an SME to have a base of transactional leadership style to counter the low-level of employees' education and to combine it with transformational qualities to better motivate the employees and enhance their loyalties. As suggested by Parry (2000b) who argued that successful cultures need a base of transactional elements upon which the transformational qualities are built, this could also be true for Indonesian manufacturing SMEs, which characterized by low education level of employees and family-like working culture.

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