TECHNOLOGICAL ATTRIBUTES AND THE PERFORMANCE OF YOUNG, TECHNOLOGY-BASED FIRMS (INTERACTIVE PAPER)

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Principal Topic

In technology intensive industries, previous research has shown that technological resources play a key role in the success of firms (e.g. Zahra, 1996). Technological resources differ in degree of ‘tacitness’ (Saviotti, 1998) and degree of ‘complexity’ (Marsili, 2002). We extend previous research by arguing that the influence of tacitness and complexity on firm performance is dependent on 1) the market readiness of the technology at founding and 2) firm age. Market readiness represents the extent to which the technology is developed into a marketable entity (Knockaert et al, 2010) while organizational age represents the stock of capabilities and knowledge accumulated over time (Huber, 1991). We propose that market readiness and organizational age will dampen the negative influence of tacitness and complexity on firm performance.

Method

We test our hypotheses using panel data of 125 young, technology-based firms in Flanders, Belgium. The first wave of data collection was conducted in 2002-2003 through face-to-face interviews with a member of the founding team or top management team of the firm using a standardized questionnaire. A follow-up round of data collection was conducted in 2005 using the same approach. In addition to the primary data, we consulted financial databases, which are publicly available through Bureau van Dijk, and the annual reports of the EVCA. We used random effects, general-least squared regression to examine the hypotheses.

Results and Implications

The results show that tacitness is negatively associated with revenue growth providing support for Hypothesis 1. Complexity is negatively associated with revenue growth but not significant so we do not find support for Hypothesis 2. Further, the results show that interactions between tacitness and complexity with market readiness are negative and significant providing support for Hypothesis 3a and 3b. We found that the interaction between tacitness and firm age is positive and significant while the interaction between complexity is positive and moderately significant. These results provide support for Hypothesis 4a and moderate support for Hypothesis 4b. Our findings have important practical implications for founders and managers of young, technology-based firms. In particular, they need to be aware of the impact of technology attributes on growth in revenue and employment.

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