

Topic and Research Question

Entrepreneurial firms are one of the most important forces in shaping changes in a country's economic landscape. Individuals create new businesses and new businesses in turn create jobs, promote competition, increase national productivity and can even advance technological change. The latter is especially the case for technology based start-ups. Technology based start-ups promote technological innovation which is a central driver of economic growth. However, the extraordinary international success of a small number of technology based start-ups distracts from the fact that failure is very common in the technology industry. The success or failure of entrepreneurial firms is influenced by the environment they are embedded in. This environment is determined by political, economic and social institutions. The influence of institutional factors on the performance of start-ups is even more important in emerging and developing economies as they tend to have less developed markets and institutional infrastructure. Underdeveloped and unstable institutions can cause misallocation of resources and market distortions that can eventually lead to substantial productivity losses in the entire economy. Understanding the institutional constraints that firms and in particular technology based start-ups are facing in these economies can create awareness among policy makers and help create a more favourable environment in which technology based start-ups are more likely to succeed. The research questions thus are: Given the same business model, is a start-up more likely to succeed in China or Indonesia? Which are the most critical institutional factors influencing the performance of a technology based start-up in China and Indonesia?

State of the Art

Research on technology based start-ups has focused almost exclusively on the entrepreneurial characteristics and abilities of start-up founders as keys to explaining venture success and failure. There is little research on technology based start-ups and the influence of institutions on start-up performance. In addition, most published research on technology entrepreneurship has focused on developed countries. The literature used to build a research framework for this thesis has been selected from works of different research fields such as strategic management (Peng et al 2008, 2009), institutional theory (North 1990) and system theory (Sterman 2001; Beer 1967, 1984).

Methodology and Approach

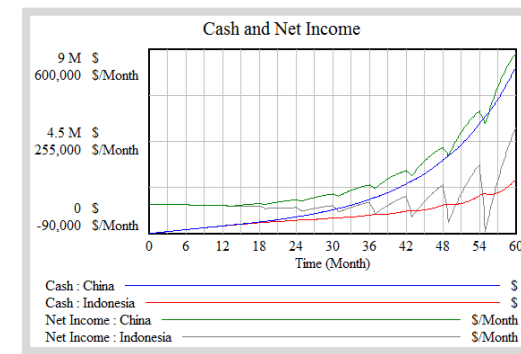
The strategy tripod (Peng et al. 2008, 2009), institutional theory (North 1990) and system theory (Sterman 2001; Beer 1967, 1984) form the analytical framework used for modelling a generic technology based start-up with system dynamics. Institutional factors are included in the model to simulate the start-up's institutional environment. The start-up model is then applied to the Chinese and Indonesian institutional context to examine the effect of institutional factors on the performance of technology based start-ups in these two countries over the course of five years. Comparative analysis and sensitivity analysis are used to discuss the results of the simulation.

Main Facts

The Performance of Technology Based Start-Ups in China and Indonesia

The country-specific results and comparative analysis showed that both start-ups survive the first five years of being in business and are profitable throughout the simulation period. In financial terms, the start-up in the Chinese institutional environment performs better than the start-up in the Indonesian context. It achieves a higher net income and accumulates more cash over the simulation period. According to non-financial performance indicators, the Indonesian start-up performs better than the Chinese start-up. Its product is more sophisticated and it has more customers and employees than the Chinese start-up. Furthermore, its value proposition is better than the competition's value proposition. This is mainly due to the fact that the Indonesian start-up employs more staff than the Chinese start-up. A closer look on the reasons for the superior performance of the Indonesian start-up in terms of non-financial indicators reveals that the Indonesian start-up only has a more sophisticated product and more customers because its number of employees is higher than the one of the Chinese start-up. Its productivity level which also affects product sophistication is not higher than the Chinese start-up's productivity level. Similarly, its larger customer base is only a result of an increased sales effort due to a higher number of sales employees. Consequently, the Indonesian start-up incurs higher costs than the Chinese start-up due to its high number of employees. The additional revenues it generates from selling to more customers than the Chinese start-up are significantly reduced by its salary expenses. As a result, its financial performance is inferior to the financial performance of the Chinese start-up.

Institutional Factors Affecting Start-Up Performance in China and Indonesia



The institutional factor which has the most significant impact on the performance of technology based start-ups in China and Indonesia is technology adoption. In the system dynamics model, technology adoption is represented by the percentage of the population who have internet access and affects the effective market size of the start-up. After technology adoption, the Chinese start-up is most sensitive to changes in unemployment rate and labour market regulations while the Indonesian start-up is most sensitive to changes in higher education and performance orientation.

Results

The analyses of the start-up simulation provide the basis for answering the first research question as follows: Given the same business model, a technology based start-up is likely to succeed in both China and Indonesia. At the same time, it is likely to be more financially successful in China than in Indonesia. The discussion of the country-specific results and the comparative analyses show that the start-up in the Indonesian institutional environment performs better than the start-up in the Chinese institutional environment in regard to non-financial indicators. The Indonesian start-up has a more sophisticated product and a larger customer base but due to its excessive number of staff, it incurs high costs which dampen its financial performance. The Chinese start-up resembles a "lean start-up" as it has fewer employees than the Indonesian start-up but at the same time a slightly higher level of productivity. This results in superior financial performance despite its lower number of customers and product features.

Sensitivity analysis of the start-ups' institutional environment identifies the most critical institutional factors influencing start-up performance. Its findings

provide an answer to the second research question: The performance of technology based start-ups in China is most affected by the institutional factors technology adoption, unemployment rate and labour market regulations. In Indonesia, the institutional factors which have the most significant impact on the performance of technology based start-ups are technology adoption, higher education and performance orientation.

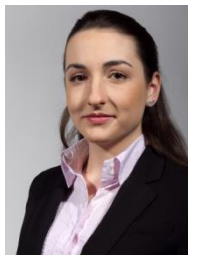
This thesis has some implications for linking institutional theory with the analysis of technology based start-ups in future research. Its approach to analyse technology based start-ups in the institutional environment of two emerging economies by building a model in system dynamics is the first of its kind. While the institutional environment in developed economies is generally supportive of technology based start-ups, technology based start-ups in emerging and developing countries tend to face a less benevolent institutional environment which can significantly affect their performance. This thesis provides valuable findings on the effect of institutional factors on the performance of technology based start-ups in the two emerging economies China and Indonesia.

References

All references can be found in the full version of the MA thesis available at <http://othes.univie.ac.at>

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Examination Date: 06 11 2015