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Business incubators: the impact of their support

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Summary

Currently, the Business Incubator (BI) is a well-known phenomenon. It is well understood as a means to support New Technology-Based Firms (NTBFs), particularly in the early stage when the NTBF is in its development phase. BIs provide supportive services to accelerate their growth. However, there is still a scarcity of investigations and reliable evidence on the effectiveness support by BIs on the performance of NTBFs (see Hackett and Dilts, 2004; Eveleens et al., 2017; van Weele et al., 2017; Lukeš et al., 2019). As a result, BIs attract a considerable amount of attention from scholars around this research gap. In addition, the role of NTBFs' capabilities in making usage of support by BIs is almost neglected. Thus, in our study, we aim to address this gap and develop a model to evaluate the impact of support by BIs on the performances of NTBFs and consider the moderating role of NTBF's capabilities.

Considering the fact that there is a paucity in previous studies on the influence of the supports by BIs on the performance of the NTBFs, we formulate following problem statement (PS) in chapter 1. *How can business incubators support their NTBFs effectively?* Guided by three research questions (RQ1 - RQ3), a seven-stage methodology is applied to find an answer to our PS. Stage 1 reviews a theoretical study and related previous investigations. Stages 2 identifies the supportive activities by university-based business incubators BIs. Stage 3 operationalizes the supportive activities construct of the BIs. Stage 4 validates the construct of the BIs. Stage 5 implements the construct of the BIs. Finally, stages 6 and 7 are part of the usual scientific procedure of analyzing the results, establishing the findings (i.e., discussion), and formulating the conclusion.

Chapter 2 reviews previous investigations and literature related to the context of incubation and NTBFs. The chapter describes four theoretical perspectives (resource-based view, social capital theory, knowledge-based view, and organizational learning theory). They are candidates for further investigations and therefore tentatively listed,

applied and tested. This chapter concluded that resource-based view is an appropriate theoretical perspective to investigate the impact of BIs on the performance of the NTBFs.

Chapter 3 addresses *RQ1: What are the main supportive activities offered by BIs that influence the performance of an NTBF?* The answer is based on an explorative study. As a first step, a systematic literature review is conducted to explore the identified supports by BIs in prior investigations. Then, a combination of observations and eleven semi-structured in-depth interviews were conducted with the founders of NTBFs in BIs to explore the supportive activities of the UBIs from the NTBFs' perspectives. The results show that the main supportive activities of BIs are classified into five groups: (1) *access to their networks*, (2) *growth control*, (3) *knowledge development and dissemination*, (4) *finance and administrative mobilization*, and (5) *creation of exposure*.

Chapter 4 provides a partial answer to *RQ2: How can the supportive activities be operationalized in a construct that enables us to measure the impact of the identified supportive activities by BIs on the performance of an NTBF?* In this chapter, we developed our theoretical model which explains the relation between the supports by BIs, the performances of the NTBFs, and their innovation strategy. Meanwhile, the moderating role of NTBFs' capabilities on the relation between the support by BIs and the performance of the NTBFs, is depicted. Subsequently the model is operationalized and the measurement scales for each variable have been addressed.

Chapter 5 presents a conclusive answer to RQ2 by statistically evaluating the validity and reliability of the dimensions of the construct. The procedure includes four-step variable reduction procedure. *First*, the correlation matrix, Kaiser-Meyer-Olkin index and Bartlett's test of Sphericity are conducted to check whether the data is appropriate for the Principal Component Analysis. *Second*, the Principal Component Analysis is performed in order to extract the components from the data. *Third*, Promax Rotation on the independent variables and the Varimax Rotation Method are performed to extract the items with an acceptable validity for further

analysis. As a result of these three levels, the validity of the constructs has been checked. *Fourth*, Cronbach's Alpha coefficients and Composite Reliability are calculated to evaluate the reliability of the component solution. The results of this four-step procedure show that innovation strategy, absorptive capacity, knowledge development and dissemination, and finance mobilization retained.

Chapter 6 gives answer to RQ3: *In what way are the identified supportive activities related to (a) the innovation strategy of the NTBFs and consequently to (b) the performance of an NTBF?* To provide an answer to this RQ, we distributed a questionnaire to the Dutch and German NTBFs. Then, through the multiple regression analysis method, we analyze the answers of 96 (co-)founders. The results demonstrate that knowledge development and dissemination have a positive impact on the performance of the NTBFs. However, our data could not support that finance mobilization has impact on the performance of the NTBFs. The findings also show that absorptive capacity can amplify the relation between support by BIs and the performance of the NTBFs.

Chapter 7 provides answers to the three research questions (RQs) and to the problem statement (PS). The answers are based on the results of regression analysis conducted in Chapter 6. From the answers to the RQs, we may conclude that the empirical model provides a clear evidence that knowledge development and dissemination are positively associated with the performances of NTBFs. In addition, the model shows that knowledge development and dissemination are amplified with the effect of absorptive capacity. The obtained results suggest that BIs can provide their supports more effectively via: (1) providing more tailored and customized services on training, coaching, and mentoring; (2) intervening more strongly through the growth process of their NTBFs and help the NTBFs develop their absorptive capacity to identify and utilize knowledge resources; (3) train their NTBFs to enrich their absorptive capacity to be more independent from incubators and have stronger ability to utilize external knowledge resources both during their incubation process and post-incubation. In the end, this chapter gives (a) the implications for researchers

and practitioners, (b) explains the limitations of the research, and (c) provides recommendations for future research.