LUT University

Individual innovativeness as a driver of career success: academic techno-experts in an entrepreneurial ecosystem

Nisula Anna-Maija, Olander Heidi

This is a Final draft version of a publication

published by Edward Elgar Publishing

in The Handbook of Research on Techno-Entrepreneurship : Ecosystems, Innovation and Development

DOI: 10.4337/9781786439079.00021

Copyright of the original publication: © Edward Elgar Publishing 2019

Please cite the publication as follows:

Nisula, A.-M., Olander, H. (2019). Individual innovativeness as a driver of career success: academic techno-experts in an entrepreneurial ecosystem. In: Thérin, F., Appio, F. P., Yoon, H. (eds.) The Handbook of Research on Techno-Entrepreneurship : Ecosystems, Innovation and Development. pp. 251-275. DOI: 10.4337/9781786439079.00021

This is a parallel published version of an original publication. This version can differ from the original published article.

Individual innovativeness as a driver of career success: academic techno-experts in an entrepreneurial ecosystem

Post-doctoral researcher *)

Anna-Maija Nisula, LUT University, School of Business and Management, P.O.Box 20, FI-53851 Lappeenranta, FINLAND

Email: anna-maija.nisula@lut.fi

Associate professor

Heidi Olander, LUT University, School of Business and Management, P.O.Box 20, FI-53851 Lappeenranta, FINLAND

Email: heidi.olander@lut.fi

*) corresponding author

Reference:

Nisula, A-M. & Olander, H. (2019): Individual innovativeness as a driver of career success: academic techno-experts in an entrepreneurial ecosystem. The Handbook of Research on Techno-Entrepreneurship, Ecosystems, Innovation and Development, Third Edition, pp. 251-277; eds. Thérin, F., Appio, F. P., and Yoon, H., Edward Elgar Publishing, UK, Cheltenham, ISBN 978 1 78643 906 2; ISBN 978 1 78643 907 9 (eBook): DOI 10.4337/9781786439079

ABSTRACT

In this chapter, we investigated individual innovativeness as an entrepreneurial activity in an entrepreneurial ecosystem. As a main interest, we examined academic techno-entrepreneurs' innovativeness in relation to their career success. Thereafter, in a comparative study, we examined whether there were differences in the relationship between innovativeness and career success in three types of sampled academic techno-experts: entrepreneurs, experts considering entrepreneurship and experts not considering entrepreneurship. The proposed models were tested using a SEM-PLS analysis of the survey dataset comprising 423 observations collected from members of the Academic Engineers and Architects in Finland (TEK) trade union. Our results showed that an academic techno-entrepreneur's innovativeness is strongly and significantly related to her or his career success, that is, career satisfaction and income level. These results are similar for all three types of academic techno-experts. We discuss the implications of our findings and make recommendations for future study.

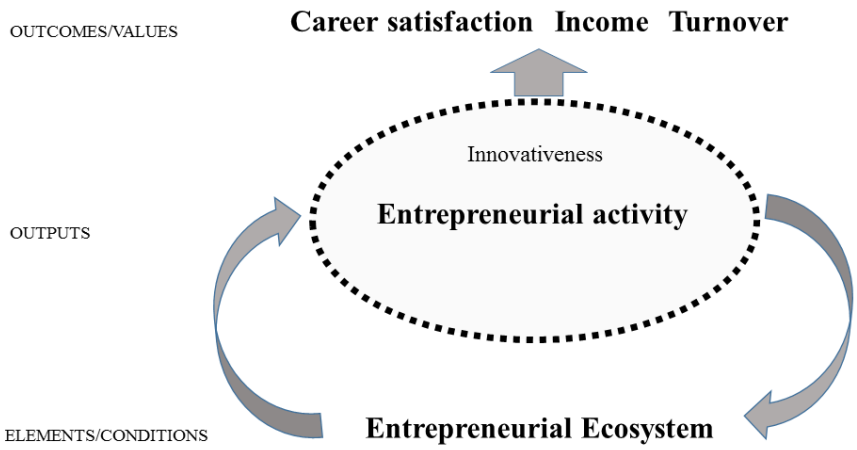
INTRODUCTION

Today's economy provides novel and multiple career opportunities for highly educated knowledge experts, and they are increasingly choosing different types of project-based careers, including entrepreneurship, rather than working full-time at one firm (e.g. Born and van Witteloostuijn, 2013). These individuals are critical for performance as they create, distribute and integrate knowledge (e.g. Davenport et al., 2002). They prefer flexibility and autonomy and create careers outside conventional organizations while also being able to work independently with various combinations of companies and other independent actors at the same time. It is appropriate to examine these innovative knowledge experts from an entrepreneurial ecosystem perspective, because in an entrepreneurial ecosystem an entrepreneur is the key actor and entrepreneurship takes place in a complex social context, which requires input of knowledge from multiple individuals.

The concept of an entrepreneurial ecosystem spotlights individual entrepreneurs as key players (Stam, 2015, pp. 1759, 1762; Baumol, 1993, p. 30), that is, as leaders, developers and maintainers of the entrepreneurial ecosystem, while governments and service providers provide the environment for individual entrepreneurs and act as enablers of entrepreneurial ecosystems (Stam, 2014, p. 1). At the core of an ecosystem are the entrepreneurial activities of entrepreneurs and entrepreneurial employees (Figure 11.1), which result in valuable outcomes for societies, such as career satisfaction, income and firm turnover (Stam, 2014, p. 6). While previous ecosystem research has focused on company-level investigations (e.g. Adner and Kapoor, 2010, p. 306; Valkokari et al., 2017, p. 13), individual-level investigations have received less attention. However, as the innovative entrepreneurs are the key actors in the entrepreneurial ecosystem and critical for economic growth in general (Wennekers and Thurik, 1999, p. 49), it is important to target research particularly on them.

Recent entrepreneurial ecosystem research has been also criticized for targeting practitioners and not academic audiences (Stam, 2015, p. 1762). In particular, academic techno-experts have had less attention in entrepreneurial ecosystems research, although they are critical drivers of technological change and economic growth, both as entrepreneurs and entrepreneurial employees within organizations (e.g. Holley and Watson, 2017, p. 51). Academic techno-experts contribute to entrepreneurial ecosystems by engaging in them, developing them and creating value. More specifically, they execute entrepreneurial activities (entrepreneurship or entrepreneurial employee activity) in order to produce valuable entrepreneurial outcomes such as career satisfaction, income and productivity (Figure 11.1). In

addition, academic entrepreneurs also differ from average entrepreneurs: they are highly educated knowledge specialists and many of them are self-employed, solo-entrepreneurs (independent experts) or freelancers working on project-based contracts, or entrepreneurial employees. We aim to fill this research void by focusing on individual academic entrepreneurs in the field of technology (techno-entrepreneurs).



Source: Adapted and modified from the original figure by Stam (2014, p. 6).

Figure 11.1: Entrepreneurs' innovativeness as entrepreneurial activities that produce valuable career outcomes (career satisfaction and income).

Entrepreneurial activity is the core of a successful entrepreneurial ecosystem because it reflects not only how actors and elements are involved in the entrepreneurial ecosystem but also how the ecosystem functions (Figure 11.1). Even though the role of an entrepreneur is fundamental for entrepreneurial ecosystems, little is known about the individual entrepreneur's behaviours and activities that enable the valuable outcomes to occur. While innovativeness, that is, individuals' activities to ideate, promote and actualize ideas in practice, has been examined widely as organizational behaviour under the construct of innovative work behaviour (De Jong and Den Hartog, 2010, p. 23; Scott and Bruce, 1994, pp. 581–582; Janssen, 2000, p. 288), it is rarely explicitly examined among individual entrepreneurs, knowledge workers or

academic experts. Indeed, entrepreneurial ecosystem research has paid little attention to individual entrepreneurs' behaviours, although individual innovativeness can be associated with ambitious entrepreneurs (Stam, 2015, p. 1760; Stam et al., 2012, p. 22), innovations (Oldham and Cummings, 1996, p. 607) and growth-oriented companies (Stam et al., 2009, p. 92). To fill this research void, we focus on individual entrepreneurs' innovativeness and understand it as entrepreneurial activity in an entrepreneurial ecosystem.

The outcomes of an entrepreneurial ecosystem, such as career satisfaction, income and productivity, are values that result from entrepreneurial activity (Stam, 2015, pp. 1765–1766) and reflect entrepreneurs' successful contributions to entrepreneurial ecosystems and society (Figure 11.1). While past research has focused on organizational success rather than individual entrepreneurs' success (e.g. Parasuraman et al., 1996, p. 276) or career success among organizational members (Heslin, 2005; Judge et al., 1995; Seibert and Kraimer, 2001), few studies, if any, have examined entrepreneurial ecosystem outcomes from the perspective of the individual entrepreneur. This is surprising, because several studies suggest that in contemporary work-life, careers and career success are increasingly an individual's responsibility (Arthur and Rousseau, 1996, p. 6; Born and van Witteloostuijn, 2013, p. 24), especially in partial and full-time entrepreneurship and in various atypical work contracts (Born and van Witteloostuijn, 2013, p. 24). We aimed to fill this gap by examining individual entrepreneurs' career success as an outcome of the entrepreneurs' innovativeness. Career success, comprising subjective and objective career success (Hughes, 1958, p. 63), is an individual-level construct and an important indicator of an individual's overall satisfaction with her or his achievements in terms of profession and income. Career success reflects the value resulting from entrepreneurial activity irrespective of the type of academic actor (entrepreneur or entrepreneurial employee).

Drawing from organizational behaviour, career success and entrepreneurship literature, we brought together the concepts of individual innovativeness and academic entrepreneurs' career success within an entrepreneurial ecosystem to answer the main research question: *What are the effects of individual innovativeness on academic techno-entrepreneurs' career success and firm turnover?* Even though our focus is on academic techno-entrepreneurs, we also considered academic techno-experts who were not entrepreneurs. Thereby, we examined: *What are the differences of the effects of individual innovativeness on the career success among types of academics that are differently oriented towards entrepreneurship, namely academic techno-entrepreneurs, techno-experts considering entrepreneurship and techno-experts not considering entrepreneurship as a career option?*

To address the above research questions we proposed a research model that connected entrepreneurs' innovativeness with objective and subjective career success. In addition, we proposed that the innovativeness of techno-entrepreneurs is connected to company-level turnover. The proposed models were tested using Partial Least Squares (SmartPLS) analysis of the survey dataset, 423 observations collected from members of the trade union of Academic Engineers and Architects in Finland (TEK).

This chapter is organized as follows. We first set out our research into the entrepreneurial ecosystem framework, starting with a brief overview of the existing literature on entrepreneurs' innovativeness and career success. Then we build hypotheses in order to answer the research questions, before proceeding with the presentation of our findings – the impact of innovativeness on academic techno-entrepreneurs' career success. We conclude by discussing the implications of our findings in terms of recommended future entrepreneurial ecosystem research.

ACADEMIC TECHNO-EXPERTS IN AN ENTREPRENEURIAL ECOSYSTEM

Academic Techno-experts

As an entrepreneurial ecosystem approach begins with an innovative individual instead of a company or organization, this allows us to consider three types of academic techno-entrepreneurs: (1) entrepreneurs, (2) pre-entrepreneurs (who consider entrepreneurship) and (3) entrepreneurial employees, who do not consider entrepreneurship but present innovativeness in their work. Similar kinds of categorization were used by Taormina and Kin-Mei Lao (2007, p. 201) and Holley and Watson (2017, p. 51). Then, the academic experts, even if not being entrepreneurs themselves, may, through their intrapreneurship and innovativeness (entrepreneurial employee activity), contribute to an entrepreneurial ecosystem (Stam, 2014, p. 6; Gastaldi et al., 2015, p. 7). This perspective is especially appropriate in today's knowledge-intensive economy where the boundaries between entrepreneurship and employment (employees) are blurred as highly educated experts increasingly choose different and even multiple types of careers (e.g. Born and van Witteloostuijn, 2013, p. 25).

By our definition, an entrepreneur may be a solo-entrepreneur, an entrepreneur employing others, or an independent consultant or service provider with various partners and customers (Nisula et al., 2017). As a founder's influence on a large company can be limited compared to that on a solo and small businesses (Boone et al., 1996, p. 669), it is also worth

examining entrepreneurs whose innovativeness can make a difference in terms of success, both career-wise and company-wise.

Individual Innovativeness as Entrepreneurial Activity in an Entrepreneurial Ecosystem

Academic literature on both innovation (Van de Ven et al., 1989; Janssen, 2000) and entrepreneurship (Chua et al., 1999, p. 19) indicates that an individual's creative and innovative actions are fundamental for innovations (Oldham and Cummings, 1996), improvements (De Jong and Den Hartog, 2010, p. 24), entrepreneurial processes (Chen and Yang, 2009, p. 399; Zhou, 2008, p. 3), business growth and survival (e.g. Jabani Mambula and Sawyer, 2004), and science-based academic entrepreneurship (Haller and Welch, 2014). In fact, innovation, that is, an individual's desire to develop and implement an idea in practice, is often a critical stimulus to initiate a start-up business or entrepreneurial career. Some studies (Carland et al., 1984, p. 356; Sadler-Smith et al., 2003, p. 49) suggest that entrepreneurship is about innovative behaviour to pursue success. As continuous innovation is essentially embedded in knowledge-work (Drucker, 1999, p. 82) and entrepreneurial processes (Chen and Yang, 2009, p. 399), the innovativeness of academic entrepreneurs and experts (knowledge specialists) is vital for entrepreneurial ecosystem activities. Innovative academics may act as orchestrators of knowledge capabilities, connections, and support (e.g. Dougherty and Dunne, 2011, p. 1215; Dhanaraj and Parkhe, 2006, p. 661) to create value. Entrepreneurial ecosystems, such as organizational ecologies, rely on the self-organizing (Dougherty and Dunne, 2011 p. 1214) that arises from the innovative actions of interdependent actors, while they aim to integrate knowledge for novel proposals and plans that are not achievable by any single actor (Dougherty and Dunne, 2011, p. 2015). Thus, innovative individuals (academic entrepreneurs) actively suggest improvements, capture new opportunities, share and manage knowledge (e.g. Wilson et al., 2007, p. 1052; Gastaldi et al., 2015, p. 8), and perform entrepreneurial activities essential for academic experts to drive technological development and make changes worldwide.

Career Success as a Valuable Outcome in Entrepreneurial Ecosystems

Career success can be defined as accumulated positive and psychological outcomes resulting from one's work experiences (Seibert and Kraimer, 2001). In line with previous

studies on career success (Hughes, 1958, p. 63; Heslin, 2005, p. 114; Judge et al., 1995, pp. 486–487; Van Maanen, 1977, p. 9), we focused on two types of career success: subjective career success (career satisfaction) and objective career success (income level and turnover). Whereas objective career success can be observed or measured, subjective career success concerns an individual's experience of her or his job and career satisfaction (Judge et al., 1999, p. 622).

Career satisfaction (subjective) reflects an entrepreneur's and expert's satisfaction with various aspects of their career progress and success (Parasuraman et al., 1996, p. 276) and a personal meaning of career success (Hall, 2002). It is likely that individuals who are satisfied with their career will engage with that career for future success (Arthur et al., 2005, p. 180; Boehm and Lyubomirsky, 2008, p. 102) and thereby contribute to an entrepreneurial ecosystem. Objective career success refers to salary, income, compensation and promotion. Judge et al. (1995), for example, assessed objective career success with annual salary and total monetary compensation. In addition, a company's turnover is an important indicator of objective success among academic entrepreneurs, particularly among solo-entrepreneurs and small firms. That is, the company can be seen as an extension of an entrepreneur (Lumpkin and Dess, 1996, p. 138; Gunz and Heslin, 2005, p. 107), and investigating individual entrepreneurs' career success provides insights into the success of their company.

ACADEMIC TECHNO-EXPERT'S INNOVATIVENESS AND CAREER SUCCESS

Innovativeness as a Driver of Career Success

Past research indicates that there is a relationship between individual behaviour and career success. Forret and Dougherty (2004, p. 430) found that some networking behaviours are related to income level and career satisfaction among managerial and professional employees. Likewise, individual's positive organizational behaviour is found to relate to individual performance and satisfaction (Luthans et al., 2007, p. 566). A meta-analysis study by Ng et al. (2005, p. 388) found that proactivity was related to objective career success (income). Haller and Welch (2014, p. 808) associate innovativeness and proactive behaviour with the entrepreneurial behaviour of an academic scientist. With this background, we suggest that innovativeness (innovative behaviour) is an appropriate predictor of an entrepreneur's career success, that is, career satisfaction, income level and company turnover. We propose this because it is the individual's actions that lead to entrepreneurship (Carter et al., 2003; Georgelli

et al., 2000, p. 7), innovation and improvement (De Jong and Den Hartog, 2010, p. 23; Janssen, 2000, p. 288; Chua et al., 1999, p. 19). In this sense, innovativeness reflects an entrepreneur's ability to use her or his individual capital to benefit her or his career and living, and, in a broader sense, an entrepreneurial ecosystem and society.

Innovativeness and Career Satisfaction (Subjective Career Success)

Innovativeness refers to an individual's desire to generate, promote and implement initiatives in order to achieve novel outcomes by using her or his individual capital. Innovativeness is found to positively affect an individual's work performance (e.g. Janssen, 2000, p. 287; Shalley, 1995, p. 483; Amabile, 1988, p. 125). In addition, initiative taking and achievement orientation are essential for both entrepreneurship (Shane et al., 2003, p. 265; McClelland, 1961, p. 36; Crant, 2000, p. 441) and employee behaviour (Crant, 2000, p. 441). Moreover, initiative taking (identifying opportunities, creating favourable conditions, innovation promotion) is associated with individual career success (Seibert et al., 1999, p. 421; Crant, 2000, p. 440). Thus, innovativeness can be assumed to relate to an individual's overall satisfaction of her or his career achievements, such as career success, advancement, skill development, autonomy, intellectual stimulation and income. This study assumed that highly innovative academic techno-experts are highly satisfied with their careers as they are able to master and put their personal capital and innovativeness into practice and thereby feel satisfied with the inputs they have made into their career. It was assumed that this also occurs for all types of academic experts (entrepreneurs, experts considering entrepreneurship and experts not considering entrepreneurship). Thereby, we posited the following hypothesis:

H1: An academic techno-expert's innovativeness is positively related to her or his career satisfaction.

Innovativeness and Income Level (Objective Career Success)

As individual innovativeness has positive outcomes for a team as well as for an organization (West, 1990, p. 309; Janssen, 2000, p. 287; Oldham and Cummings, 1996, p. 607; Shalley, 1995, p. 483; Amabile, 1988, p. 125), we believe that the same activity could produce objective value for an academic expert as well.

We assumed that highly innovative academic experts earn higher incomes as they desire novelty, take initiatives, and are often in an autonomous position which allows them to use innovativeness for their own work or for wider work in society. Innovative entrepreneurs' and experts' incomes may also depend on their innovation success, which may encourage them to put more effort into innovative behaviour, leading to increases in their income levels. An innovative academic's income level may be relatively high because of her or his good innovative performance. In addition, employees' innovative behaviours are often rewarded and/or acknowledged by salaries. For example, many innovative companies, or universities as employers of academic experts, tend to acknowledge good research and development activity in terms of performance-based pay, with additional rewards payable to innovators who create a basis for commercializing products such as patents or other measurable industrial rights. Thus, it is also likely that highly innovative academic employees are reasonably well compensated in their current positions and they therefore have no specific ambition towards entrepreneurship. Therefore, we hypothesized the following:

H2: An academic techno-expert's innovativeness is positively related to her or his income level.

I*nnovativeness and Company Turnover*

Past research indicates that managers' individual characteristics and behaviour (Amason, 1996, pp. 123–124) affect a company's performance (Minichilli et al., 2010, p. 207; Boone et al., 1996, p. 669; Lumpkin and Dess, 1996, p. 138) and innovation (Hambrick and Mason, 1984, p. 195). This is especially the case for self-employed workers and small businesses, that is, simple firms (Miller, 1983, pp. 772–773). It follows that entrepreneurs' innovativeness is likely to lead to a company's innovativeness, that is, a company's capacity to pursue innovation. It is appropriate to use a company's turnover when assessing an academic entrepreneur's objective career success, because a company and an entrepreneur are intertwined (Lumpkin and Dess, 1996, p. 138). We suspected there to be a positive relationship between the innovativeness of academic entrepreneur-managers and company performance. Furthermore, similar kinds of relationships are likely to exist in the case of various types of entrepreneurs (such as freelancers or self-employed independent experts) positively contributing to company turnover (company success). Therefore we hypothesized the following:

H3: An academic techno-entrepreneur's innovativeness is positively related to her or his company's turnover.

DATA AND METHODS

In the Finnish entrepreneurial ecosystem, the role of professional trade unions is important. The trade union of Academic Engineers and Architects in Finland (TEK) comprises 70 000 members, being academic, educated technology experts (engineers and architects). TEK aims to support connectivity, professional development after graduation, support during employment and support in case of unemployment of their members. Furthermore, academic experts can drive changes in legislation and regulations through their association with the union. Trade unions tend to be an active voice in society on issues that are important to their members. For example, another trade union, the Confederation of Unions for Academic Professionals in Finland (Akava), recently spoke on behalf of an increasing number of academic freelancers and part-time entrepreneurs.

Around 8 per cent of TEK members are either full-time or part-time entrepreneurs. In addition, a quarter of the trade union members have considered, or at least are interested in, entrepreneurship. The trade union actively offers services related to entrepreneurship to its members. TEK offers services such as guides for starting a company and advice on contracting, and offers personal liability insurance for the self-employed and entrepreneurs who have their own companies. The TEK entrepreneurs' club is an active, open club for all TEK members who are entrepreneurs or interested in entrepreneurship. The TEK members actively take part in activities related to their interests such as career evenings, entrepreneurship-themed activities, surveys and networking with others with similar interests. Individual TEK members may also belong to different kinds of formal and informal networks of entrepreneurs and work on different kinds of platforms. Among the most relevant ways of influencing an entrepreneurial ecosystem is for TEK members to take part in elections where members choose representatives who aim to actively contribute and improve the members' status politically and societally.

4.1 Data Collection

We based our analysis on survey data, in which the respondents were Finnish technology entrepreneurs and experts with an academic degree, who were members of TEK. We collected the data via a web-based questionnaire in the spring of 2016. The survey design comprised one set of questions directed to all respondents and another specific set of questions directed only

to respondents who were identified as entrepreneurs (identification was based on a dropdown list).

The respondent sample consisted of three types of academic experts, identified from the survey as entrepreneurs, academic individuals considering entrepreneurship and academic individuals not considering entrepreneurship (Table 11.1). We involved also potential entrepreneurs, because individuals' looking for opportunities for entrepreneurship are seen as nascent or pre-entrepreneurs (e.g. Holley and Watson, 2017, p. 51). We identified entrepreneurs from their response of having had experience of entrepreneurship. Academic individuals considering entrepreneurship versus those not considering entrepreneurship were identified from their response to the item 'Have you ever seriously considered becoming an entrepreneur?' (response 'Yes' = considering, and 'No' = not considering). While our interest was in individuals considering entrepreneurship, we also included individuals not considering entrepreneurship in order to look for similarities and differences between these groups of respondents. Additionally, the rationale for including academic experts employed by others was that this group tend to work in entrepreneurial positions, for example as managers and designers, and thereby contribute, as entrepreneurial employees, to an entrepreneurial ecosystem. The respondents who answered our survey were individual experts working across different industries in various positions within organizations, such as entrepreneurs, part-time entrepreneurs, freelancers, academic engineering and architecture students, those retired from academic careers in engineering, or unemployed. The common factors linking all the respondents was that they were currently studying for, or had graduated with, a university degree in either engineering or architecture and that they were current members of their respective trade unions.

Descriptive Statistics

The entrepreneurs (N = 105) in our sample represented the following industries: management consulting, 23.8 per cent (N = 25); architectural and engineering services, 16.2 per cent (N = 17); ICT services, 14.3 per cent (N = 15); other expert services, 16.2 per cent (N = 17); other industries or services, 13.3 per cent (N = 14); wholesale or retail trades and hospitality, 6.7 per cent (N = 7); manufacturing and construction, 3.7 per cent (N = 4); training and education, 2.9 per cent (N = 3); and primary production, 2.9 per cent (N = 3). Of the entrepreneurs, 22.9 per cent (N = 24) reported receiving only entrepreneurial income, with the rest (77.1 per cent) reporting having received other income as well (e.g. from a regular job).

Table 11.1 displays the descriptive statistics of the respondents for the three groups of academic experts: entrepreneurs, those considering entrepreneurship and those not considering entrepreneurship.

Table 11.1: Descriptive statistics of the respondent groups

	Entrepreneurs (N = 105)		Considering entrepreneurship (N = 177)		Not considering entrepreneurship (N = 141)	
	N	%	N	%	N	%
GENDER						
Female	23	***21.9***	40	***22.6***	50	***35.5***
Male	82	***78.1***	137	***77.4***	91	***64.5***
AGE						
29 or under	7	***6.7***	20	***11.3***	29	***20.6***
30–39	14	***13.3***	35	***19.8***	37	***26.2***
40–49	27	***25.7***	54	***30.5***	30	***21.3***
50–59	26	***24.8***	40	***22.6***	24	***17.0***
60 or more	31	***29.5***	28	***15.8***	21	***14.9***
EDUCATION DEGREE						
Student	1	***1.0***	8	***4.5***	4	***2.8***
Bachelor's level degree	81	***77.1***	6	***3.4***	6	***4.3***
Master's level degree	21	***20.0***	136	***76.8***	115	***81.6***
Doctoral degree	2	***1.9***	27	***15.3***	16	***11.3***

Research Design

The present research employed two distinct research models. Research 1 investigated the effect of an academic entrepreneur's innovativeness on her or his career satisfaction and objective career-success variables of income level and company turnover (Figure 11.2). This model relates to the main research question.

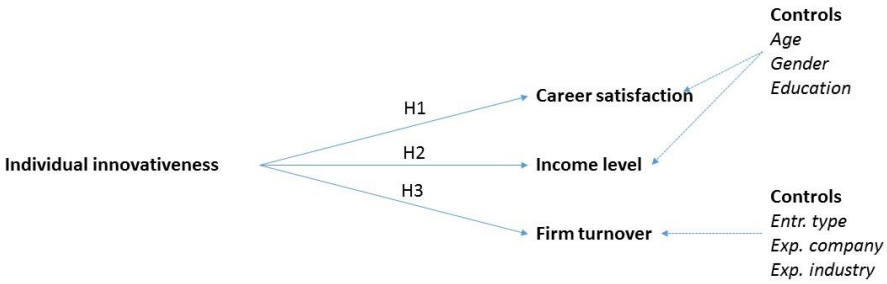


Figure 11.2 Research 1: academic techno-entrepreneurs' model

Research 2 investigated whether differences existed between the three types of academic techno-experts in relation to innovativeness and the career success variables of satisfaction and income level (Figure 11.3). This model refers to our secondary research question.

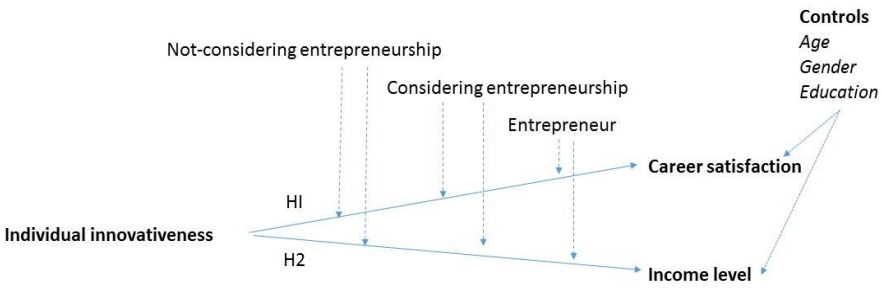


Figure 11.3: Research 2: comparative study model(s)

Measures and Analyses

We used only existing established scales to ensure reliability and validity (Bryman and Bell, 2011). We assessed *subjective career success* (α = 0.87) with the six-item scale (by Born and van Witteloostuijn, 2013, p. 32; Heslin, 2005, p. 121), where respondents used a seven-point Likert scale. *Objective career success* was measured with two variables. First, income level was measured with a six-item scale (1 = less than €36 000 and 6 = €80 000 or more). We used income level because it is a comparable and objective measure between different employees and is reported (in annual Finnish income tax returns by the national tax office) in a way that informs Finnish citizens of their yearly income before tax in a uniform way. Second, for the entrepreneurial group, we also assessed company turnover as an indicator of entrepreneurial career success because turnover is an objective measure of the scale of entrepreneurial activity for a given year of observation. *Company turnover* was measured using the scale of Jayawarna et al. (2013, p. 41). The scale comprised six turnover categories: 1 = less than €10 000 and 6 = more than €500 000. In addition, an option of 0 = 'not applicable to me' was also used to capture inactive entrepreneurs.

We assessed *innovativeness* (α = 0.86) using a seven-point Likert scale. Four items designed to capture idea promotion and idea implementation behaviours were adapted from the innovative work behaviour scale of Janssen (2000, p. 292). One item, included in Janssen's scale and designed to capture the generation of ideas, was adapted from the scales of Scott and Bruce (1994, p. 604). Our survey measured both creativity and innovative behaviour, and to avoid any overlapping of these scales, we decided to use the full creativity scale and exclude the corresponding items from the innovative behaviour scale.

Related to the control variable of company turnover, in Research 1 we used *length of the entrepreneur's experience as an entrepreneur* (named as variable *Exp. company*) as a control variable as this was likely to affect turnover: at the beginning of entrepreneurship, turnover tends to be low, and it grows once the company matures. In previous research, work experience was found to relate to objective career success (Forret and Dougherty, 2004, p. 430), so we also included *work experience within the industry of the company/entrepreneurship* (named as *Exp. industry*) *before starting as entrepreneur* as a control variable. Both of these control variables were measured in months.

We also included *type of entrepreneurship* (named as variable *Entr. type*) as a control variable. More specifically, we asked the entrepreneur-respondents to choose which of the following classifications of entrepreneurship best described their entrepreneurial experience:

entrepreneur employing others (N = 34, 32.4 per cent); full-time entrepreneur/freelancer (N = 27, 25.7 per cent); hybrid entrepreneur (entrepreneur and employee at the same time) (N = 13, 12.4 per cent); inactive entrepreneur (currently not an active entrepreneur) (N = 16, 15.2 per cent); and retired entrepreneur (N = 15, 14.3 per cent).

Furthermore, we included the control variables of age, education and gender in both research models. The demography of an employee has been found to influence her or his behaviours and outcomes such as promotion and income level (Pfeffer, 1983, p. 351) and career success (Judge et al., 1995, p. 486). Age has been found to positively predict objective career success of organizational members (Judge et al., 1995, pp. 485, 502). It is likely that the human capital factor of education representing the domain-specific knowledge is an important aspect for the success of academic experts. Scholars (Ng et al., 2005, p. 384; Pfeffer and Ross, 1982, p. 75) have found that education significantly impacts income. Finally, we also control for gender as the career experiences of men and women often differ (Ng et al., 2005, p. 368); research has found differences between gender in terms of subjective career success and satisfaction (Born and van Witteloostuijn, 2013, p. 40).

The data relied on self-report measures, which increases the likeliness of common method bias. To test the risk of common method bias, we used Harman's single-factor test (Podsakoff et al., 2003, p. 889). We conducted a principal component analysis that involved all the items from all constructs. In Research 1, the largest factor accounted for 34.96 per cent of the variance, which suggests that common method bias was not a concern. In Research 2 the largest factor accounted for 37.14 per cent of the variance in the group of entrepreneurs, 36.9 per cent of the variance in the group of experts considering entrepreneurship, and 37.12 per cent of variance in the group of experts not considering entrepreneurship. Hence, common method bias was not a concern issue in any of these groups.

METHOD

We used Partial Least Squares (version 3.2.7 of SmartPLS; see Ringle et al., 2015) as well as IBM SPSS Statistics 24 software for the analyses. To assess the model's predictive accuracy (R^2) and the significance of the structural paths, we employed the PLS bootstrapping procedure.

Measurement Models

Research 1: academic techno-entrepreneurs' model

Correlation analysis demonstrate that innovativeness had a significant relation with satisfaction (0.576; $p<0.01$), which supports our expectations of the interconnection between the variables.

Construct reliability (CR) and convergent validity of the constructs represented *internal consistency.* Composite reliability of a construct's innovativeness (CR = 0.89, α = 0.86) and career satisfaction (CR = 0.90; α = 0.86) were above the threshold of 0.70, determined by Bagozzi and Yi (1988, p. 82). Correspondingly, the average variance extracted (AVE) values (0.64 and 0.59) exceeded the cut-off of 0.50 determined by Fornell and Larcker (1981, pp. 45–46). Furthermore, the square root of each construct's AVE value was greater than the variance shared between that construct and the other constructs in the model (Fornell and Larcker, 1981, pp. 45–46). *Discriminant validity* was then established. Additionally, the loadings of all items were above the cut-off of (0.60; Barclay et al. (1995, pp. 288) and statistically significant, with one exception: one of the item loadings for the construct 'innovativeness' (0.55) was below the cut-off. We accepted this individual indicator because it represented an idea generation dimension of the innovativeness scale. This is in line with Barclay et al. (1995, pp. 288), who suggested that lower single-indicator loadings could be accepted if composite reliability was high enough. In the present study, composite reliability of the materialism construct was high enough.

Research 2: comparative model(s)

Internal consistency in the per group analyses showed that indicators exhibited loadings greater than 0.60 with one exception (one item in innovativeness). The constructs' AVE values were well above 0.50; all constructs achieved high CR values and Cronbach's alpha values of 0.80 and higher for all three groups (Table 11.2).

Table 11.2: Internal consistency of the three groups

Latent variable		1	2	3
N		*105*	*177*	*141*
Innovativeness	CR	0.898	0.894	0.891
	α	0.858	0.853	0.849
	AVE	0.644	0.634	0.627
Career satisfaction	CR	0.896	0.905	0.902
	α	0.860	0.874	0.871
	AVE	0.593	0.616	0.608

*Note:*1 = Entrepreneurs, 2 = Experts considering entrepreneurship, 3 = Experts not considering entrepreneurship.

The Fornell and Larcker (1981) criterion test showed that the constructs exhibited discriminant validity in all three groups. These results provide support for the measure's reliability and convergent validity in all three subsamples (see Appendix).

RESULTS

Innovativeness and Academic Techno-entrepreneurs' Career Success

Our results showed that innovativeness of academic techno-entrepreneurs was positively related with career satisfaction (B = 0.540; $p < 0.005$) and income level (B = 0.191; $p < 0.05$) (Table 11.3). Of the control variables, age was the most significant predictor of income level (B = 0.278; $p < 0.005$), and also gender was significant (B = 0.154; $p < 0.10$) at 10 per cent. Control variables of entrepreneur type (*Entr. type*) and length of entrepreneurial experience (*Exp. company*) were strongly and positively related to company turnover (B = 0.297; $p < 0.005$ and B = 0.324; $p < 0.005$, respectively).

Table 11.3: Research 1: model testing

	Path coefficient	T		R^2
ACADEMIC ENTREPRENEURS (N = 105)				
Innovativeness → Satisfaction	**0.540**	**6.375**	***	**0.380**
Age → Satisfaction	*0.087*	*0.873*		
Education → Satisfaction	*-0.072*	*0.870*		
Gender → Satisfaction	*0.170*	*1.643*		
Innovativeness → Income level	**0.191**	**2.063**	**	**0.190**
Age → Income level	*0.278*	*3.022*	***	
Education → Income level	*0.008*	*0.095*		
Gender → Income level	*0.154*	*1.793*	*	
Innovativeness → Turnover	**0.022**	**0.217**		**0.216**
Entr. type → Turnover	*0.297*	*3.219*	***	
Exp. company → Turnover	*0.324*	*3.379*	***	
Exp. industry → Turnover	*0.085*	*0.867*		

Note: *** $p < 0.005$; ** $p < 0.05$; * $p < 0.10$.

The Research 1 model explained 38.0 per cent of the variance in career satisfaction, 19.0 per cent of the variance in income levels and 21.6 per cent of the variance in company turnover.

Innovativeness and Career Success among the Three Types of Techno-experts

The structural model's evaluation of the three sub-groups is displayed in Table 11.4. Our results showed that innovativeness of academic entrepreneurs was positively related to income level (B = 0.190; $p < 0.05$) and career satisfaction (B = 0.540; $p < 0.005$). Of the control variables, age was positively and strongly related to income level (B = 0.278, $p < 0.005$) and gender (B = 0.154; $p < 0.10$) was significant at 10 per cent in this group. The model was able to explain 19.0 per cent of the variance in income level and 37.9 per cent of the variance in career satisfaction.

Among the respondents considering academic entrepreneurship, we found that individual innovativeness was strongly and positively related to income level (B = 0.197; $p < 0.005$) and career satisfaction (B = 0.506; $p < 0.005$). For this group, age was significantly (B = 0.281, $p < 0.005$) related to income level but not to career satisfaction. In addition, gender was also significantly related to income level (B = 0.138; $p < 0.10$).The structural model was able to explain 23.8 per cent of the variance in income level and 27.0 per cent of the variance in career satisfaction.

Among the respondents not considering entrepreneurship, we found that individual innovativeness was strongly and positively related to career satisfaction (B = 0.453; $p < 0.005$) and income level (B = 0.224; $p < 0.005$). For this group, both age (B = 0.402; $p < 0.005$) and education (B = 0.137; $p < 0.005$) were significantly and positively related to income level.

Table 11.4: Research 2: model(s) testing

	Path coefficient	T		R^2
ACADEMIC ENTREPRENEURS (N = 105)				
Innovativeness → Income level	**0.190**	**2.027**	****	**0.190**
Age → Income level	*0.278*	*3.009*	***	
Education → Income level	*0.008*	*0.096*		
Gender → Income level	*0.154*	*1.761*	*	
Innovativeness → Career satisfaction	**0.540**	**6.334**	****	**0.379**
Age → Career satisfaction	*0.087*	*0.858*		
Education → Career satisfaction	*-0.072*	*0.862*		
Gender → Career satisfaction	*0.169*	*1.689*		
ACADEMIC EXPERTS CONSIDERING ENTREPRENEURSHIP (N = 177)				
Innovativeness → Income level	**0.197**	**3.438**	***	**0.238**
Age → Income level	*0.281*	*3.096*	***	
Education → Income level	*0.123*	*1.585*		
Gender → Income level	*0.138*	*1.942*	*	
Innovativeness → Career satisfaction	**0.506**	**10.397**	****	**0.270**
Age → Career satisfaction	*0.094*	*0.695*		
Education → Career satisfaction	*0.116*	*1.497*		
Gender → Career satisfaction	*0.017*	*0.271*		
ACADEMIC EXPERTS NOT CONSIDERING ENTREPRENEURSHIP (N = 141)				
Innovativeness > Income level	**0.224**	**2.994**	****	**0.314**
Age → Income level	*0.402*	*4.943*	***	
Education → Income level	*0.137*	*2.723*	***	
Gender → Income level	*0.076*	*1.117*		
Innovativeness → Career satisfaction	**0.453**	**8.066**	****	**0.269**
Age → Career satisfaction	*0.128*	*1.643*		
Education → Career satisfaction	*0.076*	*0.905*		
Gender → Career satisfaction	*0.047*	*0.580*		

Note: *** $p < 0.005$; ** $p < 0.05$; * $p < 0.10$.

DISCUSSION AND CONCLUSIONS

The present study breaks new ground in the research on academic techno-entrepreneurs in the entrepreneurial ecosystem by investigating their innovativeness as an entrepreneurial activity. Our results provide interesting and novel insights on the relationship between academic

entrepreneurs' innovativeness and their career success, as well as a comparison among academic entrepreneurs, experts considering entrepreneurship and experts not considering entrepreneurship. In the following sections we discuss these findings and the implications for entrepreneurial ecosystem research and practice in more detail.

Academic Techno-entrepreneurs' Innovativeness and Career Success

Our study shows that academic techno-entrepreneurs' innovativeness positively affects their career success, that is, their career satisfaction and income. We found that highly innovative academic techno-entrepreneurs are significantly satisfied with their careers, and they earn relatively high incomes. The influence of their innovativeness was stronger for their career satisfaction compared to their income level.

More specifically, our study reveals that when academic techno-entrepreneurs are able to actualize their innovativeness through entrepreneurship, they feel satisfaction with their entrepreneurial career. The finding reflects the research which shows that the experienced personal meaning of career (Hall, 2002) and various career achievement aspects (Parasuraman et al., 1996, p. 276) have a positive influence on subjective career success. For an academic techno-entrepreneur, the source of subjective satisfaction might be sufficient flexibility and autonomy, enabling them to channel innovativeness in a productive manner via their entrepreneurship. This refers to the importance of a meaningful career, that is, the personal meaning of one's career (Hall, 2002). As previous studies suggest, individuals' desire to realize their innovativeness and innovation is likely to lead to entrepreneurship (Carter et al., 2003), which may also explain our finding.

We also found that when an academic expert's innovativeness becomes actualized through entrepreneurship, it has a positive influence on her or his income. Thus, innovative academic techno-entrepreneurs capture business opportunities, promote the realization of ideas, produce innovation and, therefore, earn well. As entrepreneurs are responsible for their own income (e.g. Born and van Witteloostuijn, 2013, p. 24), their innovativeness may also serve to meet their income needs. Thus, entrepreneurs' innovativeness is essential for a company to be successful, which reflects the view that the entrepreneur and company are intertwined (Lumpkin and Dess, 1996, p. 138; Sadler-Smith et al., 2003, p. 49).

Of the control variables, entrepreneurs' age was strongly related to income level. The older entrepreneurs' firms are mature, which is why older entrepreneurs are likely to earn well, whereas the younger entrepreneurs with immature start-ups are taking the initial steps in their

entrepreneurship and therefore their income is low. This is supported by the descriptive statistics (Table 11.1), which show that entrepreneurs are typically 40 years old or older. We also found that the male respondents earned higher incomes. Male respondents represented approximately 78 per cent of the sample, which may affect the result.

Finally, entrepreneur type and length of entrepreneurial experience were both related significantly and strongly to company turnover. This finding indicates that entrepreneurs' accumulated experience in entrepreneurship (maturity) leads to higher company turnover. In other words, the innovativeness of an entrepreneur is likely to become actualized in the form of higher company turnover when the entrepreneur's experience in entrepreneurship accumulates. Against expectations, we found that an entrepreneur's innovativeness was not related to company turnover.

Comparative Study

In a comparative study, we found that academic techno-experts' innovativeness positively affects their career success, that is, career satisfaction and income, for all types of academic techno-experts (entrepreneurs, experts considering entrepreneurship and experts not considering entrepreneurship). We found that highly innovative academic techno-experts are highly satisfied with their careers, and they earn relatively high incomes. The influence of their innovativeness was much stronger for their career satisfaction compared to their income level.

In other words, when academic techno-experts are able to actualize their innovativeness, they feel satisfaction with their career, regardless of the type of career. The finding reflects previous research on sources of career satisfaction (subjective), such as the importance of personal meaning of career (Hall, 2002) and individual career achievements (Parasuraman et al., 1996, p. 276), by showing that for academic techno-experts, career satisfaction results from the opportunity to channel their innovativeness in a productive manner in their work.

In addition, for all three types of respondents, highly innovative academic experts earn higher incomes. It is likely that different aspects have influenced the results. While entrepreneurs themselves are in charge of their incomes, the incomes and related career progress of the techno-experts employed by an organization are more related to organizational practices to reward and boost employee innovativeness. The finding suggests that highly innovative academic employees are reasonably well compensated in their current positions.

Of the control variables, age was significantly related to income level for all three types of academic experts. The finding indicates that irrespective of the type of techno-expert, age explains techno-experts' incomes, and older techno-experts earn more than younger ones. The influence of age was strongest among the academic experts not considering entrepreneurship. In this group, education was also related significantly and strongly to income level. This could be explained by the fact that academic experts not considering entrepreneurship tend to be highly experienced with a high level of education, holding well-paid positions within their organizations and feeling satisfied with their incomes. Furthermore, we found that gender was also significantly related to income level in the groups of entrepreneurs and experts considering entrepreneurship. Overall, the control variables of age and gender were related to income level, but not with career satisfaction (subjective career success).

This current research contributes to entrepreneurial ecosystem research by targeting individual ecosystem actors (techno-experts) and by shedding light on the importance of their innovative behaviour for valuable ecosystem outcomes. More specifically, innovativeness was seen as an entrepreneurial activity produced by three different types of academic techno-experts. To our knowledge, this is the first research that has examined academic entrepreneurs' behaviour and, specifically, innovativeness as an entrepreneurial activity and its relation to value creation in an entrepreneurial ecosystem context. The present study found that academic entrepreneurs' innovativeness is a fundamental entrepreneurial activity by which academic entrepreneurs contribute to national entrepreneurial ecosystems. Within entrepreneurial ecosystems, techno-experts are critical actors in charge of the integration of knowledge, building connections and mobilizing support for all potential and novel initiations arising from the actors involved in the entrepreneurial ecosystem. Through their innovativeness, that is, entrepreneurial activity, they are able to create valuable ecosystem outcomes, employment (employing themselves or others), career satisfaction and income. Indeed, innovative and successful academic entrepreneurs, experts and companies in the tech industry are more likely to contribute to society by producing innovation and growth.

<b>7.3 Limitations and Future Studies

The current study has some limitations. In this study we examined the direct impact of an academic expert's innovativeness on her or his career satisfaction and income, as well as on company turnover in the case of entrepreneurs. However, in future studies, mediation and moderation effects should be investigated, especially in terms of company performance levels. For example, motivations and personality may moderate the relationship between innovativeness and career satisfaction. In addition, there might be differences in the field of

entrepreneurship in terms of local and global actors, as well as the national ecosystems in which the entrepreneurships are involved.

Furthermore, an interesting future research field is the Finnish entrepreneurial ecosystem from the viewpoint of academic experts in tech industries. Finally, we suggest that future studies use research avenues that compare entrepreneurs within limited industry types with larger samples to avoid possible bias from cross-industry sampling, where entrepreneurs' company turnover can be heavily affected by the industry in which they operate. In addition, the fact that innovative and successful academic entrepreneurs and companies in the tech industry contribute to society by producing innovation and growth should be a research focus in future studies, as the entrepreneurial type and company type could both be factors that impact entrepreneur and company performances.

Moreover, as the entrepreneurs included in this study were from various industries, there may have arisen cross-industry entrepreneurial analysis issues, such as differences between entrepreneurs' cost structures (e.g. Born and van Witteloostuijn, 2013, p. 34).

REFERENCES

Adner, R. and R. Kapoor (2010), 'Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations', *Strategic Management Journal*, **31** (3), 306–333.

Amabile, T.M. (1988), 'A model of creativity and innovation in organizations', *Research in Organizational Behavior*, **10** (1), 123–167.

Amason, A.C. (1996), 'Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams', *Academy of Management Journal*, **39** (1), 123–148.

Arthur, M.B., S.N. Khapova and C.P. Wilderom (2005), 'Career success in a boundaryless career world', *Journal of Organizational Behavior*, **26** (2), 177–202.

Arthur, M.B. and D.M. Rousseau (1996), *The Boundaryless Career*. Oxford: Oxford University Press.

Bagozzi, R.P. and Y. Yi (1988), 'On the evaluation of structural equation models', *Journal of the Academy of Marketing Science*, **16** (1), 74–94.

Barclay, D., C. Higgins and R. Thompson (1995), 'The Partial Least Squares (PLS) approach to casual modeling: Personal computer adoption and use as an illustration', *Technology Studies*, **2** (2), 285–309.

Baumol, W. (1993), *Entrepreneurship, Management and the Structure of Payoffs*. Cambridge, MA: MIT Press.

Boehm, J.K. and S. Lyubomirsky (2008), 'Does happiness promote career success?', *Journal of Career Assessment*, **16** (1), 101–116.

Boone, C., B. De Brabander and A. van Witteloostuijn (1996), 'CEO locus of control and small firm performance: An integrative framework and empirical test', *Journal of Management Studies*, **33** (5), 667–700.

Born, A. and A. van Witteloostuijn (2013), 'Drivers of freelance career success', *Journal of Organizational Behavior*, **34** (1), 24–46.

Bryman, A. and E. Bell (2011), *Business Research Methods*. Oxford: Oxford University Press.

Carland, J.W., F. Hoy, W.R. Boulton and J.A.C. Carland (1984), 'Differentiating entrepreneurs from small business owners: A conceptualization', *Academy of Management Review*, **9** (2), 354–359.

Carter, N.M., W.B. Gartner, K.G. Shaver and E.J. Gatewood (2003), 'The career reasons of nascent entrepreneurs', *Journal of Business Venturing*, **18** (1), 13–39.

Chen, M.H. and Y.J. Yang (2009), 'Typology and performance of new ventures in Taiwan: A model based on opportunity recognition and entrepreneurial creativity', *International Journal of Entrepreneurial Behavior and Research*, **15** (5), 398–414.

Chua, J.H., J.J. Chrisman and P. Sharma (1999), 'Defining the family business by behavior', *Entrepreneurship Theory and Practice*, **23** (4), 19–39.

Crant, J.M. (2000), 'Proactive behavior in organizations', *Journal of Management*, **26** (3), 435–462.

Davenport, T.H., R.J. Thomas and S. Cantrell (2002), 'Knowledge-worker performance', *MIT Sloan Management Review*, **39** (2), 23–30.

De Jong, J. and D. Den Hartog (2010), 'Measuring innovative work behaviour', *Creativity and Innovation Management*, **19** (1), 23–36.

Dhanaraj, C. and A. Parkhe (2006), 'Orchestrating innovation networks', *Academy of Management Review*, **31** (3), 659–669.

Dougherty, D. and D.D. Dunne (2011), 'Organizing ecologies of complex innovation', *Organization Science*, **22** (5), 1214–1223.

Drucker, P.F. (1999), 'Knowledge-worker productivity: The biggest challenge', *California Management Review*, **41** (2), 79–94.

Fornell, C. and D.F. Larcker (1981), 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of Marketing Research*, **18** (1), 39–50.

Forret, M.L. and T.W. Dougherty (2004), 'Networking behaviors and career outcomes: Differences for men and women?', *Journal of Organizational Behavior*, **25** (3), 419–437.

Gastaldi, L., F.P. Appio, A. Martini and M. Corso (2015), 'Academics as orchestrators of continuous innovation ecosystems: Towards a fourth generation of CI initiatives', *International Journal of Technology Management*, **68** (1–2), 1–20.

Georgelli, Y., P. Joyce and A. Woods (2000), 'Entrepreneurial action, innovation and business performance: The small independent business', *Journal of Small Business and Enterprise Development*, **7** (1), 7–17.

Gunz, H.P. and P.A. Heslin (2005), 'Reconceptualizing career success', *Journal of Organizational Behavior*, **26** (2), 105–111.

Hall, D.T. (2002), *Careers in and out of Organizations*. Thousand Oaks, CA: Sage.

Haller, M.K. and E.W. Welch (2014), 'Entrepreneurial behavior of academic scientists: Network and cognitive determinants of commitment to grant submissions and award outcomes', *Entrepreneurship Theory and Practice*, **38** (4), 807–831.

Hambrick, D.C. and P.A. Mason (1984), 'Upper echelons: The organization as a reflection of its top managers', *Academy of Management Review*, **9** (2), 193–206.

Heslin, P.A. (2005), 'Conceptualizing and evaluating career success', *Journal of Organizational Behavior*, **26** (2), 113–136.

Holley, A.C. and J. Watson (2017), 'Academic entrepreneurial behavior: Birds of more than one feather', *Technovation*, **64**, 50–57.

Hughes, E.C. (1958), *Men and Their Work*. New York: Free Press.

Jabani Mambula, C. and F.E. Sawyer (2004), 'Acts of entrepreneurial creativity for business growth and survival in a constrained economy: Case study of a small manufacturing firm (SMF)', *International Journal of Social Economics*, **31** (1/2), 30–55.

Janssen, O. (2000), 'Job demands, perceptions of effort-reward fairness and innovative work behaviour', *Journal of Occupational and Organizational Psychology*, **73** (3), 287–302.

Jayawarna, D., J. Rouse and J. Kitching (2013), 'Entrepreneur motivations and life course', *International Small Business Journal*, **31** (1), 34–56.

Judge, T.A., D.M. Cable, J.W. Boudreau and R.D. Bretz (1995), 'An empirical investigation of the predictors of executive career success', *Personnel Psychology*, **48** (3), 485–519.

Judge, T.A., C.A. Higgins, C.J. Thoresen and M.R. Barrick (1999), 'The big five personality traits, general mental ability, and career success across the life span', *Personnel Psychology*, **52** (3), 621–652.

Lumpkin, G.T. and G.G. Dess (1996), 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, **21** (1), 135–172.

Luthans, F., B.J. Avolio, J.B. Avey and S.M. Norman (2007), 'Positive psychological capital: Measurement and relationship with performance and satisfaction', *Personnel Psychology*, **60** (3), 541–572.

McClelland, D.C. (1961), *The Achievement Society*. Princeton, NJ: Von Nostrand.

Miller, D. (1983), 'The correlates of entrepreneurship in three types of firms', *Management Science*, **29** (7), 770–791.

Minichilli, A., G. Corbetta and I.C. MacMillan (2010), 'Top management teams in family-controlled companies: "familiness", "faultlines", and their impact on financial performance', *Journal of Management Studies*, **47** (2), 205–222.

Ng, T.W., L.T. Eby, K.L. Sorensen and D.C. Feldman (2005), 'Predictors of objective and subjective career success: A meta-analysis', *Personnel Psychology*, **58** (2), 367–408.

Nisula, A.-M., H. Olander and K. Henttonen (2017), 'Entrepreneurial motivations as drivers of expert creativity', *International Journal of Innovation Management*, **21** (5).

Oldham, G.R. and A. Cummings (1996), 'Employee creativity: Personal and contextual factors at work', *Academy of Management Journal*, **39** (3), 607–634.

Parasuraman, S., Y.S. Purohit, V.M. Godshalk and N.J. Beutell (1996), 'Work and family variables, entrepreneurial career success, and psychological well-being', *Journal of Vocational Behavior*, **48** (3), 275–300.

Pfeffer, J. (1983), 'Organizational demography', in L.L. Cummings and B.M. Staw (eds), *Research in Organizational Behavior (Vol. 5)*. Greenwich, CT: JAI Press, pp. 299–357.

Pfeffer, J. and J. Ross (1982), 'The effects of marriage and a working wife on occupational and wage attainment', *Administrative Science Quarterly*, **27** (1), 66–80.

Podsakoff, P.M., S.B. MacKenzie, J.Y. Lee and N.P. Podsakoff (2003), 'Common method biases in behavioral research: A critical review of the literature and recommended remedies', *Journal of Applied Psychology*, **88** (5), 879–903.

Ringle, C.M., S. Wende and J. Becker (2015), *SmartPLS 3*. Boenningstedt: SmartPLS GmbH.

Sadler-Smith, E., Y. Hampson, I. Chaston and B. Badger (2003), 'Managerial behavior, entrepreneurial style, and small firm performance', *Journal of Small Business Management*, **41** (1), 47–67.

Scott, S.G. and R.A. Bruce (1994), 'Determinants of innovative behavior: A path model of individual innovation in the workplace', *Academy of Management Journal*, **37** (3), 580–607.

Seibert, S.E., J.M. Crant and M.L. Kraimer (1999), 'Proactive personality and career success', *Journal of Applied Psychology*, **84**, 416–427.

Seibert, S.E. and M.L. Kraimer, (2001), 'The five-factor model of personality and career success', *Journal of Vocational Behavior*, **58** (1), 1–21.

Shalley, C.E. (1995), 'Effects of coaction, expected evaluation, and goal setting on creativity and productivity', *Academy of Management Journal*, **38** (2), 483–503.

Shane, S., E.A. Locke and C.J. Collins (2003), 'Entrepreneurial motivation', *Human Resource Management Review*, **13** (2), 257–279.

Stam, E. (2014), 'The Dutch entrepreneurial ecosystem'. Available at SSRN: http://dx.doi.org/10.2139/ssrn.2473475 (accessed July 29, 2014).

Stam, E. (2015), 'Entrepreneurial ecosystems and regional policy: A sympathetic critique', *European Planning Studies*, **23** (9), 1759–1769.

Stam, E., N. Bosma, A. van Witteloostuijn, J. De Jong, S. Bogaert, N. Edwards and F. Jaspers (2012), 'Ambitious entrepreneurship: A review of the academic literature and new directions for public policy', AWT Report, **41**.

Stam, E., K. Suddle, J. Hessels and A. van Stel (2009), 'High-growth entrepreneurs, public policies, and economic growth', in Rui Baptista and Joao Leitao (eds), *Public Policies for Fostering Entrepreneurship: A European Perspective*. New York: Springer, pp. 91–110.

Taormina, R.J. and S. Kin-Mei Lao (2007), 'Measuring Chinese entrepreneurial motivation', *International Journal of Entrepreneurial Behavior and Research*, **13** (4), 200–221.

Valkokari, K., M. Seppänen, M. Mäntylä and S. Jylhä-Ollila (2017), 'Orchestrating innovation ecosystems: A qualitative analysis of ecosystem positioning strategies', *Technology Innovation Management Review*, **7** (3), 12–24.

Van de Ven, A.H., H.L. Angle and M.S. Poole (1989), *Research on the Management of Innovations*. New York: Ballinger.

Van Maanen, J. (1977), 'Experiencing organization: Notes on the meaning of careers and socialization', in J. Van Maanen (eds), *Organizational Careers: Some New Perspectives*. New York: Wiley, pp. 15–48.

Wennekers, S. and R. Thurik (1999), 'Linking entrepreneurship and economic growth', *Small Business Economics*, **13** (1), 27–56.

West, M.A. (1990), 'The social psychology of innovation in groups', in Michael A. West and James L. Farr (eds), *Innovation and Creativity at Work: Psychological and Organizational Strategies*. Oxford: John Wiley & Sons, pp. 309–333.

Wilson, J.M., P.S. Goodman and M.A. Cronin (2007), 'Group learning', *Academy of Management Review*, **32** (4), 1041–1059.

Zhou, J. (2008), 'New look at creativity in the entrepreneurial process', *Strategic Entrepreneurship Journal*, **2** (1), 1–5.

APPENDIX: CORRELATIONS AND DISCRIMINANT VALIDITY IN THREE SAMPLES IN RESEARCH 2

	1	2
Entrepreneurs		
1. Innovativeness	**0.803**	
2. Satisfaction	0.576**	**0.770**
Considering entrepreneurship		
1. Innovativeness	**0.796**	
2. Satisfaction	0.464**	**0.785**
Not-considering entrepreneurship		
1. Innovativeness	**0.792**	
2. Satisfaction	0.488**	**0.780**

*Note:*** Correlation is significant at the 0.01 level (2-tailed);