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# Networking for the environment: The impact of environmental orientation on start-ups' networking frequency and network size

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#### ABSTRACT

Although the public debate on the environmental orientation of firms has intensified, there is a lack of understanding about the consequences of that orientation, especially in terms of its impact on firms' networking behavior. In order to fill this gap, this paper analyzes the impact of external and internal environmental orientation on start-ups' network characteristics, because networks are both vital for the success of start-ups and resource demanding. More specifically, the effects of environmental orientation on networking frequency and network size among start-ups are analyzed. Empirical data from 248 technology-based start-ups shows that those firms with a strong external environmental orientation have significantly higher networking frequencies and build larger networks. Conversely, a strong internal environmental orientation is linked to smaller networks. Thus, the results highlight the relevance of differentiating between the external and internal environmental orientation of start-ups because both concepts can have very different effects. From a practitioner perspective, the results have important implications with regard to the resources required for networking and the opportunities and barriers that tend to accompany internal and external environmental orientations.

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#### 1. Introduction

Environmentally oriented start-ups can contribute substantially to sustainable development through, for example, radical innovation or by putting pressure on large incumbent firms (Hart and Christensen, 2002; Hockerts and Wuestenhagen, 2010; Prahalad and Hart, 2002). Consequently, the environmental orientation of start-ups has received an increasing amount of attention from researchers, investors, and policy makers (Bergset and Fichter, 2015; Chan et al., 2012; Doganova and Karnøe, 2015; Schiederig et al., 2012). Drawing on earlier literature (Banerjee, 2002; Nair and Ndubisi, 2015), this paper defines environmental orientation as a firm's "responsibility toward the environment, the importance of recognizing the impact a firm has on the environment and the need to minimize such impact" (Banerjee, 2002, p. 182). Such an orientation can reduce operating costs through the more efficient use of resources (Christmann, 2000; Shrivastava, 1995), stimulate innovation (Porter and van der Linde, 1995), and attract new customers (Berry and Rondinelli, 1998). It can consequently lead to a competitive advantage (Hart, 1995; Petersen, 2006).

Like other ventures, environmentally oriented start-ups are prone to failure and, as a result, may not realize their potential environmental impact. The high failure rate can be attributed to the liabilities of newness (Stinchcombe, 1965) and smallness (Freeman et al., 1983). The liability of newness is characterized by a lack of customers, weak organizational structures, and a lack of legitimacy. The liability of smallness reflects the fact that small firms, such as start-ups, have few resources and limited negotiating power.

Collaboration with network partners can alleviate these liabilities by providing missing resources and complementary knowhow, and by enhancing the start-up's reputation and legitimacy (Gundolf et al., 2017; Hoang and Antoncic, 2003; Ravn, 2012; Stuart et al., 1999). Thus, networks are of crucial importance for entrepreneurial success (e.g., Baum et al., 2000; Hoang and Antoncic, 2003; Nijkamp, 2003; Pérez and Sánchez, 2003). Networking allows entrepreneurs to discover business opportunities, increase innovativeness, and improve learning capabilities (Turner and Pennington, 2015; Vandekerckhove and Dentchev, 2005).







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Networks also ensure entrepreneurial survival, because they help ventures remain competitive (Parida et al., 2017). Given the greater complexity and uncertainty faced by environmentally oriented firms (Hart, 1995), environmentally oriented start-ups might depend on networks to compensate for their lack of resources and know-how. Likewise, their orientation toward the environment may motivate and necessitate closer networking. However, little is known about potential differences in the networking behaviors of environmentally oriented and non-environmentally oriented start-ups.

This paper addresses this research gap by investigating the impact of environmental orientation on a start-up's networking activities. The paper contributes to the literature in several ways. First, environmental issues have primarily been investigated in the context of established firms. Although entrepreneurship researchers increasingly agree on the importance of environmentally friendly business solutions (e.g., Cohen and Winn, 2007; Meek et al., 2010), little empirical evidence exists on the effects of environmental orientation on start-ups. Moreover, this paper distinguishes between internal and external environmental orientations, as introduced by Banerjee (2002) and supported in other research (e.g., Banerjee et al., 2003; Shah, 2015). Therefore, this study adds to previous research on environmental entrepreneurship (e.g., Amui et al., 2017; de Lange, 2017; Gast et al., 2017) by explicitly distinguishing among different types of environmental orientation, as suggested in the literature (Banerjee, 2002; Stead and Stead, 1996).

Second, this study enhances findings on the networks of environmentally oriented ventures. In this regard, a firm-level perspective is adopted, and the start-up is viewed as part of a network. This understanding is built on a markets-as-networks perspective (Johanson and Mattsson, 1985; Mattsson and Johanson, 2006), as opposed to the personal network perspective of the founder (e.g., Birley, 1985; Elfring and Hulsink, 2007; Stam et al., 2014). Research indicates that network activities are mandatory for environmentally oriented ventures (Hansen, 2014) and that clean-technology ventures depend on a complex network of actors with multiple interests (Doganova and Karnøe, 2015). However, previous findings on the connection between environmentally oriented ventures and their networks are often based on case studies (e.g., Doganova and Karnøe, 2015) or small samples (e.g., Meyskens and Carsrud, 2013) and, consequently, fall short in providing generalizable insights into networking differences between environmentally and non-environmentally oriented firms. In contrast, this paper contributes empirical evidence based on a relatively large sample.

The remainder of this paper is organized as follows. In the next section, hypotheses are developed on the impact of environmental orientation on networking frequency and network size. Subsequently, the methods and data used to test the hypotheses are described. After empirically testing the hypotheses on the basis of survey data gathered from 248 young, technology-based firms, the results and the implications for future research and entrepreneurial practice are discussed. Within this discussion, a particular focus is placed on the resources required for networking and on the opportunities and barriers that tend to accompany internal and external environmental orientations. The final section draws conclusions, highlighting the necessity of differentiating between inand external environmental orientations ternal in entrepreneurship research.

#### 2. Conceptual background and development of hypotheses

Different concepts covering a firm's relationship with the natural environment have been discussed in the literature, such as environmental orientation (e.g., Banerjee, 2002; Chan et al., 2012), environmental-management practices (e.g., González-Benito and González-Benito, 2005; Montabon et al., 2007), and ecopreneurship (e.g., Isaak, 2002; Schaltegger, 2002). This paper focuses on environmental orientation because it is a theoretically wellestablished concept, its operationalization is proven in quantitative research, and it captures the firm's general posture toward environmental issues (Baneriee, 2002; Baneriee et al., 2003; Hörisch, 2015; Shah, 2015). Environmental orientation encompasses a firm's acknowledgment of its responsibilities concerning the natural environment, the importance a firm assigns to the environmental impact of its activities, and the perceived need to minimize negative environmental impacts (Banerjee, 2002). The construct has been operationalized using two dimensions (Banerjee, 2002; Chan et al., 2012): external and internal. This paper builds on Banerjee (2002) seminal work and applies his distinction between external and internal environmental orientations. External environmental orientation captures the extent to which managers believe external stakeholders demand that the firm fulfill environmental standards. The level of external environmental orientation is high when managers assume significant negative consequences for not complying with the perceived requirements. Firms with high levels of external environmental orientation can therefore be regarded as being pushed toward a pro-environmental orientation. Internal environmental orientation refers to managers' and employees' values and standards with regard to environmental protection. As such, it can be interpreted as a "pro-environmental corporate culture" (Chan et al., 2012, p. 623) that is manifested in the firm's environmental policies and procedures, the use of environmental reporting, and the training of employees in incorporating environmental standards into their daily routines.

Network theory (e.g., Granovetter, 1973, 1985) emphasizes the importance of both the quality and the quantity of networking activities. To capture both aspects of networking, this paper distinguishes between networking frequency and network size. Networking frequency is defined as the extent to which a firm directly interacts with its network partners (Ostgaard and Birley, 1996), such as customers, suppliers, investors, research institutions, and industry experts (Chesbrough, 2003; Gemuenden et al., 1996; Håkansson, 1987, 1989). This construct has also been termed managerial ties (Peng and Luo, 2000) and bridging ties (Stam and Elfring, 2008). High networking frequency serves as a foundation for developing strong ties (Granovetter, 1985), which are characterized by interdependencies among network partners and a high degree of shared understanding (Cheng and Sheu, 2012; Johnson and Sohi, 2001). Communication is enhanced in close relationships, which enables conflicts to be resolved more effectively and efficiently (Ulaga, 2003). Strong ties also increase the likelihood that network partners will share exclusive knowledge (Johnson and Sohi, 2001), and they enable the transfer of tacit knowledge (Lane and Lubatkin, 1998), which in turn creates a better platform for selling the start-up's value propositions. Because close ties enhance the likelihood of trustworthy behavior (Granovetter, 1985), they decrease the uncertainty and risk associated with future transactions. However, high levels of networking frequency introduce higher costs at the transaction interface (O'Donnell et al., 2001; Zhao and Aram, 1995) and may lead to unproductive redundancies in the partnership.

Previous research indicates that the degree of collaboration with network partners increases in contexts characterized by high uncertainty (Pfeffer and Salancik, 1978) and high innovativeness (Tether, 2002), which are typical conditions for environmentally oriented firms (Hockerts and Wuestenhagen, 2010; Mazzucato, 2016; Schaltegger and Wagner, 2011). Therefore, frequent networking is particularly relevant for firms with a high Download English Version:

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