Corporate Entrepreneurship: 
Application of Moderator Method

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Abstract
Corporate entrepreneurship is becoming increasingly important for the competitiveness of organisations as they face dynamic competition unleashed by globalisation. Internal environmental factors play a crucial role in translating entrepreneurship into performance. There is a need to understand the factors and their dynamics for stimulating corporate entrepreneurship. The key findings of an empirical research are based on data collected from 181 senior managers. Systematic methodology, including design and validation of questionnaire, factor analysis was utilised to enhance reliability of the findings. Moderator method has been used and the findings have been presented which is of more value for practical application.

Key words: Corporate Entrepreneurship, Internal environment, Moderator Method

Introduction
The Indian economy is having 17.9 per cent rate of entrepreneurial activity (Manimala et al, 2002). According to the Federation of Indian Chamber of Commerce and Industry report on the Indian manufacturing sector, to achieve an overall growth of 8 per cent per annum, it is essential that the manufacturing sector grew at more than 11 per cent. The share of the manufacturing sector in India’s GDP is around 17 per cent. Corporate entrepreneurship has been emphasised as a growth strategy and an effective means for achieving competitive advantage. To continue with the high rate of growth, this sector needs to be competitive. Thus, it is important that we understand the drivers of corporate entrepreneurial activities for developing countries.

Corporate entrepreneurship (CE) has been defined as entrepreneurial activities in the form of product, process, and organisational innovations (Zahra and Covin, 1995). CE processes refer to creation of new business ventures, and other innovative activities such as development of new prod-
ucts, services, technologies, administrative techniques, strategies, and competitive postures (Antonic and Hisrich, 2000).

This study seeks to understand the internal drivers of corporate entrepreneurship. The analysis has been done on the basis of the moderator method. The literature survey reveals that various parameters such as rewards and reinforcements, organisational flexible boundaries, intelligence generation and dissemination determine the degree of CE success. The study aims to explore using these determinants of corporate entrepreneurship for strategy formulation and implementation. It aims to answer the following questions:

- How is the interaction of management support and risk-taking affect CE?
- How is the interaction of management support and rewards affect CE?
- How is the interaction of management support and intelligence generation affect CE?

Empirical studies conducted by many researchers suggest that internal organisational factors play a major role in encouraging corporate entrepreneurship (Zahra and Covin, 1995). Entrepreneurial actions are the conduit through which CE is practised in established organisations (Hitt, Ireland, Camp, and Sexton, 2001). In its broadest conception, entrepreneurial behaviour is a comprehensive term that captures all actions related to the discovery, evaluation, and exploitation of entrepreneurial opportunities (Shane and Venkataraman, 2000). Entrepreneurial actions involve use of new resources, interactions with new customers, involvements with new markets and/or with new combinations of its existing resource portfolio, customer base, and served markets. Entrepreneurial behaviour has been emphasised as an important path to competitive advantage and improved performance in firms of all types and sizes (Covin et al, 2000). Some authors believe that firms failing to effectively use entrepreneurial actions in a fast-paced and complex global economy reduce the probability of successful competition in their chosen markets.

The literature survey reveals that various methodologies have been used to understand the determinants of entrepreneurial actions. Some of these methods have been applied in practice. Most of these methods are applications of linear programming, mixed integer programming, and other quantitative approaches. Using the moderator method, it strives to understand how the determinants of CE success interact with each other to moderate the out-
come of CE practice.

Hornsby et al, (2002) has identified five important organisational factors of CE process. Some of these criteria are qualitative, for example, organisational flexible boundaries. However, there are other quantitative factors. So far, few attempts have been made to understand the interaction of these antecedents of CE. For developing such strategic framework, moderator tool has been used to understand the significance of each determinants and their influence on the CE process.

The following section focuses on the literature review of corporate entrepreneurship and the internal organisational factors for stimulating corporate entrepreneurship. This discussion is followed by an empirical study conducted to measure the influence of these key internal organisational factors on CE success using moderator analysis. The results of the study and their implications for research and managerial practice are discussed in the final section.

**Literature Review**

CE involves the pursuit of creative or new solutions to challenges confronting the firm, including the development or enhancement of old and new products and services, markets, and administrative techniques and technologies for performing organisational functions (Antoncic and Hisrich, 2000). In this context, changes in strategy, organisational structures and systems, and methods of dealing with competitors may all be seen as innovations in the broadest sense of the term. It is also defined as a process by which individuals inside organisations pursue opportunities without regard to the resources they currently control (Stevenson and Jarillo, 1990).

Previous views of corporate entrepreneurship can be classified on four dimensions: (a) new business venturing, (b) innovativeness, (c) self-renewal, and (d) proactiveness. New business venturing is the most salient characteristic of corporate entrepreneurship since it can result in new business creation within an existing organisation (Stopford and Baden-Fuller, 1994) by redefining the company’s products or services and/or by developing new markets (Zahra, 1991).

In large corporations, it could also include formation of more formally autonomous or semi-autonomous units or firms (Hisrich and Peters, 1984). For all organisations regardless of size, the new business venturing dimension refers to the creation of new businesses that are related to existing products or markets regardless of the level of autonomy. The innovativeness dimension refers to product and service innovation with emphasis on development and innovation in technology (Covin and Slevin, 1991). The self-renewal dimension
reflects the transformation of organisations through the renewal of key ideas on which they are built (Zahra, 1991). Proactiveness is related to aggressive posturing and leadership relative to competitors (Covin and Slevin 1991). Figure 1 summarises the dimensions of corporate entrepreneurship.

**Theoretical Underpinning**

Corporate entrepreneurship success is defined as the number of products, services, and markets developed (Antoncic and Hisrich, 2000; Zahra, 1991). The research diagram is given in Figure 1.

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**Figure 1: Conceptual Diagram**

<table>
<thead>
<tr>
<th>Drivers (input) of CE</th>
<th>Performance of the CE Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rewards</td>
<td>• Number of new products/</td>
</tr>
<tr>
<td>• Flexible organisational</td>
<td>service developed</td>
</tr>
<tr>
<td>boundaries</td>
<td>• Number of new markets explored</td>
</tr>
<tr>
<td>• Intelligence generation</td>
<td>• Number of new features added</td>
</tr>
<tr>
<td></td>
<td>to the existing product</td>
</tr>
<tr>
<td></td>
<td>• Number of ideas generated for</td>
</tr>
<tr>
<td></td>
<td>process improvement</td>
</tr>
</tbody>
</table>

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Rewards refer to the design of rewards based on performance, and achievements. Reward has been measured in terms of recognition, appraisal, increasing job responsibilities, and removing obstacles (Kanter, 1985). An organisational flexible boundary (OFB) is defined as existence of a supportive organisational structure providing the administrative mechanisms by which ideas are evaluated, chosen and implemented (Burgelman and Sayles, 1986). Flexible organisational boundaries have been measured by work performance (in terms of time, amount, quality, and timeliness) clarity of standards of performance, absence of standard operating procedures, written rules and procedures, and administrative processes.

Intelligence generation is defined as the ability to recognise the value of new information (intelligence management), assimilate (process and store and disseminate), and use it strategically for innovation. The firms engage in greater level of information-scanning activities (process). Intelligence generation has been measured by free flow of information, feedback (polling end users), independence (independent information generation about competitors being generated by sev-
eral departments), periodical review, evaluation (macroeconomic information), and contacts (with officials of government and regulatory bodies in order to collect and evaluate pertinent information) (Nonaka and Toyama, 2002).

Intelligence dissemination (ID) is defined as sharing of knowledge of the other person (through teams’ experiences with one another). Some authors argue that it increases the mutual predictability of team members’ actions; similarly, self-disclosure increases mutual trust, all leading to increase in expected interaction and cooperation, effective organisational interfacing, and good team spirit and communication. Intelligence dissemination has been measured by periodical circulation (of important reports, for example, customer need), cross-functional meetings, sharing information (about technology for new products development), and interdepartmental collaboration.

Management support (MS) is defined as the willingness of management to promote entrepreneurial behaviour; including the championing of innovative ideas and providing the resources people require taking entrepreneurial actions. Management support has been measured by receptivity (to employees’ ideas), promoting innovative ideas, management encouragement, financial support, awarding ideas, and unconditional support (Kuratko et al, 1993).

Intelligence generation (IG) is defined as the ability to recognise the value of new information (intelligence management), assimilate (process and store and disseminate), and use it strategically for innovation. The firms engage in greater level of information-scanning activities (process). Intelligence generation has been measured by free flow of information, feedback (polling end users), independence (independent information generation about competitors being generated by several departments), periodical review, evaluation (macroeconomic information), contacts (with officials of government and regulatory bodies in order to collect and evaluate pertinent information) (Nonaka and Toyama, 2002).

Work discretion (WD) refers to the degree of autonomy given for entrepreneurial efforts. Work discretion has been measured by autonomy in work methods, judgment, abilities and decision-making (Hornsby et al, 2002). Time availability (TA) is defined as evaluating workloads to ensure that individuals have the time needed to pursue innovations and their jobs are structured in ways that support efforts to achieve short- and long-term organisational goals. Availability of time has been measured by design of work methods, and workload (Slevin and Covin, 1997).
Methodology

In order to investigate the existence of internal organisational factors that encourage corporate entrepreneurship within manufacturing organisations, an empirical study was conducted. This study measured the various parameters of CE including reward and reinforcements; organisational flexible boundaries, intelligence generation and dissemination. These eight areas, therefore, constitute the theoretical basis for the 60 items generated for the questionnaire. The questionnaire used Likert-type scales with 1 representing strongly disagree to 6 representing strongly agree.

The participants were recruited from service and manufacturing organisations throughout India. A total of 81 firms agreed to participate. These organisations came from north, south, east, and west of India.

Analysis

Moderator analysis (Darrow et al, 1992) was used to identifying the influence of these factors on CE success. The data were examined to understand how these determinants of influence each other for CE outcomes. To analyse the same, hierarchical regression has been performed on three terms: (a) Z-score of the dependent variable (Z-score of the determinant of CE success), (b) Z-score of the moderating variable, and (c) Z-score of the Interaction term, that is, product of the Z-score of independent variable and Z-score of the moderating variable. While performing the hierarchical regression analysis, the sequence of adding the terms is very important. First, the Z-score of the Independent variable is added, then the Z-score of the moderating variable is added, and lastly, the Z-score of the interaction term is added.

For this, hierarchical regression analysis has been performed treating each dimension of internal environment for CE success as an independent variable. The significant results are in Table 1.

To determine the direction of relationship (Choudhary, 2005), the median of the interaction variables was calculated and the mean scores for the dependent variable was found out in four possible cases. The scores below the median value (or equal to the median value) were treated as low, whereas the scores above the median value were treated as high. The four cases were (1) Independent scores above the median value were treated as high. The four cases were (2) Independent variable low and moderating variable low (selected all the cases having value high (selected all cases having value greater than the median for the moderating variable) and Moderating variable low, (3) Independent variable low and Moderating variable high, and
(4) Independent variable high and moderating variable high. The graphs are plotted for the mean values of the dependent variable (Figure 2).

Table 1: Results of Hierarchical Regression

<table>
<thead>
<tr>
<th>Interaction Variable</th>
<th>Dependent Variable</th>
<th>Beta Values (Significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Support x Risk Taking</td>
<td>Corporate Entrepreneurship</td>
<td>0.595 (0.000)</td>
</tr>
<tr>
<td>Management Support x Reward</td>
<td>Corporate Entrepreneurship</td>
<td>0.671 (0.000)</td>
</tr>
<tr>
<td>Management Support x Work</td>
<td>Corporate Entrepreneurship</td>
<td>0.777 (0.004)</td>
</tr>
<tr>
<td>Management Support x Organisational Discretion</td>
<td>Corporate Entrepreneurship</td>
<td>0.646 (0.000)</td>
</tr>
<tr>
<td>Management Support x Time Availability</td>
<td>Corporate Entrepreneurship</td>
<td>0.653 (0.000)</td>
</tr>
<tr>
<td>Management Support x Intelligence Generation</td>
<td>Corporate Entrepreneurship</td>
<td>0.633 (0.026)</td>
</tr>
<tr>
<td>Management Support x Intelligence Dissemination</td>
<td>Corporate Entrepreneurship</td>
<td>0.812 (0.000)</td>
</tr>
<tr>
<td>Intelligence Generation x Intelligence Dissemination</td>
<td>Corporate Entrepreneurship</td>
<td>0.789 (0.000)</td>
</tr>
</tbody>
</table>

Figure 2a: Corporate Entrepreneurship as Function of Interaction between Management Support and Risk-taking
**Figure 2b:** Corporate Entrepreneurship as a Function of Interaction between Management Support and Reward

**Figure 2c:** Corporate Entrepreneurship as a Function of Interaction between Management Support and Organisational Flexible Boundaries
**Figure 2d:** Corporate Entrepreneurship as a Function of Interaction between Work Discretion and Organisational Flexible Boundaries

![Graph showing the relationship between CE and Organisational Flexible Boundaries with data points for different Management Support and Risk-taking levels.]

**Table 2a:** Mean Scores: CE as a Function of Interaction between Management Support and Risk-taking

<table>
<thead>
<tr>
<th>Management Support</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-Taking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.17</td>
<td>1.67</td>
</tr>
<tr>
<td>High</td>
<td>5.33</td>
<td>5.17</td>
</tr>
</tbody>
</table>

**Table 2b:** Mean Scores: CE as a Function of Interaction between Management Support and Rewards

<table>
<thead>
<tr>
<th>Management Support</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.17</td>
<td>2</td>
</tr>
<tr>
<td>High</td>
<td>5.17</td>
<td>5.67</td>
</tr>
</tbody>
</table>
Table 2c: Mean Scores: CE as a Function of Interaction between Management Support and Organisational Flexible Boundaries

<table>
<thead>
<tr>
<th>Management Support</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation Flexible Boundaries</td>
<td>Low</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.15</td>
</tr>
</tbody>
</table>

Figure 2d: Mean Scores: CE as a Function of Interaction between Work Discretion and Organisational Flexible Boundaries

<table>
<thead>
<tr>
<th>Work Discretion</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation Flexible Boundaries</td>
<td>Low</td>
<td>1.88</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.63</td>
</tr>
</tbody>
</table>

The mean scores for CE indicate that CE is highest when management support is highest and the risk-taking is moderate. CE is lowest when management support is low and risk-taking is high. This implies that moderate risk-taking is considered best for maximum outcome of CE efforts. The mean scores for CE indicate that CE is highest when management support and reward is high and vice versa. This implies that management support is necessary for proper design of reward system to make CE successful. The mean scores for CE indicate that CE is lowest when management support is low and the organisation flexible boundary is low. CE is highest when management support and organisation flexible boundary is high. The mean scores for CE indicate that CE is lowest when an organisational flexible boundary and the work discretion are low. CE is highest when work discretion and organisation flexible boundary is high.

Conclusion
The methodology needs further empirical work to review its relationship to such measures as the number of ideas generated in an organisation; time spent on entrepreneurial ideas; and employee willingness to break
through organisational boundaries.

Secondly, while this study has initiated an important exploration, it is necessary to further support the relationship between the dimensions of corporate entrepreneurship. For example, researchers may link these seven dimensions to financial measures of organisational performance. While companies initiate corporate entrepreneurship efforts for varying reasons, ultimately, senior management expects corporate entrepreneurship efforts to improve the company’s financial position. Consequently, future researchers should study the relationship between corporate entrepreneurship dimensions and financial performance measures. One possible methodology is to compare and contrast firms who score high and low on the seven factors of the framework.

Finally, additional research into whether or not such variables as industry type and culture play a role in the corporate entrepreneurial environment is necessary. In summary, this study provides empirical evidence regarding the existence of organisational factors believed to enhance corporate entrepreneurship. The study’s results and proposed interaction offer a foundation for developing a reliable and valid measure of the firm’s internal factors for corporate entrepreneurship.

References


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