

Drivers of innovation in start-ups: an investigation of the effects of upper and lower echelon human capital and HR practices on innovative output in start-ups

S. De Winne^a and L. Sels^b

^aLessius Hogeschool Antwerpen, Faculty of Economics and Applied Economics, Korte Nieuwstraat 33, 2000 Antwerpen, Belgium

^bKatholieke Universiteit Leuven, Faculty of Economics and Applied Economics, Research Centre for Organisation Studies, Naamsestraat 69, 3000 Leuven, Belgium
sophie.dewinne@econ.kuleuven.be

Principal Topic

Innovative start-ups have become the center of attention in government policy. They are considered to be the driving force of economic growth and international competitive advantage. Despite this growing interest, little is known about firm internal determinants of and critical success factors for innovation in newly established firms. Innovation is a function of a firm's ability to create, manage and maintain knowledge (Smith et al., 2005). Since knowledge is created by and stored within individuals, human resources as well as HR practices may play an important role as drivers of innovation in start-ups. The purpose of this study is to examine the impact of upper echelon human capital (i.e. the human capital of owners/managers and the presence of mechanisms to expand the owners/managers' knowledge base), lower echelon human capital and HR practices on innovative output in start-ups.

Methodology/Key Propositions

In line with upper echelon theory (Hambrick & Mason, 1984), innovation is often associated with the human capital of owners/managers, derived from their education and past experience. Despite evidence of this relationship in established companies (Barker III & Mueller, 2002; Hadjimanolis, 2000) and start-ups (Lynskey, 2004), we argue that other important sources of human capital are neglected. First, the human capital or knowledge base of owners/managers can be extended in a number of ways. Installing a board of directors with one or more independent board members (Zahra et al., 2000) and/or making an appeal to certified experts (Chrisman & McMullan, 2004) provide owners/managers with new knowledge. The combination of new and existing knowledge might incite a learning process, the creation of fresh insights and the discovery of new opportunities. Moreover, through contacts with independent board members or experts the social network of owners/managers expands. This may, under certain circumstances, enhance the capacity for creative action (Ruef, 2002). Second, although employees are few in numbers in start-ups, owners/managers do mention them as necessary resources (Bergmann Lichtenstein & Brush, 2001). They are carriers of tacit knowledge and carry out the productive and innovative work of the firm. In line with previous research in established firms (Subramaniam & Youndt, 2005), we assume that the success of innovation projects in start-ups depends on the human capital, i.e. the knowledge and competences, of employees. Finally, corresponding to the resource-based view, we argue that valuable employees are not sufficient to outperform competitors. They should be managed and controlled in a way that enables the firm to implement its desired strategy (Barney, 1995), in this case an innovation strategy. Therefore, we expect that the presence of HR practices focusing on (1) the deployment, development, evaluation and disposal of employees, and (2) the enhancement, support or change of organizational processes sustaining an innovation strategy, will have a positive impact on innovation as well (Shadur & Snell, 2002). Figure 1 visualizes the key propositions. Data are derived from a Belgian survey, organized by the Policy Research Center "Entrepreneurship, Enterprises and Innovation", financed by the Minister of Economic Affairs. The survey's targeted respondent was the start-up's owner/manager. The population consisted of all profit companies (1) with 1 to 49 employees, and (2) being in their second year of life in September 2003. The survey yielded data for 637 start-ups (29,4% response rate). We selected only those firms differentiating themselves from their competitors based on the uniqueness of their production

process and products. More specifically, only firms scoring more than average on the innovation strategy scale ($\alpha=0.69$) were selected. Consequently, the likelihood of innovation being an objective for the group studied ($N=294$) increases. Finally, a homogeneous sample of start-ups (in terms of age, size and strategic focus) allows minimization of extraneous variation. To test the hypotheses, we use path analysis with manifest variables (Hatcher, 1994; proc CALIS; SAS). Path analysis enables to define and test theoretically hypothesized paths or relationships between different variables. The output indicates whether the model is supported by the data as a whole and gives a significance test for the various individual paths. Next, a variable in a path model can be both dependent and independent. This allows us to take into account the possible mediating effect of employees' human capital and HR practices.

Results and Implications

Results show that unless employees' human capital is managed, it provides little benefit to start-ups in terms of innovation. Moreover, the impact of HRM intensity is higher in start-ups with high human capital as compared to newly established firms with low human capital. Next, innovation is indirectly (through the mediating effect of employees' human capital and/or HRM) and positively affected by the owners/managers' educational level and the appeal to certified experts. Industry experience, in turn, has an indirect negative impact. The number of independent board members directly and positively influences innovation. We contribute to existing research on innovation in entrepreneurship literature by proposing an integral framework including the aforementioned owners/managers' and employees' related determinants of innovation. Doing so, we increase insights in the mechanism through which characteristics of owners/managers influence innovation, the central focus in upper echelon research. Studying the relationship between (different kinds of) human capital, HR practices and innovation, we contribute to HRM-performance research traditionally concentrating on HR practices.

Contact

Sophie De Winne. Lessius Hogeschool Antwerpen, Faculty of Economics and Applied Economics, Korte Nieuwstraat 33, 2000 Antwerpen, Belgium.
(T) 32 16 32 68 94, (F) 0032-16-32.67.32, Email: Sophie.DeWinne@econ.kuleuven.be