Towards Innovative SMEs: An Empirical Study of Regional Small and Medium Enterprises in Thailand

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Abstract

This paper presents an empirical study of a Thai public university delivering its academic services to help regional SMEs in Thailand to move towards innovative entrepreneurship. This challenge of Thai SMEs is concerned with the current national development model known as Thailand 4.0. This development model is constructed following the industry 4.0 concept. The model has increased concerns among small firms required to enhance their creativity and innovation to create value-added businesses. This paper looks into the influence of the Thailand 4.0 concept on the development of regional small and medium enterprises (SMEs). It presents an empirical study of regional SMEs in the North-east region of Thailand trying to move towards innovative SME. The study employed mixed research methods. First, it employed strategic entrepreneurship concept to form a theoretical framework and research hypotheses. At this step, there was theoretical testing involving firm competitiveness, superior organizational innovation, and outstanding business creativity and their relationship with business performance. The researchers analyzed the quantitative data using statistic techniques, including VIFs, correlation analysis, and OLS regression analysis. At this step, the study was able to identify two essential components for SMEs performance and innovation, namely integrative new idea generation and market-leadership orientation. Given the initial results, the study then investigated the roles of universities in the promotion of regional SMEs performance and innovation. It focused on their contributions to integrative new idea generation and market-leadership orientation in the regional SMEs in particular. At this step, the research employed a qualitative case study using in-depth interviews for the data collection. As a result, this paper delivers study results on how a university provides academic services that help to enhance the integrative new idea generation and market-leadership orientation of regional SMEs.

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1. Introduction and the research problem

Thailand has introduced Thailand 4.0 as its recent economic development concept. The concept is rooted from industry 4.0 model, which aims at adding the value to the economy with creativity and innovation. Given the policy,
Thai SMEs are required to enhance their business performance with superior strategic entrepreneurship with improved innovation.

With the needs for new knowledge, there are also increasing expectations on the academic service performance of the university in accord with increased expectations of university roles in promoting economic development. By considering these expectations, this paper focuses on the role of university engagement in promoting the sustainable development of the regional economy. Collaboration made to foster knowledge exchange between academic and industrial sector is in the central focus of this study.

The paper presents an empirical case study of a public university playing its role in promoting entrepreneurship development in regional SMEs in Thailand. Concerning that entrepreneurial firms are more proactively and more aggressively when pitching new innovation, this study is interested in how the studied university is engaged in the strategic entrepreneurial awareness of regional SMEs seeking to enhance their business performance.

By considering the university as the knowledge source for regional firms, this study addresses its research question as “how does university engagement promote the business performance of regional SMEs with strategic entrepreneurial awareness?”

2. Research methods

2.1. Employment of mixed methods research

The is an empirical case study using mixed research methods. It employs a sequential mixed methods strategy (Creswell and Clark, 2017). Both quantitative and qualitative tools are equally important to the interpretation of the research results. It started with a quantitative method using questionnaire survey. It employed strategic entrepreneurship awareness concept to form a theoretical framework and research hypotheses. Results from this step are relationships between components of strategic entrepreneurship awareness and business performance of SMEs in the Thailand context. Then, the researchers employed a qualitative method using semi-structured interviews as the data collection tool. The key components of strategic entrepreneurship awareness identified from the questionnaire survey provided a foundation for qualitative inquiry made into the role of a selected public university in promoting the business performance of SMEs in the Northeast region of Thailand.

2.2. Questionnaire survey and the theoretical testing

Figure 1 shows the theoretical framework of this research. The figure outlines the relationship between strategic entrepreneurship awareness and business performance.

![Fig. 1. The conceptual framework (developed by the authors).](image-url)
The above framework identifies 12 hypotheses as followed:

- **H1**: Proactive risk-taking attitude is positively related to (a) superior organizational innovation, (b) outstanding business creativity, and (c) business performance.
- **H2**: Integrative new idea generation is positively related to (a) superior organizational innovation, (b) outstanding business creativity, and (c) business performance.
- **H3**: Market-leadership orientation is positively related to (a) superior organizational innovation, (b) outstanding business creativity, and (c) business performance.
- **H4**: Modern technology utilization is positively related to (a) superior organizational innovation, (b) outstanding business creativity, and (c) business performance.
- **H5**: Superior organizational innovation is positively related to business performance.
- **H6**: Outstanding business creativity is positively related to business performance.
- **H7**: Competitive intensity positively moderates the relationship between proactive risk-taking attitude and superior organization innovation. (b) outstanding business creativity. (c) business performance.
- **H8**: Competitive intensity positively moderates the relationship between proactive risk-taking attitude and superior organization innovation. (b) outstanding business creativity. (c) business performance.
- **H9**: Competitive intensity positively moderates the relationship between proactive risk-taking attitude and superior organization innovation. (b) outstanding business creativity. (c) business performance.
- **H10**: Competitive intensity positively moderates the relationship between proactive risk-taking attitude and superior organization innovation. (b) outstanding business creativity. (c) business performance.
- **H11**: Competitive intensity positively moderates the relationship between superior organizational innovation and business performance.
- **H12**: Competitive intensity positively moderates the relationship between outstanding business creativity and business performance.

There are more than 2.8 million Thai SMEs in 2018 (OSMEP, 2018). The researchers distributed 1,805 mail-questionnaires to 1,805 sampled informants in order to obtain the considerate statistical reliable sampling of 384 completed questionnaires (Krejcie and Morgan, 1970). These informants are managing director or managing partner of Thai SMEs.

There were 387 completed questionnaires returned and used in the analysis. The survey response rate is 21.44% indicates a reliable analysis of the data (Aaker, Kuma, and Day, 2001). Statistical techniques used for the analysis were VIFs, correlation analysis, and OLS regression.

### 2.3 Qualitative case study

After the questionnaire survey was done, the study obtained the results of relationships between elements of strategic entrepreneurial awareness and business performance of SMEs in the Thailand context. Given the results, two key elements found to be essential as having significant positive relationships with the business performance of Thai SMEs are Integrative new idea generation and market leadership orientation.

Bearing in mind the two essential elements identified above, the paper follows experiences of five interview participants, including a senior university manager, a university engagement staff, a senior academic, a mid-career academic and two managers of local SMEs. One of the selected SME is from an agricultural business, and another one is from beverage manufacturing. Interview inquiries are made into their individual experiences with the university engagement with regional SMEs. Questions were asked concerning engagement activities and knowledge exchange networking. The questions asked were relevance to strategic entrepreneurship awareness and business performance of the studied SMEs.

The data analysis strategy employed was grounded theory concerning that this approach is rigorous and suitable for the investigation of the detailed and complex facets of social inquiries (Goulding, 2002). To increase the theoretical sensitivity during the data analysis process, the researchers also made use of the clearly defined investigation boundary of the case study in parallel with the review of literature in parallel until obtained its theoretical saturation (Glaser,
2004). As a result, the research out has been provided in the form of theoretical explanation for the empirical experience of the case university engaging with the region to help regional SMEs develop towards innovative firms.

3. Research findings

3.1. The influence of strategic entrepreneurial awareness

Table 1 below shows the influence of strategic entrepreneurial awareness on its hypothesized consequences proposed as Hypotheses 1, 2, 3 and 4 along with the moderating effects of competitive intensity on the relationships identified for the testing of positive effects. As also shown the table, the moderating role of competitive intensity is proposed to positively influence the relationship among each of the four components of strategic entrepreneurial awareness, presented in hypotheses 7, 8, 9 and 10.

Table 1. Results of OLS regression analysis of the relationships among strategic entrepreneurial awareness, its consequences, and the role of competitive intensity.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>SOI</th>
<th>OBC</th>
<th>BPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H1-4a</td>
<td>H7-10</td>
<td>H1-4b</td>
</tr>
<tr>
<td>Proactive Risk-taking Attitude</td>
<td>.221 (.152)</td>
<td>.266 (.178)</td>
<td>.219 (.146)</td>
</tr>
<tr>
<td>Integrative New Idea Generation</td>
<td>.241*** (.092)</td>
<td>.262*** (.101)</td>
<td>.236*** (.084)</td>
</tr>
<tr>
<td>Market-leadership Orientation</td>
<td>.237** (.116)</td>
<td>.245** (.120)</td>
<td>.231** (.113)</td>
</tr>
<tr>
<td>Modern Technology Utilization</td>
<td>.199* (.111)</td>
<td>.228* (.138)</td>
<td>.229 (.168)</td>
</tr>
<tr>
<td>Competitive Intensity</td>
<td>.194 (.144)</td>
<td>.252 (.171)</td>
<td>.301* (.182)</td>
</tr>
<tr>
<td>Proactive Risk-taking Attitude * Competitive Intensity</td>
<td>.233 (.148)</td>
<td>.169 (.105)</td>
<td>.274*** (.101)</td>
</tr>
<tr>
<td>Integrative New Idea Generation * Competitive Intensity</td>
<td>.284*** (.108)</td>
<td>.358*** (.130)</td>
<td>.295*** (.107)</td>
</tr>
<tr>
<td>Market-leadership Orientation * Competitive Intensity</td>
<td>.327*** (.127)</td>
<td>.339*** (.129)</td>
<td>.289*** (.111)</td>
</tr>
<tr>
<td>Modern Technology Utilization * Competitive Intensity</td>
<td>.277*** (.141)</td>
<td>.254 (.210)</td>
<td>.328* (.199)</td>
</tr>
<tr>
<td>Firm Size</td>
<td>.255** (.128)</td>
<td>.294** (.145)</td>
<td>.217 (.169)</td>
</tr>
<tr>
<td>Firm Capital</td>
<td>.249** (.126)</td>
<td>.308** (.157)</td>
<td>.278 (.185)</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.453</td>
<td>.599</td>
<td>.470</td>
</tr>
<tr>
<td>Maximum VIF</td>
<td>1.908</td>
<td>4.469</td>
<td>1.908</td>
</tr>
</tbody>
</table>

Beta coefficients with standard errors in parenthesis, *** p < 0.01, ** p < 0.05, * p < 0.10

Given Table 1 above, for control variables, the statistical testing shows that both firm size and capital have positive significant relationship on superior organization innovation ($β_3 = 0.255, p < 0.05$; $β_6 = 0.249, p < 0.01$) and business performance ($β_{39} = 0.251, p < 0.05$; $β_{40} = 0.231, p < 0.05$). As the numbers show, the relationships among the four components of strategic entrepreneurial awareness, superior organization innovation and business performance can all be influenced by both the firm size and its capital.
3.2. Integrative new idea generation and market leadership orientation

Table 2 below shows the relationships among superior organizational innovation, outstanding business creativity and business performance, referring to the testing of the hypotheses 5, 6, 11 and 12. As seen in the Table, superior organizational innovation ($\beta_{52} = 0.257, p < 0.01; \beta_{56} = 0.259, p < 0.01$) and outstanding business creativity ($\beta_{53} = 0.271, p < 0.01; \beta_{57} = 0.298, p < 0.01$) are significantly affect business performance.

Table 2 below shows the relationships among superior organizational innovation, outstanding business creativity and business performance, referring to the testing of the hypotheses 5, 6, 11 and 12. As seen in the Table, superior organizational innovation ($\beta_{52} = 0.257, p < 0.01; \beta_{56} = 0.259, p < 0.01$) and outstanding business creativity ($\beta_{53} = 0.271, p < 0.01; \beta_{57} = 0.298, p < 0.01$) are significantly affect business performance.

Table 2 also shows regression analysis of the relationship of the moderating effect of competitive intensity and its relationships with all of the three consequences of strategic entrepreneurial awareness namely superior organizational innovation, outstanding business creativity, and business performance. As seen in the table, competitive intensity has positive influencing moderating effect on those consequences: superior organizational innovation ($\beta_{59} = 0.247, p < 0.10$), outstanding business creativity ($\beta_{60} = 0.341, p < 0.10$).

Concerning the quantitative results from the questionnaire survey, it can conclude that strategic entrepreneurial awareness is essential for business performance. To be specific, two out of four identified components of strategic entrepreneurial awareness, namely integrative new idea generation and market-leadership orientation, were hypotheses tested to have a significant influence on the exaltation of superior organizational innovation, outstanding business creativity and hence business performance.

Table 2. The relationships among superior organizational innovation, outstanding business creativity, and business performance.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>H5-6</th>
<th>H11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior Organizational Innovation</td>
<td>.257*** (.094)</td>
<td>.259*** (.087)</td>
</tr>
<tr>
<td>Outstanding Business Creativity</td>
<td>.271*** (.101)</td>
<td>.298*** (.115)</td>
</tr>
<tr>
<td>Competitive Intensity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior Organizational Innovation $\times$ Competitive Intensity</td>
<td>.255*** (.097)</td>
<td></td>
</tr>
<tr>
<td>Outstanding Business Creativity $\times$ Competitive Intensity</td>
<td>.232*** (.085)</td>
<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>.222 (.148)</td>
<td>.224 (.138)</td>
</tr>
<tr>
<td>Firm Capital</td>
<td>.247* (.152)</td>
<td>.341** (.172)</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.453</td>
<td>.599</td>
</tr>
<tr>
<td>Maximum VIF</td>
<td>1.908</td>
<td>4.469</td>
</tr>
</tbody>
</table>

*Beta coefficients with standard errors in parenthesis, *** p < 0.01, ** p <0.05, * p < 0.10

3.3. Roles of the engaged university

For the studied case university, primary engagement funding is the public source. Most engagement programs offered by the regional university are relevant to the purposes of the funding schemes. The primary form of support is one-way knowledge delivering from the university to the enterprise. Two-way knowledge exchange is fairly limited. Evidence showed that, from the industry point of view, knowledge exchange is more preferable as it leads to problem-based engagement.
Despite the finding, the recent tendency is moving towards the knowledge exchange where the university could propose engagement support based on the local problems, rather than a policy from the central level. For enterprises with more entrepreneurial skills, private sources of financial support are also the option where well-developed business planning is part of the engagement.

Funding management at the institutional level is another supporting factor for effective university engagement (Amey, 2002). The studied university has standardized management of engagement funding at the institutional level. However, by receiving public funding sources, engagement activities are often framed by external funding schemes. The schemes are sometimes assigned from the national level. Hence, the engagement in practice requires entrepreneurial skills of individual participating staff to perform knowledge service delivery that matches the needs of SMEs in the region.

3.4. Roles of the engaged academics and university staff

Integrative new idea generation in regional SMEs requires knowledge networks building. Academic service programs offered by the engaged university is evidently found to promote the idea generation. The network building requires not only academic expertise of the participating academics but also their good interpersonal skills. Such skills promote the communication between the academics and the business entities; academic concepts in theory and business ideas in practice are linked through the networking process.

The empirical evidence also showed that, in order for university engagement to promote the market leadership orientation of regional SMEs, the entrepreneurial skills were identified as a compulsory qualification of the participating academics. With this qualification, engaged academics are able to provide knowledge delivering programs that match with the recent market circumstance.

Similar to a suggestion provided by Mortazavi and Bahrami (2012), the key success factor of the knowledge delivering programs is that members of the university offered the knowledge in need for the local business, known as problem-based programs. The studied case university has an engagement department known as the university-industry cooperation center. In this center, there are professional staffs appointed as business liaisons, financial officers and legal consultants. These functions of the staff are the evidence for the university’s systematic management of engagement (Etzkowitz and Leydesdorff, 2000), considered as essential supportive factors for the new idea generation of the engaged SMEs through the university’s knowledge service delivery.

3.5. Roles of the engaged business leaders

The increase in the productivity of engaged SMEs also significantly relates to the entrepreneurial skills of the engaged participants, both the university and the enterprises. Entrepreneurial skills are compulsory for participating universities to facilitate the promotion of knowledge-based entrepreneurs (Kanellos, 2011). The benefit participating business gain from the promotional scheme would rather depend on the entrepreneurial skills of each individual. The skills consist of five elements. First, professional skills including the ability and experience in doing the business. Second, management skills which include the ability to understand aspects of business management, rather than relying on own existing traditional knowledge. Third, opportunity skills which include the ability to recognize and handle changes in the business circumstance at both micro and macro level. Forth, strategic skills meaning the ability to review, reflect and revise business planning and making decisions. Finally, co-operation and networking skills including the ability to work with the others, internally and externally.

Existing entrepreneurial skills are not the preliminary requirement as they engage with the university engagement. The primary networking is personal connections. Personal references are very important to get them involved with the engagement. Despite no preliminary entrepreneurial skills present from the beginning of their engagement, such skills would eventually be developed through peers’ observation. By so doing, the new knowledge, creativity or any innovation perception would be exchanged better via personal connections. Engagement programs were perceived as the networking tool whiles personal connections and peer observation is rather perceived as the effective approach to the knowledge-based entrepreneurship in these enterprises.
4. Conclusion

This paper presents an empirical study looking into roles of university engagement in promoting strategic entrepreneurial awareness to help regional SMEs promote their business performance with innovation. By using a questionnaire survey, two key elements identified as significant to strategic entrepreneurial awareness in Thai SMEs are integrative new idea generation and market-leadership orientation. With these elements required in mind, the researchers conducted a qualitative investigation making the inquiry into engagement experience of a selected case university located in the Northeast region of Thailand.

The results indicate significant supportive factors for the university engaging with regional SMEs to promote their business performance with strategic entrepreneurial awareness. At the institutional levels, the supportive factors are public sources of engagement funding and supportive engagement institutional structure and. At the individual level, the supportive factors are entrepreneurial skills of participating academics and business entities and the interpersonal skills for knowledge network building.

By providing the empirical evidence, this paper also discusses how university engagement can contribute to the business performance of regional SMEs, by focusing on the promotion of integrative new idea generation and market leadership orientation. The paper recommends that university leaders should design effective place-based innovation policies that relate to public funding schemes for university service function. The paper also provides robust empirical evidence on the roles and expectations of participants in the knowledge exchange networks. Implications of the findings will help academics and researchers perform their knowledge services more practically.

5. Limitations and recommendation for future research

Concerning that this is a case study research, the implication of findings needs to consider the regional and institutional profiling of the studied university. Nonetheless, this paper discusses supporting factors for university engagement with the regional development at both institutional and individual levels. These findings may be useful for the building of a theoretical framework for further study on university engagement and place-based innovation development for SMEs conducted in other universities in a broader range of regional, national and institutional profiles.

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References