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Entrepreneurs' Social Identity and the Preference of Causal and Effectual Behaviours in Start-Up Processes

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Abstract

This paper examines how the social identity of an entrepreneur influences the entrepreneurial behaviour of entrepreneurs engaged in new ventures. Building on the typology of entrepreneurial identities developed by Fauchart and Gruber (2011), this study examines the relationship between social identity of the entrepreneur and subsequent entrepreneurial behaviour using a mixed method approach. Based on interviews with entrepreneurs in six start-ups within the tourism sector and previous literature, three hypotheses were developed of the relationship between the entrepreneurial identity and the entrepreneurial behaviour (causation, effectuation). Consequently, the hypotheses were tested using a survey among a sample of entrepreneurs registering a new firm last year. The study finds that the entrepreneurial identity influences whether the individual engages in predominantly effectual or causal behaviour. Hence, the study contributes to focusing on entrepreneurial identity as an important factor shaping the behaviours of entrepreneurs. In addition, we add to the understanding of entrepreneurs as a heterogeneous group. Entrepreneurs vary in terms of their identity and this variation has consequences for their entrepreneurial behaviour. Finally, adopting a mixed method approach the study contributes to benefiting from and interaction of qualitative and quantitative data in entrepreneurship research.

Keywords: Entrepreneurial identity, social identity theory, causation, effectuation, entrepreneurial behaviour

Introduction

The relationship between identity and behaviour has long been a key question within social psychology (Burke and Reitzes 1981), and has recently received attention within the entrepreneurship domain (Farmer, Yao, and Kung-Mcintyre 2011; Hoang and Gimeno 2010; Fauchart and Gruber 2011). An identity provides an individual with a frame of reference in which to interpret both the social situation and his/her (potential) actions (Wells 1978). As firm creation is an inherently social activity, entrepreneurs shape their behaviours in relation to how they perceive themselves relative to others (Fauchart and Gruber 2011). Several scholars suggest a strong link between entrepreneurial identity and entrepreneurial actions and outcomes (Cardon, Sudek, and Mitteness 2009; Hoang and Gimeno 2010; Shepherd and Haynie 2009), but to date there is limited empirical research examining this relationship (Farmer et al. 2011). While important research has focused on understanding entrepreneurial identity and how it is developed (Jain, George, and Maltarich 2009; Falck, Heblich, and Luedemann 2012), there is lack of understanding of how entrepreneurial identity relates to the entrepreneurial process (Coupland and Brown 2012) and to the behaviours individuals undertake during identification and exploitation of entrepreneurial opportunities (Farmer et al. 2011; Fauchart and Gruber 2011).

Although research into this area is scarce, indicative results suggest that identity has consequences for entrepreneurial behaviour. Farmer et al. (2011) found significant relationships between the strength of entrepreneurs' identity aspiration and the number of discovery and exploitation activities undertaken by nascent entrepreneurs in three geographical contexts. Further, Murnieks, Mosakowski, and Cardon (2012) found that the centrality of entrepreneurial identity increased entrepreneurial passion and subsequently the amount of time entrepreneurs

devoted to founding and operating a new venture. However, these studies examine the strength or centrality of entrepreneurial identity, but do not take into account variations in types of entrepreneurial identity influencing behaviours in different ways. Individuals may engage in entrepreneurial activity for different reasons and with different motivations (Shane, Locke, and Collins 2003; Hessels, van Gelderen, and Thurik 2008) and may develop different entrepreneurial identities (Hytti and Heinonen 2013). It is likely that such differences in aspirations influence behaviour. Building on case studies of sport equipment producers, Fauchart and Gruber (2011) developed a typology classifying three pure types of entrepreneurial identities: Darwinians, Communitarians and Missionaries. While Darwinians identify with the establishment of strong and profitable firms, Communitarians identify with the products they offer and the users of those products. The third type, Missionaries identify with a social aim or cause and believe that a firm can be an agent of change in society. Entrepreneurs can relate to one of these pure identity types or to combinations of them.

This study builds on – and empirically measures – Fauchart and Gruber's (2011) classification of three pure types of entrepreneurial identity, and seeks to examine how the type of identity influences on entrepreneurial behaviours during the business start-up process. To conceptualize entrepreneurial behaviour, we rely on recent theoretical development differentiating between effectual and causal decision-making (Sarasvathy 2008, 2001) and related behaviours (Chandler et al. 2011; Fisher 2012). This theorizing suggests that individuals may follow different logics when undertaking entrepreneurial processes and setting up new ventures. Causation processes take a particular effect as given and focus on selecting between means to create that effect while effectuation process refers to the choice between possible effects that can be created with given means. Where causation is a goal-directed approach based on prediction, entrepreneurs following an effectual logic are more likely to adjust their goals and

strategies as the situation develops, based on the resources they control and trying to leverage on contingencies as they emerge rather than avoiding uncertain situations. It has been suggested that entrepreneurs choose effectual or causal behaviours, or combinations of them, depending on the level of uncertainty perceived (Chandler et al. 2011; Sarasvathy 2008) and on their level of expertise (Sarasvathy 2008; Dew, Read, et al. 2009). Adding to this, we suggest that the social identity of the entrepreneur is an important basis for choice of approach to entrepreneurial action. This paper examines the relationship between types of entrepreneurial identity and the extent to which entrepreneurs adopt effectual and causal behaviours during the start-up of new ventures.

Using a mixed method approach, this paper aims at contributing to the literature in several ways. First, building on interview data and current literature we theorize on how different entrepreneurial identities shape entrepreneurial behaviour that can be identified as effectual or causal, and develop three testable hypotheses. We then test these hypotheses using survey data. The literature on entrepreneurial identity lacks theorizing as well as empirical examination on the relationship between types of entrepreneurial identity and types of entrepreneurial behaviour. This paper addresses this gap by developing and testing theory on the relationship between types of entrepreneurial identity and effectual and causal behaviours. Second, calls have been made for studies examining the antecedents of effectual and causal behaviours (Perry, Chandler, and Markova 2012). This study responds to this call by focusing on entrepreneurial identity as an important factor shaping the behaviours of entrepreneurs. Third, the paper adds to the understanding of entrepreneurs as a heterogeneous group. By emphasizing on variations in motivations, self-understandings, goals and behaviours, the paper contributes to deepening of the knowledge on entrepreneurs and their actions. The paper shows that there is not only one way to successful entrepreneurship, as the understanding of success depends on

what the entrepreneur seeks to achieve and his/her frame of reference with regard to success. Fourth, we develop survey-based measures of Darwinian, Communitarian and Missionary identities that can be used in future research to advance and test theorizing on the relationship between (different types of) entrepreneurial identities and their behavioural implications. Finally, adopting a mixed method approach this study also has methodological contributions related to the interaction between qualitative and quantitative data in entrepreneurship research. Hence, taking a pragmatic approach to the issue of incommensurability (Morgan 2007), we argue that combining insights from qualitative and quantitative analyses allows for increased understanding of the entrepreneurial process (Howorth, Tempest, and Coupland 2005).

This paper proceeds as follows: First, we account for the theoretical framework building upon social identity theory and the literature on entrepreneurial identity, as well as theory of effectuation. Thereafter we present the two empirical studies. The empirical part first includes in-depth analyses of six new ventures in the experience based tourism sector that are applied to assist in the development of theoretically deduced hypotheses about the relationship between entrepreneurial identity and entrepreneurial behaviour. Following this, survey data from a representative sample of new start-up entrepreneurs are used to test these hypotheses. Finally, results are discussed in relation to theoretical as well as practical implications.

Theoretical framework

Entrepreneurial identity

Identities have become an object of interest in many areas of life and work, and entrepreneurship is no exception. Rather than externally evaluating entrepreneurs and their characteristics, research on entrepreneurial identities focuses on how individuals come to see

and understand themselves as entrepreneurs. On one end there is the social constructivist view of identities that understands them as emergent and fluid, as a process of becoming and often rely on narrative or discursively constructed view on identities (Hytti 2005; Lindgren 2000; Wåhlin 1999; Johansson 2004; Jones, Latham, and Betta 2008; Watson 2009; Down 2006; Down and Warren 2008; Kasperova and Kitching 2014; Warren 2004; Steyaert 2007). On the other end, identity theories rely on more realistic and positivistic view of identity. In this realm, the theory has evolved into two different but closely related directions (Stryker and Burke 2000; Powell and Baker 2012). In this study, we emphasize the relatedness of these literature streams and the value of combining insights from different paradigms to gain increased knowledge about the entrepreneurial process (Howorth *et al.* 2005). While acknowledging identities as socially constructed, we argue that an entrepreneurs' identity will have direct implications for behavioural approaches to business start-up processes.

Role identity theory reflects the differences in perceptions and actions that come with a role (Mathias and Williams 2014). This role can be stable or more situated identity (Ashforth, Harrison, and Corley 2008), and assuming a particular role makes us think and act differently than when taking another role (Ren and Guo 2011). One key tenet in role identity theory has been questions about salience or centrality of a particular role, such as an entrepreneur, or which of the entrepreneurial roles (e.g. founder, manager, investor) is the most salient and central identity to the individual. Research suggests that the role and its importance for the individual influence their behaviour. For example, Murnieks et al. (2012) found that individuals who perceive the entrepreneurial identity as central and important to themselves experience greater levels of passion. The more salient and central the identity, the more time we allocate on this specific activity or the more frequently we behave according to our role identity (Stryker and Burke 2000). Recent research suggests that we should not assume a single role identity but

entrepreneurs can assume and navigate many role identities, and depending on the role identity assumed, entrepreneurs think differently about opportunities and make different decisions with regard to them. Mathias and Williams (2014) emphasise the within-work role identities. In addition, Farmer et al. (2011) suggest that it is not just the current identity but also the aspired role identity as an entrepreneur that predicts entrepreneurial behaviour. This is consistent with the idea that identity is a future-oriented construct: our behaviour is affected by who we are but also by whom we want to become (Watson 2013).

Social identity theory, on the other hand, provides a theoretical lens through which different types of entrepreneurial identities can be recognized related to differences in basic social motivation, basis of self-evaluation and frame of reference as entrepreneur (Fauchart and Gruber 2011). Social identity theory is thus interested in social identities gained from group memberships (Brown 2000; Mills and Pawson 2011), and the person defines themselves as a member of a group or social category. Again, individuals do not usually have a single social identity, but more often hybrid identities (Fauchart and Gruber 2011) whereby individuals occupy several social identities that can overlap, enrich one another and be in conflict (Chasserio, Pailot, and Poroli 2014; Hytti 2005; Essers and Benschop 2007, 2009; Down and Warren 2008). Social identities are socially defined, and come with certain norms that the individual must conform to (Chasserio et al. 2014).

Even if the link between identity and behaviour in entrepreneurship has received limited attention (Fauchart and Gruber 2011), identity theory as such suggests a clear relation between the two: “*In order to be (some identity), one must act like (some identity).*” (Burke and Reitzes 1981: 90). Burke and Reitzes (1981) argued that the connection between identity and behaviour occurs through a common underlying frame of reference, i.e. that the frame of reference one

uses to assess one's identity in a particular context is the same frame of reference used to assess one's behaviour in the same context. Hence, an entrepreneur with a particular frame of reference related to his/her identity will use the same frame of reference in the decision making process related to entrepreneurial behaviour. Hence, there needs to be a fit between the identity and enterprising activity (Mills and Pawson 2011). Since entrepreneurship research often reports realisation of self or the ability to express oneself as an important motivation for entrepreneurs to start new ventures and go into entrepreneurship (Van Gelderen and Jansen 2006), we assume that this sense of self – i.e. entrepreneurial identity – strongly affects their behaviour in how they go about when seeking to create and exploit the opportunity.

We build on Fauchart and Gruber's (2011) typology of three primary types of entrepreneurial social identities: Darwinian, Communitarian and Missionary identities. The typology is developed based on three identity dimensions: basic social motivation, basis of self-evaluation and frame of reference/relevant others. The three identities span the logical spectrum of pure founder identities, reflecting their social relationships in terms of personal and symbolic interaction with others and in terms of level of social inclusiveness. As a person's identity constitutes a cognitive frame for interpreting experiences and behaviour options, identity provides an explanation to the different entrepreneurial behaviours (Fauchart and Gruber, 2011). Hence, it is possible to discuss these identities in relation to prior research on entrepreneurial behaviour through the different dimensions.

The Darwinian identity represents the identity of the "classic entrepreneur" with the primary goal of establishing strong and successful business and focus on ensuring the success of the firm (Van Praag 1999). For the Darwinians the competing firms and other Darwinians are the frame of reference and their social group against which they evaluate themselves. For these

entrepreneurs the industry where they operate, the markets they serve or the greater social cause bear no or relatively little meaning. Hence, in view of greater profits and better chances of success they might switch and engage in new ventures in completely new areas of business.

Communitarian identity can be developed based on those motivated strongly by a hobby or leisure interest and then developing a business to support this group of like-minded individuals. Creating an authentic identity (Lewis 2013) is important in order to be fully one with the social group, to share intimate knowledge of the community and to be able to serve it from the inside. For Communitarians, it does not make sense to change the industry but perhaps innovate new, and more efficient, ways in which to serve the group. This comes close to the concept of 'the user entrepreneur' suggested by Shah and Tripsas (2007). In their definition, the users stumble on an idea through their own use and then share it with their community. The process also involves a collective creative activity prior to venture creation within the user community.

Missionary identity is motivated by starting the firm to advance a greater cause and acting in a responsible way is considered critical. Hence, their motivation links closely to social entrepreneurship (Bacq and Janssen 2011) and studies focusing on social entrepreneurial identity. Jones et al. (2008) suggest that the individuals embracing a social entrepreneurial identity need to distinguish themselves from and denying closeness to profit seeking identities, in our case the Darwinians. Hence, for the Missionary identity it may be equally important to develop their identity based on the social status of social entrepreneurs but also by differentiating from other 'Not-Me' identities. Hence, the basis of identity is not only who I am, but also equally who am I not.

While social identity theory is attractive for many reasons, its usefulness for research on entrepreneurship depends on its ability to explain entrepreneurship phenomena. In this study, we argue that one key aspect of entrepreneurship research is the study of activities and behaviours undertaken during firm creation (Gartner 1988; Gartner and Carter 2003; Davidsson 2008). We visit social identity theory to help us understand and explain the heterogeneity of behaviours founders undertake during the start-up process. Although there are different types of yardsticks, e.g. different types of behaviours that one could use to examine this, we have decided to focus on theorizing about effectuation and causation as two distinct approaches to new venture creation (Sarasvathy 2001), which has been described as one of the most prominent current perspectives in entrepreneurship research (Fisher 2012; Perry et al. 2012). Hence, we examine if social identity theory and the typology of Missionary, Darwinian and Communitarian identities, can be related to causal and effectual behaviour among founders. As these represent primary types of entrepreneurial social identity, we allow for combinations of the types into hybrid identities. The following section briefly accounts for the literature on effectual and causal entrepreneurial behaviour and discusses potential relationships between entrepreneurial identity and these two types of behaviour.

Effectual and causal entrepreneurial behaviour

Effectuation was proposed as a logic through which entrepreneurs make decisions under uncertainty given that they have bounded rationality. Sarasvathy (2001, 2008) argued that in true uncertainty situations, it is not possible to base decisions on predictions of the future outcomes of current decisions, as there is no ways to gather information about the potential outcomes or their likelihood. Based on studies of decision making among expert entrepreneurs, she suggested that entrepreneurs facing uncertainty situations instead seek to control the future by building their decisions on certain principles including starting with means, leveraging

contingencies, obtaining pre-commitments from potential partners and making investments based on affordable loss. Contrastingly, the causation approach suggests focusing on the ends entrepreneurs seek to achieve, making predictions based on pre-existing knowledge, positioning the offering based on market and competitive analyses and making investment decisions based on expected returns. Recent studies have documented that both types of approaches are found among entrepreneurs (Dew, Read, et al. 2009; Gabrielsson and Politis 2011; Goel and Karri 2006; Harms and Schiele 2012), and that they are sometimes also combined (Kraaijenbrink, Ratinho, and Groen 2012; Alsos and Clausen 2014). Consequently, calls have been made for examination of antecedents as well as outcomes of effectual and causal behaviours (Perry et al. 2012). In this study, we build upon the identity literature, which holds that individuals make choices on their behaviour based on their identity, and suggest that differences with respect to effectual and causal behaviour may stem from differences in entrepreneurial identity.

Effectuation and causation are often described as the collection of certain principles that follow from the different underlying logics (Watson 2013). In her original work, Sarasvathy (2001) differentiated between the following five principles in which effectual and causal logics are contrasted:

- Whether the entrepreneur's basis for taking action is means, i.e. the resources he/she controls (effectuation) or ends, i.e. his/her preferences for the goals he/she wants to achieve (causation)
- Whether investment decisions are based on a judgment on how much he/she can afford to lose (effectuation) or an evaluation of expected return (causation)

- Whether the entrepreneur views others as potential partners that he/she seeks to get on board (effectuation) or as competitors that he/she tries to strategically position his/her market offering in relation to
- Whether unexpected events are considered as something that can be exploited (effectuation), or something that should be avoided (causation)
- Whether the future is viewed as unpredictable which only can be approached through taking action (effectuation) or as risky but predictable through analysis and information gathering (causation)

While effectuation and causation are seen as contrasting logics, they are not necessarily opposites (Sarasvathy 2008; Perry et al. 2012), and hence effectual and causal principles can also be combined (Alsos and Clausen 2014; Kraaijenbrink et al. 2012).

One of the basic arguments in effectuation theory is that effectuation principles are particularly useful in situations of (true) uncertainty (Sarasvathy and Dew 2005; Sarasvathy 2001). Consequently, whether effectual or causal behaviours are adopted is dependent on the situation and the degree of uncertainty related to it. For instance, when introducing radical innovations to the market, there are no ways to predict the size and characteristics of the market, as the market does not exist until the innovation has been introduced (Dew and Sarasvathy 2007). In this paper, we argue that the choice of behaviour may also depend on the entrepreneur, as entrepreneurs may have preferences for effectual or causal behaviours. Some entrepreneurs may view the lack of predictability as a situation of uncertainty that only can be dealt with by taking action focusing on your means and what you can do with them, retaining flexibility, and investing only what you can afford to lose. Others may view the same situation as a knowledge gap that can effectively be closed by analysis and planning (Harms and Schiele 2012). Hence,

we argue that even in similar situations (e.g., with respect to uncertainty) entrepreneurs may vary in terms of behaviour chosen, and that this variation in preferences may stem from the identity of the entrepreneur.

The relationship between identity and behaviour has also previously been linked to the theory of effectuation (Watson 2013). In her original work, Sarasvathy (2008) suggested that effectual entrepreneurs start the process based on who they are, what they know and whom they know, i.e. related to their identity. The means that entrepreneurs may start the business from is a function of their identity, knowledge and networks (Sarasvathy and Dew 2013). In particular, when goals are ambiguous, entrepreneurs tend to explain their actions based on their identities rather than their preferences or goals (Sarasvathy and Dew 2005). Their identities may sometimes be related to being an entrepreneur, similar to the Darwinian identity in the Fauchart and Gruber (2011) typology. Other times, it may be linked to other areas of the entrepreneurs' lives, or their values or interests, as described in the Communitarian and Missionary identity typology (cf. Sarasvathy and Dew 2005). In this paper, we argue that differences in identity may also lead to differences in chosen actions, and hence the way entrepreneurs go about to set up their businesses. This also follows from the reasoning of Sarasvathy and Dew (2005). They argue that in situations where the preference for a particular outcome (goal) is clearly connected to a particular course of action that is assumed to result in that outcome, decisions can be made upon the goal preferences. Hence, when the entrepreneurial identity is related to being an entrepreneur, starting-up and operating a firm, such as in case of Darwinian identity, the entrepreneur takes actions assumed to lead to successful firm creation. However, if the identity is based on other interests or values, the goal of firm creation is not such an obvious goal preference. Reasoning from the identity can work also in situations where the causal link

between the action and the outcome is unclear and when the entrepreneur feels passionately about a course of action (Sarasvathy and Dew 2005).

In the following, we will empirically aim to study and test the relationship between entrepreneurial identity and the choice of effectual and/or causal approaches to the development of new a new venture. First, we develop hypotheses on this relationship. The hypotheses development is theoretically guided but also assisted by a qualitative pilot study. These hypotheses are thereafter tested using a quantitative survey design.

Mixed method approach

To examine how the social identities of entrepreneurs influence their behaviours during the business start-up process, we adopted a mixed method approach. Mixed methods integrate both quantitative and qualitative methods with the idea that the combination provides a better understanding of research problems and complex phenomena than either methodology alone (Hurmerinta-Peltomäki and Nummela 2006). Using mixed methods allows for generating and testing theory in the same study, and it offers an opportunity for data triangulation (Molina-Azorín et al. 2012). The mixed method approach has a long tradition in social sciences (Erzberger and Prein 1997), and it has been suggested that it would benefit entrepreneurship research in particular (Davidsson 2003; Westhead and Wright 2000). Although mixed method have been criticised for ignoring problems of incommensurability, strong voices have advocated that such issues can be overcome (Watkins-Mathys and Lowe 2005), and that the interplay between methods and paradigms may be particularly valuable for entrepreneurship research allowing for increased understanding (Howorth et al. 2005). In order to achieve these benefits it is necessary to develop new insights by embracing the world views of the different

paradigms, which was accomplished by having a team of researchers (Scherer 1998). In this study, we start with a qualitative pilot study to help us extend the theory in behavioural consequences of different types of entrepreneurial identity and to assist in the development of hypotheses based on theory. We thereafter test the developed hypotheses in a quantitative design, i.e. a QUAL->QUANT approach (Molina-Azorín et al. 2012). We first present the qualitative study, including approaches for data gathering, findings and results. Thereafter we present the approach and results for the quantitative study.

Hypothesis development

Qualitative pilot study among new founders within tourism

To assist the hypotheses development on relationships between entrepreneurial identity and effectual/causal behaviour, a pilot study consisting of exploratory interviews with entrepreneurs in six new firms was conducted. We chose to select new firms within experience-based tourism, an industry that is emerging as a response to increased demand for experiences from the tourism market (Alsos, Eide, and Madsen 2014). As an emerging industry, the context in which these new firms are started offers few guidelines in terms of industry standards, established market segments or ready-made competitive analyses. Consequently, new firms seeking to offer experience products to tourists find themselves, to varying extent, in situations of uncertainty. Moreover, this is an industry that attracts both entrepreneurs who see the industry as an opportunity to make profits and entrepreneurs driven by other motivations such as interest into specific types of experiences (e.g. skiing, historical heritage or culture activities), or social aims related to a local community, specific nature phenomenon or similar, and hence variations in

entrepreneurial identity (Di Domenico and Miller 2012; Ateljevic and Doorne 2000). As such, the industry is suitable for exploration of the relationships we sought for in this study.

For this pilot study, we selected new firms within the experience-based tourism where the entrepreneurs held key positions. Two firms were started with a single entrepreneur, while four were team start-ups. In two of the team start-ups we interviewed the lead entrepreneur, while in two we interviewed both entrepreneurs jointly. Table 1 gives some more details on the interviewed entrepreneurs. All interviews were conducted face-to-face, tape recorded and later transcribed. Each interview was coded and analysed to identify the entrepreneur's main identity and behaviours. Thereafter, cross-case comparison was conducted to explore the relationships. Potential relationships identified from the cases were then discussed in relation to the literature, and hypotheses were developed based on an iterative process between data analysis and theorizing, i.e. following an abductive reasoning (Varamäki and Vesalainen 2003; Klyver and Foley 2012).

INSERT TABLE 1 ABOUT HERE

The qualitative interviews were analysed and coded with respect to entrepreneurial identity and entrepreneurial behaviour. Examples of coding and quotes are given in Table 2. When it comes to identity, the six entrepreneurs were categorized as follows:

- One entrepreneur was identified as mainly Darwinian (Bus tour packages). Her basic motivation is related to building her own financial wealth (Table 2, b2) and her basis of self-evaluation is related to being professional (Table 2, b1)
- Two entrepreneurs were categorized as mainly Communitarians (Mountain guiding and Experience café). Their basic motivations are related to the community the

belong to (Table 2, a1, e1), the basis of self-evaluation is authenticity in this community (Table 2, a2, e2), and their frame of reference is related to the community they serve (Table 2, a3)

- One was categorized as Communitarian in combination with some Missionary identity (Surf park). Their basic social motivation is both related to their community (the surfers) and to making a difference in the city (Table 2, c1, c2). Their frame of reference is related to the surfing community (Table 2, c3).
- One entrepreneur was identified having a Missionary identity in combination with some Communitarian identity (Organic cheese production, bakery and café). His basic social motivation stems from the idealist ecological ideals and contribution to the local community (Table 2, f2), but also to the community of cheese producers (Table 2, f4). His frame of reference was related to the idealistic goals regarding ecological aspects (Table 2, f1) and his basis of self-evaluation was related to the development of the local community (Table 2, f3).
- One entrepreneur was identified as having a Missionary identity in combination with some Darwinian identity (Health tourism). Here, the basic social motivation was two-folded, both related to the idealistic goals and to the self-interest of creating a job and an income for themselves (Table 2, d1). The basis of self-evaluation was related to idealism (Table 2, d2)

Hence, while three entrepreneurs were identified to rely mainly on one of the pure identities, the other three were found to have combinations or hybrid identities. Hybrid identities were also found by Fauchart and Gruber (2011) who found several of their cases to show combinations of two of the pure identity types. Table 2 outlines the main types of

entrepreneurial behaviour for each of the ventures and gives some examples of quotes from the data to illustrate the findings.

INSERT TABLE 2 ABOUT HERE

Hypotheses of relationships between social identity and entrepreneurial behaviour

Entrepreneurs with mainly a Darwinian identity are described as focusing on establishing strong and profitable firms. Although they may feel attraction to the industry and the products they produce and deliver, they devote most of their attention to activities aimed at ensuring the firm's success (Fauchart & Gruber, 2011). This goal orientation is equivalent to the causation principles of taking ends as the basis for action and basing judgements on evaluation of expected returns. This is also apparent from the case of the bus-tour packaging entrepreneur who was identified as Darwinian. She was motivated by starting a firm and by running a business, focusing on making it profitable and basing her decisions on prediction and expected returns (Table 2, B1 and B2). Further, she also talked about other firms in the industry as her frame of reference when it comes to evaluating her own activities, i.e. competitive analysis (Table 2, B4). Darwinian entrepreneurs are supposed to value a professional approach and manage their firm according to solid business principles (Fauchart and Gruber, 2011). This is also apparent in the case. The bus-tour packaging entrepreneur strongly believed in developing a business plan and using it as a tool in the business development process (Table 2, B3), equivalent to the causation principle of relying on pre-existing knowledge. Hence, this case further supports the theoretical assumption that Darwinian identity will be related to causal behaviour. The following hypothesis is suggested:

H1 *The more strongly the entrepreneur relies on a Darwinian identity, the more strongly they focus on causal behavior in developing the venture.*

The Communitarian identity is described as being strongly engaged in the products or activities produced and delivered by their firm and enthused by their ability to contribute to the community with their products. They see their entrepreneurial activities as important for the development of the community (Fauchart and Gruber, 2011). Hence, the mountain guiding and the experience café entrepreneurs were identified as Communitarian based on their strong focus on products or business area being based on their personal interests and the community group they identified with. The Mountain guiding entrepreneurs had been mountain climbing and skiing all their adult lives and had a strong identity related to this. One of the entrepreneurs had worked in this area all over the world, and starting a business was mainly motivated from the wish of remaining a part of this community. The Experience café entrepreneur was less international, but built the café based on her own strong interests into local heritage and handicraft traditions and had a wish to communicate this to a wider public. Also the surf park entrepreneurs developed their venture based on their own strong interests and lifestyle related to surfing, although they also showed some missionary elements related to developing the community. This focus on products and business development based on their personal interest is equivalent to effectual behaviour, particularly related to the principle of starting with means, basing the venture on 'who I am' and 'what I know' (Sarasvathy and Dew 2005). This is apparent in the three mentioned cases. They did not focus extensively on the end goal. Although they had a basic idea of what they wanted to create, their focus was on what they could do next from where they stood at the moment, following a control rather than a prediction approach (Table 2, A2, E2, C2), and the logic of action rather than the logic of belief (Sarasvathy and Dew 2005). They sought to retain flexibility to be able to develop ideas based on the opportunities

that emerge (Table 2, E1), and they engaged in cooperation with others to develop opportunities further (Table 2, A3, E2, C1). Venture development was also partially co-created together with committed stakeholders (Read, Song, and Smit 2009). They also adopted the principle of affordable loss rather than calculating the expected return from their investments (Table 2, A1, E3), focusing on the potential downside (which can be estimated) rather than on the potential upside (which they are not able to predict and therefore not focus upon) (Dew, Sarasvathy, et al. 2009). Based on this discussion, the following hypothesis is suggested:

H2 *The more strongly the entrepreneur relies on a Communitarian identity, the more strongly they focus on effectual behavior in developing the venture.*

Entrepreneurs with a missionary identity are described by their strong beliefs in their firms as a vehicle of changing something in society. They see their firms as a platform from where they can pursue their societal goals (Fauchart and Gruber, 2011). This goal orientation is not focused on profit or expected return in the classical meaning, but can still be argued to relate to the causal principle of taking the end as their basis for action. The goal orientation is apparent in the case of the organic cheese producer. His Missionary identity based on the organic lifestyle and contributing locally means a clear vision about what the venture is going to be in the end, and this goal is strongly in focus when he develops the business (Table 2, F3, F4). The Health tourism entrepreneur, also mainly identified as possessing a Missionary identity, built the business idea on an idealistic perspective of wanting to create something for people with different sorts of health problems. The entrepreneur described a strong vision for the start-up linked to this idealistic motive, and hence, a focus towards the end goal (Table 2, D1, D4). The same was the case for the surf park entrepreneurs who also possessed some Missionary identity in combination with the Communitarian identity. Compared to the other

Communitarians, this Missionary identity meant that they had a more clear vision of the end goal and focused on what they needed to do to end up there (Table 2, C2). They needed to plan towards the end goal to be able to get investors involved and acquire the resources to get there (Table 2, C3).

On the other hand, as these end goals in all cases were strongly related to the entrepreneurs' values and interests, the ventures were also based on means ('who I am', what I know (Table 2, D2, F4, C2). Missionaries identify strongly with their cause (Fauchart and Gruber, 2011), and not with making a profitable business. In the cases, effectual principles such as pre-commitments (Table 2, F2, C1), and control and flexibility (Table 2, F1) are important as well. Based on this, we argue that entrepreneurs with Missionary identity will show an ambiguity related to behavioral preferences. On one hand, Missionaries are goal oriented and, hence, tend to strongly emphasize the potential ends they seek to achieve through their venture. On the other hand, their decisions are not made on calculations of expected returns or analyses of competitors' positioning, as their ideal goal makes little room for being too focused upon monetary returns. Competitors are only relevant if they inhibit the achievement of the ideal goal. Consequently, a combination of effectuation and causation principles can be adopted. This combination approach does not remove the ambiguity, but is a way to deal with it. They neither adapt a planning or adaptive approach, nor a transformative approach, but rather rely on an approach similar to the visionary strategy as described by Wiltbank et al. (2006). In this strategy, emphasis is put on prediction and control simultaneously, by building a clear vision of the future and seeking to shape that future (Wiltbank et al. 2006). Hence, we propose:

H3 *The more strongly the entrepreneur rely on a Missionary identity, the more likely they are to combine causal and effectual behaviour*

Similar to Fauchart and Gruber (2011), we also found that many entrepreneurs showed hybrid identities. While the developed hypotheses above are based on the pure entrepreneurial identities to facilitate testing, we acknowledge that hybrid identities exist and even may be common. Identities should therefore not be seen as mutually exclusive leading to distinct behaviours. Instead, entrepreneurial behaviours may be influenced by two or more identities simultaneously, which may lead to combination approaches or ambiguous behaviour. The hybrid identities can make behaviour harder to predict from an identity perspective (Fauchart and Gruber, 2011). Our hypotheses consider this by focusing on one identity type at a time, without excluding the influence of potential other identities. In the following section, we will test these hypotheses using a data from a survey among entrepreneurs who recently have started a new business in Norway.

Quantitative survey among new business founders

Sample and data collection

In order to collect data to test the hypotheses we submitted a survey questionnaire to a sample of 3500 new firms from the Norwegian Business register. All limited liability companies registered as new firms in The Norwegian formal business register in 2013 were used as the sampling frame, hence including entrepreneurs that registered a firm at about one year ago at the time of data collection. The register provides contact information to the firm and name of CEO, including e-mail addresses, in addition to characteristics of the firm (e.g. location, industry, financial information). A web-based questionnaire including measures on the social identity of the entrepreneur, his/her entrepreneurial behaviour as well as control variables was administered through e-mail.

Efforts were invested to calculate response rates and examine potential bias. A close inspection of our e-mail register showed that 262 out of the initial 3500 e-mail addresses proved to be wrong (spelling mistakes, etc. in the business register), a few firms had gone bankrupt, and a few founders were listed more than once with the same e-mail address. This reduced our initial sample frame to 3211 valid e-mail addresses. After two reminders, we ended up with a sample of 350 responses. This is an 11 % response rate¹. To check for response bias we compared our sample against the population on key information found for all firms in the business register we have access to. We compared whether there were statistically significant differences between our sample and the population in terms of (1) initial start-up capital and (2) urban/rural location. No statistically significant differences were found.

Measures

Dependent variables

Theorizing suggest that causation and effectuation are two separate types of behaviours displayed by founders. To capture this, two dependent variables were included representing the behaviours of the entrepreneurs during business start-up: effectuation and causation. In order to measure these concepts, we drew on a recently developed and validated 10 items measuring instrument, including five items for causation and five items measuring effectuation (Alsos, Clausen, and Solvoll 2014). Items were measured on a 7-point Likert scale where 1 represented 'completely disagree' and 7 represented 'completely agree'. Preceding the 10 items the following information was given to respondents: 'Please indicate whether you agree or disagree with the

¹ The response rate on 11 % is low, but comparable to other surveys among newly founded firms (e.g. Ucbasaran, Westhead and Wright 2009). Although response bias tests on available variables indicated no significant response bias, we cannot ensure that the sample is representative in all aspects. As our goal has not been to assess the relative prevalence of the various types of identities or behaviours, but rather to test hypotheses about relationships between identity and behaviours, the representativeness of the sample is less critical. However, further studies are needed to confirm findings in other samples.

following statements related how you proceed when establishing the new firm.' The five items measuring causation were: 'We use the long-term goal that we have set as the starting point and strive to acquire the resources that we need in order to achieve this goal', 'An evaluation of the business profit potential is decisive when we decide how much to invest', 'We work systematically in order to achieve long-term goals and do not consider short term opportunities', 'We analyse the competitive market offerings and position our products and prices accordingly', and 'We base our strategic decisions on rigorous analysis of how the market and competitive situation will evolve over time'. (Cronbach's alpha = 0.74). The five items measuring effectuation were: 'We develop the business based on the resources that we have available, without any clear vision of what the business will become in the end', 'Instead of calculating how much profit we will gain if we invest, we invest based on the resources that we have at our disposal', 'We constantly change how we envision the business: "we make the path as we go"', 'We base our cooperation with other on informal agreements, which are changed depending on what they can offer', and 'We let the business develop step-by-step and have no clear idea of what it will look like in the end' (Cronbach's alpha = 0.82). To examine discriminant validity, an exploratory factor analysis was conducted where all 10 items were included. The analysis revealed a clear-cut two factor solution where items measuring effectuation (causation) loaded high (low) on one component and low (high) on the second component. No high side loadings. Both effectuation and causation is measured as a summated mean scale ranging from 1 to 7.

Main explanatory variables

We developed a measurement of Darwinian, Communitarian and Missionary identities relying on a close reading of Fauchart & Gruber's (2011) theorizing for generating measures of the three types of entrepreneurial identities. Building on social identity theory, Fauchart & Gruber (2011) argue that especially three different criteria are important in the social identity theory:

(a) 'Social motivation', (b) 'basis of self-evaluation' and (c) 'frame of reference'. Consequently, three items per identity, one for each of the criteria, in total nine items, were generated. Similarly to the dependent variables, respondents were asked to rate their agreement to each of the nine statements on a 7 point Likert scale (1 = completely disagree, 7 = completely agree). The following introductory text preceded the items: 'What is most important for you as a founder?' Items measuring the three types of identity are presented in Table 3. To examine discriminant validity between the three empirically measured identities an exploratory factor analysis was conducted where all nine items were included. The analysis revealed a clear-cut three-factor solution, where the items loaded high together in the way expected and with no high side loadings. Darwinian, Communitarian and Missionary identities are measured as a summated mean scale ranging from 1 to 7.

INSERT TABLE 3 ABOUT HERE

Control variables

Five control variables were included: Education level, prior experience, team, business idea maturation time, and uncertainty. Human capital, often proxied by education and prior experience, is a classical driving force behind firm formation and entrepreneurial behavior (Stuart and Abetti 1990; Davidsson and Honig 2003; Ucbasaran et al. 2008). Further, founders starting a firm as a team have access to a broader range of human capital and social networks of team members (Davidsson and Honig 2003). Moreover, firm age is a classical variable controlling for organizational differences in experience and the life cycles of firms. However, since all firms in our study were registered within the same year we could not rely on “number of year since registration” as a measure of age. Instead, we asked respondents how long they had been thinking about starting the firm, and hence controlled for variations in the time period

the idea had been developed and matured. Entrepreneurship is further inherently associated with uncertainty and differences in how entrepreneurs perceive uncertainty is argued to influence entrepreneurial behavior (Sarasvathy 2001).

Education is measured as the highest completed level of education and ranges from 1-4 (1 = secondary school, 2 = tertiary school, 3 = Bachelor degree and 4 = Master's degree (or higher)). Respondents were further asked to indicate on a 7-point scale whether they had prior "work experience", "managerial experience", "sales/marketing experience", "experience from new product development/innovation" and "experience from financing/budgeting". These five items are summed in a mean scale ranging from 1 to 7 and measures prior experience. (Cronbach's alpha = 0.75). A factor analysis further documents that these items identify only one latent component. Team is a binary variable where the value 1 indicates that the firm is a team start-up and 0 otherwise. Idea age is measured using a 7 point scale from 1 (less than 1 month) to 7 (more than 5 years). A measure of uncertainty was also included. Respondents were asked to indicate their agreement with 4 statements on a 7 point scale used to measure uncertainty in the literature (Chandler et al. (2011): 'When making decisions, it is very difficult to identify and evaluate the different alternatives', 'We often can't anticipate the outcomes or consequences of our decisions before they are made', 'The knowledge of how to react to changes in the external environment is hard to come by', and 'We don't know which direction to take in response to changes in the external environment'. Uncertainty is measured as a summated mean scale ranging from 1 to 7 (Cronbach's alpha = 0.80).

Table 4 and 5 show descriptive statistics and correlations. Interestingly, the correlation matrix shows that Darwinian, Communitarian and Missionary identities are positively and

significantly correlated, suggesting that many founders have hybrid identities, a point also made by Fauchart and Gruber (2011).

INSERT TABLE 4 ABOUT HERE

INSERT TABLE 5 ABOUT HERE

Results from quantitative analysis and hypothesis testing

The hypotheses were tested using OLS regression analysis. Several models were run for each of the dependent variables; causation and effectuation: Control variables were first entered, then each identity measure was entered, and lastly all identity variables were entered. Results are displayed in Table 6 and Table 7 below.

INSERT TABLE 6 ABOUT HERE

INSERT TABLE 7 ABOUT HERE

Results from the regression analysis shows that Communitarian, Darwinian and Missionary identities have a statistically significant and positive relationship with causation behavior (Table 6). These results hold when the focal study variables (i.e. identities) are entered separately as well as jointly. Concerning effectuation, the Communitarian identity shows a significant and positive relationship with effectuation, when entered both separately and jointly with Communitarian and Missionary identities (Table 7). When entered separately, neither the Missionary nor the Darwinian identify variables have a significant relationship with effectuation behavior. However, when entered jointly, Table 7 shows that Darwinian and Missionary identities have a negative and significant relationship with effectuation behavior. These empirical results offer full support to hypotheses 1 and 2. Hypothesis 3 is only partly supported as it was hypothesized that founders with a Missionary identity would have a positive

and significant relationship with causation behavior (supported) and with effectuation behavior (not supported).

The most striking result for the control variables is the strong, positive and significant relationship between uncertainty and effectuation. Uncertainty is not significantly related to causation in our analysis. Our analysis offers clear support for the initial theorizing that founders pursue an effectuation approach to new business creation in the presence of higher uncertainty.

Since the identity variables are positively correlated to each other, as suggested in theory and shown in the correlation matrix, we explored possible statistical problems related to multicollinearity using the VIF statistic. The VIF statistics were never higher than 1.4, suggesting that multicollinearity is not a problem in the regression analyses. At the same time it needs to be acknowledged that entrepreneurial identities can interact in complex ways, also with key control variables like prior experience, education and uncertainty. Such interaction patterns are difficult to do full justice to in a cross-sectional regression analysis. The regression analyses therefore mainly point to some key simplified relationships between entrepreneurial identities and causation/effectuation behaviour of founders.

Discussion

This paper has aimed at advancing new knowledge of the relationship between the type of social identity of an entrepreneur and the entrepreneurial behaviour. The results confirm that the entrepreneurial identity influences whether the individual engages in predominantly effectual or causal behaviour. Based on the qualitative data and previous literature we developed three

hypotheses suggesting that the social identity of an entrepreneur (Darwinian, Missionary, and Communitarian) is connected to the entrepreneurial behaviour (causal/effectual). The results confirm that Darwinians engage in causal behaviour, and that the Communitarians engage in effectual behaviour, as we hypothesised based on previous research and our qualitative pilot study. However, the results suggest that the Missionaries follow predominantly the causal logic, contrary to our hypothesis suggesting a mixed behaviour. On the other hand, Fauchart and Gruber's (2011) profiling of the Missionary identity provides a relatively good explanation for this. The Darwinians and Missionaries are similar in aiming for a priori defined goal, even if highly different ones. For the Darwinians the goal is to make profit and be successful in the competition. For the Missionaries the goal is to advance a social cause and the success is derived from being able to reach this goal. Contrary to our hypothesis, this goal orientation seems to influence behaviour strongly towards prediction, and hence the focus on competitors and expected returns seem to be interpreted into this framework, despite their low focus on monetary aims. Therefore, in both cases the end goal is set but the means how this goal can be achieved, can vary. Hence, despite marked differences in motivation, basis for evaluation and frame of reference, the Darwinian and Missionary identities are both goal oriented leading them to follow similar approaches in the start-up process focusing on achieving specific goals and planning their way to get there.

On the contrary, Communitarian entrepreneurs have the aim of serving their community of which they are part. In line with the idea of user entrepreneurs (Shah and Tripsas 2007), they may start with themselves and the needs they identify as part of their social community and then work from there as a response to the requests and feedback coming from the community. They base their behaviours on preferences for particular processes rather than for any particular consequences that the preferred processes may lead to (Sarasvathy and Dew 2005, 394).

However, our findings indicate also that the Communitarians while relying on effectuation also rely strongly on causal behaviour. Based on our qualitative study, we interpret this as a result of the strong focus on causal behaviour as the institutionalized way to start-up a business, leading all entrepreneurs identifying strongly with one or another entrepreneurial identity to tend to adopt certain causal behaviours. This is also reflected in the quantitative analysis, which shows that scoring higher on at least one type of identity (Missionary, Darwinian or Communitarian) is associated with causal behaviour, implying that such behaviour increases with stronger entrepreneurial identity. Hence, even Communitarian entrepreneurs, who base their businesses on their own interests and social relationships rather than on future goals, adopt causal behaviours in addition to effectual behaviours in starting the business.

This study represent one of the first efforts to examine the relationship between the social identity of the entrepreneur and the extent to which he or she takes on effectual and causal behaviours in the start-up process. The results point strongly to a relationship between identity and behaviour. Hence, effectual and causal behaviour is not only shaped through education and experience, as previously suggested (Dew, Read, et al. 2009; Sarasvathy 2008), but also based in the social identity of the entrepreneur. Hence, instead of following a learned logic or process, they base their behaviours on preferences for particular processes or ways of living or deciding (Sarasvathy and Dew 2005). These findings contribute to the understanding of antecedents of effectual and causal entrepreneurial behaviour (Perry et al. 2012). Further, the findings from this study also acknowledge the point put forward by Fauchart and Gruber (2011) that entrepreneurs vary in terms of social identity, and show that these variations have consequences for how entrepreneurs behave in the start-up process.

These findings have several important implications. First, they show the importance of acknowledging the variations in entrepreneurs aspirations related to firm start-ups. These variations imply that policy makers and advisors seeking to encourage more high quality new firms should not assume that all entrepreneurs are mainly motivated by profits and act thereafter. Instead, motivational structures are varied, and consequently the behaviours that are the most rational vary depending on the identity of the entrepreneur, including his/her motives. Failure to take this into account may lead to inadequate advice and incitements directed towards entrepreneurs, and hence poorer results of the initiatives made. Further, entrepreneurial training programmes focus mostly on assisting the entrepreneurs to develop their business ideas and related business plans. However, since the entrepreneurial identity is such a key element in the entrepreneurship process, the programmes would benefit from placing more focus on assisting the potential entrepreneurs in entrepreneurial identity work, for searching their authentic entrepreneurial identity (Lewis 2013) in unison with the idea and business development (Hägg 2011).

Despite important findings, one should also be aware of the limitations related to this study. First, our analyses are based on the original typology of Fauchart and Gruber (2011) on three social entrepreneurial identities: Darwinian, Missionary, and Communitarian, representing only one way of differentiating between different types of identity. In this study, we have empirically validated that they are three distinct social identities that influence entrepreneurial behaviour. However, as individuals can identify simultaneously as many (hybrid identities as suggested by Fauchart and Gruber, 2011), future research should pay more attention to the implications this has for their behaviours as it might give further insight into the relative strength of the identities in terms of behaviour. Hence, future studies could be extended to include hybrid identities. Furthermore, as pointed out by the literature review, the role identity theory has been influential

in entrepreneurship research and future studies are needed to investigate the relationship between entrepreneurial role identities and behaviour. Moreover, future studies should also examine other aspects related to entrepreneurial identity and their relationship with effectual and causal behaviour, such as family-business identity (Shepherd and Haynie 2009) and heroic vs. humane entrepreneurial identity (Hytti and Heinonen 2013).

The limitations with a cross-sectional study in determining the directions of the relationships are well known. We will argue that social identities are more stable than behaviour, and hence that it is most probable that identity is influencing behaviour as suggested in our hypotheses, and not the other way around. Moreover, by applying mixed methods approach and its ability to triangulate between qualitative and quantitative data provided us an opportunity for presenting a greater diversity of views and stronger findings (Molina-Azorín et al., 2012), including the directions of the relationships. Nevertheless, further studies adopting longitudinal approaches are needed to verify the results. Longitudinal studies can also examine variations in behaviour and identity over time. It has been suggested that entrepreneurs use effectual approaches in the early stages of the business start-up, but that they may rely on more causal approaches when the firm is established on the market and uncertainty is reduced (Sarasvathy 2008). Our findings indicate that identity shapes behaviour beyond the behavioural differences related to environmental uncertainty and expert knowledge. The strong relationship between perceived uncertainty and effectuation is to be expected from theory (Sarasvathy 2001; 2008; Wiltbank et al. 2009) and also preciously found empirically (Alsos, et al. 2014; Chandler et al 2011). Although there is no evidence from the study reported here, of a relationship between identity and how entrepreneurs perceive uncertainty, the findings raise interesting question about the interactions over time between identity, behaviour and perceptions of uncertainty.

Further studies are needed to examine the dynamic relationship between identity and effectual and causal behaviours including how identity influences the development of identity over time.

Moreover, existing research also suggests that the entrepreneurial identity is not stable and fixed but emergent (Leitch, Harrison, and McMullan 2013). As entrepreneurs, to varying extent, may develop their entrepreneurial identity over time (Jain et al. 2009), it would be interesting to study if the changes takes place within the social identities or if indeed an individual can change from one social identity category into another one (Fauchart & Gruber, 2011) as the venture unfolds. Similarly, it would be interesting to conduct follow-up studies trying to investigate if the entrepreneurial behaviour changes along with the changes in the identity. Additionally, Nielsen and Lassen (2012) argue that not only can identity influence behaviour but that entrepreneurial action can also influence the identity development of the entrepreneur. When individuals begin to act as entrepreneurs, they also come to reflect upon who they are and are not as entrepreneurs.

References

- Alsos, G. A., and T. H. Clausen. 2014. "The start-up processes of tourism firms - the use of causation and effectuation strategies." In *Handbook of Research on Innovation in Tourism*, edited by G. A. Alsos, D. Eide and E. L. Madsen. Cheltenham, UK: Edward Elgar.
- Alsos, G. A., T. H. Clausen, and S. Solvoll. 2014. "Towards a Better Measurement Scale of Causation and Effectuation." Paper presented at *Academy of Management Meeting*. Philadelphia, PA.

- Alsos, G. A., D. Eide, and E. L. Madsen. 2014. "Introduction: Innovation in tourism industries." In *Handbook of Research on Innovation in Tourism Industries*, edited by G. A. Alsos, D. Eide and E. L. Madsen, 1-26. Cheltenham, UK: Edward Elgar Publishing.
- Ashforth, B. E., S. H. Harrison, and K. G. Corley. 2008. "Identification in organizations: An examination of four fundamental questions." *Journal of Management* 34 (3):325-74.
- Ateljevic, I., and S. Doorne. 2000. "'Staying Within the Fence': Lifestyle Entrepreneurship in Tourism." Review of. *Journal of Sustainable Tourism* 8 (5):378-92.
- Bacq, S., and F. Janssen. 2011. "The multiple faces of social entrepreneurship: A review of definitional issues based on geographical and thematic criteria." *Entrepreneurship & Regional Development* 23 (5-6):373-403.
- Brown, R. 2000. "Social identity theory: Past achievements, current problems and future challenges." *European Journal of Social Psychology* 30 (6):745-78.
- Burke, P. J., and D. C. Reitzes. 1981. "The Link Between Identity and Role Performance." *Social Psychology Quarterly* 44 (2):83-92.
- Cardon, M. S., R. Sudek, and C. Mitteness. 2009. "The impact of perceived entrepreneurial passion on angel investing " *Frontiers of Entrepreneurship Research* 29 (2):Article 1
Available at: <http://digitalknowledge.babson.edu/fer/vol29/iss2/1>.
- Chandler, G. N., D. R. DeTienne, A. McKelvie, and T. V. Mumford. 2011. "Causation and effectuation processes: A validation study." *Journal of Business Venturing* 26 (3):375-90..
- Chasserio, S., P. Pailot, and C. Poroli. 2014. "When entrepreneurial identity meets multiple social identities: Interplays and identity work of women entrepreneurs." *International Journal of Entrepreneurial Behaviour & Research* 20 (2):128-54.
- Coupland, C., and A. D. Brown. 2012. "Identities in action: Processes and outcomes." *Scandinavian Journal of Management* 28 (1):1-4.

- Davidsson, P. 2003. "The domain of entrepreneurship research: some suggestions." In *Cognitive approaches to entrepreneurship research*, edited by J. A. Katz and D. A. Shepherd, 315-72. Oxford: Elsevier Science.
- . 2008. *The entrepreneurship research challenge*. Cheltenham, UK: Edward Elgar
- Davidsson, P., and B. Honig. 2003. "The role of social and human capital among nascent entrepreneurs." *Journal of Business Venturing* 18 (3):301-31.
- Dew, N., S. Read, S. D. Sarasvathy, and R. Wiltbank. 2009. "Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices." *Journal of Business Venturing* 24 (4):287-309.
- Dew, N., and S. Sarasvathy. 2007. "Innovations, Stakeholders & Entrepreneurship." *Journal of Business Ethics* 74 (3):267-83.
- Dew, N., S. D. Sarasvathy, S. Read, and R. Wiltbank. 2009. "Affordable loss: behavioral economic aspects of the plunge decision." *Strategic Entrepreneurship Journal* 3 (2):105-26.
- Di Domenico, M., and G. Miller. 2012. "Farming and tourism enterprise: Experiential authenticity in the diversification of independent small-scale family farming." *Tourism Management* 33 (2):285-94.
- Down, S. 2006. *Narratives of enterprise: Crafting entrepreneurial self-identity in a small firm*. Cheltenham, UK: Edward Elgar.
- Down, S., and L. Warren. 2008. "Constructing narratives of enterprise: clichés and entrepreneurial self-identity." *International Journal of Entrepreneurial Behaviour & Research* 14 (1):4-23.
- Erzberger, C., and G. Prein. 1997. "Triangulation: Validity and empirically-based hypothesis construction." *Quality & Quantity* 31 (2):141-54.

- Essers, C., and Y. Benschop. 2007. "Enterprising identities: female entrepreneurs of Moroccan or Turkish origin in the Netherlands." *Organization Studies* 28 (1):49-69.
- . 2009. "Muslim business women doing boundary work: The negotiation of Islam, gender and ethnicity within entrepreneurial contexts." *Human Relations* 62 (3):403-23.
- Falck, O., S. Heblich, and E. Luedemann. 2012. "Identity and entrepreneurship: do school peers shape entrepreneurial intentions?" *Small Business Economics* 39 (1):39-59.
- Farmer, S. M., X. Yao, and K. Kung-Mcintyre. 2011. "The Behavioral Impact of Entrepreneur Identity Aspiration and Prior Entrepreneurial Experience." *Entrepreneurship Theory and Practice* 35 (2):245-73.
- Fauchart, E., and M. Gruber. 2011. "Darwinians, Communitarians, and Missionaries: The Role of Founder Identity in Entrepreneurship." *Academy of Management Journal* 54 (5):935-57.
- Fisher, G. 2012. "Effectuation, Causation, and Bricolage: A Behavioral Comparison of Emerging Theories in Entrepreneurship Research." *Entrepreneurship Theory and Practice* 36 (5):1019-51.
- Gabrielsson, J., and D. Politis. 2011. "Career motives and entrepreneurial decision-making: examining preferences for causal and effectual logics in the early stage of new ventures." *Small Business Economics* 36 (3):281-98.
- Gartner, W. 1988. "Who is an entrepreneur? is the wrong question." Review of. *American Journal of Small Business* 12 (1):11-31.
- Gartner, W. B., and N. M. Carter. 2003. "Entrepreneurial behavior and firm organizing processes." In *Handbook of Entrepreneurship Research*, edited by Z. J. Acs and D. B. Audretsch, 195-221. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Goel, S., and R. Karri. 2006. "Entrepreneurs, Effectual Logic, and Over-Trust." *Entrepreneurship Theory and Practice* 30 (4):477-93.

- Harms, R., and H. Schiele. 2012. "Antecedents and consequences of effectuation and causation in the international new venture creation process." *Journal of International Entrepreneurship* 10 (2):1-22.
- Hessels, J., M. van Gelderen, and R. Thurik. 2008. "Entrepreneurial aspirations, motivations, and their drivers." *Small Business Economics* 31 (3):323-39.
- Hoang, H., and J. Gimeno. 2010. "Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding." *Journal of Business Venturing* 25 (1):41-53.
- Hurmerinta-Peltomäki, L., and N. Nummela. 2006. "Mixed methods in international business research: A value-added perspective." *Management International Review* 46 (4):439-59.
- Hytti, U. 2005. "New meanings for entrepreneurs: from risk-taking heroes to safe-seeking professionals." *Journal of Organizational Change Management* 18 (6):594-611.
- Hytti, U., and J. Heinonen. 2013. "Heroic and humane entrepreneurs: identity work in entrepreneurship education." *Education+ Training* 55 (8/9):10-.
- Hägg, O. 2011. *Yrittäjyysvalmennus ja yrittäjäidentiteetti. [Entrepreneurship training and entrepreneurial identity], Acta Universitatis Tamperensis; Dissertation, 1618.* Tampere: Tampere University Press.
- Howorth, C., S. Tempest, and C. Coupland 2005. "Rethinking entrepreneurship methodology and definitions of the entrepreneur." *Journal of small Business and Enterprise development* 12 (1): 24-40.
- Jain, S., G. George, and M. Maltarich. 2009. "Academics or entrepreneurs? Investigating role identity modification of university scientists involved in commercialization activity." *Research Policy* 38 (6):922-35.

- Johansson, A. W. 2004. "Narrating the entrepreneur." *International Small Business Journal* 22 (3):273-93.
- Jones, R., J. Latham, and M. Betta. 2008. "Narrative construction of the social entrepreneurial identity." *International Journal of Entrepreneurial Behaviour & Research* 14 (5):330-45.
- Kasperova, E., and J. Kitching. 2014. "Embodying entrepreneurial identity." *International Journal of Entrepreneurial Behaviour & Research* 20 (5):3-.
- Klyver, K., and D. Foley. 2012. "Networking and culture in entrepreneurship." *Entrepreneurship & Regional Development* 24 (7-8):561-88.
- Kraaijenbrink, J., T. Ratinho, and A. Groen. 2012. "Planning the unknown: the simultaneity of predictive and non-predictive entrepreneurial strategies." Paper presented at *Babson College Entrepreneurship Research Conference*. Fort Worth, TX, 6-9 June 2012.
- Leitch, C., R. T. Harrison, and C. McMullan. 2013. "The construction of entrepreneurial identity: A dialogic process perspective." Paper presented at *Babson College Entrepreneurship Research Conference*. Lyon, 7-10 June 2013.
- Lewis, P. 2013. "The search for an authentic entrepreneurial identity: difference and professionalism among women business owners." *Gender, Work & Organization* 20 (3):252-66.
- Lindgren, M. 2000. "Kvinnor i friskolor – Om kön, entreprenörskap och profession i identitetskapandet." In *Rapport från FEM-gruppen, FSF 2000:3*, . Örebro: Forum för småföretagsforskning.
- Mathias, B. D., and D. W. Williams. 2014. "The Impact of Role Identities on Entrepreneurs' Evaluation and Selection of Opportunities." *Journal of Management*: forthcoming.

- Mills, C., and K. Pawson. 2011. "Integrating motivation, risk-taking and self identity: A typology of ICT enterprise development narratives." *International Small Business Journal*
- Molina-Azorín, J. F., M. D. López-Gamero, J. Pereira-Moliner, and E. M. Pertusa-Ortega. 2012. "Mixed methods studies in entrepreneurship research: Applications and contributions." Review of. *Entrepreneurship & Regional Development* 24 (5-6):425-56.
- Morgan, DL. 2007. Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods. *Journal of Mixed Methods Research*, 1(1): 48-76.
- Murnieks, C. Y., E. Mosakowski, and M. S. Cardon. 2012. "Pathways of Passion: Identity Centrality, Passion, and Behavior Among Entrepreneurs." *Journal of Management*.
- Nielsen, S., and A. Lassen. 2012. "Identity in entrepreneurship effectuation theory: a supplementary framework." *International Entrepreneurship and Management Journal* 8 (3):373-89.
- Perry, J. T., G. N. Chandler, and G. Markova. 2012. "Entrepreneurial Effectuation: A Review and Suggestions for Future Research." *Entrepreneurship Theory and Practice* 36 (4):837-61.
- Powell, E. E., and T. Baker. 2012. "Aspirations, behaviors and commitments: Social identity and entrepreneurial resilience." *Frontiers of Entrepreneurship Research* 32 (4):2.
- Read, S., M. Song, and W. Smit. 2009. "A meta-analytic review of effectuation and venture performance." *Journal of Business Venturing* 24 (6):573-87.
- Ren, C. R., and C. Guo. 2011. "Middle Managers' Strategic Role in the Corporate Entrepreneurial Process: Attention-Based Effects." *Journal of Management* 37 (6):1586-610.

- Sarasvathy, S. D. 2001. "Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency." *The Academy of Management Review* 26 (2):243-63.
- . 2008. *Effectuation: Elements of Entrepreneurial Expertise, New Horizons in Entrepreneurship*. Cheltenham, UK: Edward Elgar.
- Sarasvathy, S. D., and N. Dew. 2005. "Entrepreneurial logics for a technology of foolishness." *Scandinavian Journal of Management* 21 (4):385-406.
- . 2013. "Without judgment: An empirically-based entrepreneurial theory of the firm." *The Review of Austrian Economics* 26 (3):277-96.
- Sarasvathy, S. D., H. A. Simon, and L. Lave. 1998. "Perceiving and managing business risks: Differences between entrepreneurs and bankers." *Journal of Economic Behavior & Organization* 33 (2):207-25.
- Shah, S. K., and M. Tripsas. 2007. "The accidental entrepreneur: the emergent and collective process of user entrepreneurship." *Strategic Entrepreneurship Journal* 1 (1-2):123-40.
- Shane, S., E. A. Locke, and C. J. Collins. 2003. "Entrepreneurial motivation." *Human Resource Management Review* 13 (2):257-79.
- Shepherd, D., and J. M. Haynie. 2009. "Family Business, Identity Conflict, and an Expedited Entrepreneurial Process: A Process of Resolving Identity Conflict." *Entrepreneurship Theory and Practice* 33 (6):1245-64.
- Steyaert, C. 2007. "'Entrepreneurship' as a conceptual attractor? A review of process theories in 20 years of entrepreneurship studies." *Entrepreneurship and Regional Development* 19 (6):453-77.
- Stryker, S., and P. J. Burke. 2000. "The past, present, and future of an identity theory." *Social Psychology Quarterly*:284-97.

- Stuart, R. W., and P. A. Abetti. 1990. "Impact of entrepreneurial and management experience on early performance." *Journal of Business Venturing* 5 (3):151-62.
- Ucbasaran, D., G. A. Alsos, P. Westhead, and M. Wright. 2008. "Habitual entrepreneurs." *Foundations and Trends in Entrepreneurship* 4 (4):309-450.
- Ucbasaran, D, Westhead, P, & Wright, M. 2009. The extent and nature of opportunity identification by experienced entrepreneurs. *Journal of Business Venturing*, 24(2): 99-115.
- Van Gelderen, M., and P. Jansen. 2006. "Autonomy as a start-up motive." *Journal of Small Business and Enterprise Development* 13 (1):23-32.
- Van Praag, C. M. 1999. "Some classic views on entrepreneurship." *De economist* 147 (3):311-35.
- Varamäki, E., and J. Vesalainen. 2003. "Modelling different types of multilateral co-operation between SMEs." *Entrepreneurship & Regional Development* 15 (1):27-47.
- Warren, L. 2004. "Negotiating entrepreneurial identity. Communities of practice and changing discourses." *The International Journal of Entrepreneurship and Innovation* 5 (1):25-35.
- Watkins-Mathys, L & Lowe, S. 2005. Small Business and Entrepreneurship Research: The Way Through Paradigm Incommensurability. *International Small Business Journal*, 23(6): 657-77.
- Watson, T. J. 2009. "Entrepreneurial Action, Identity Work and the Use of Multiple Discursive Resources The Case of a Rapidly Changing Family Business." *International Small Business Journal* 27 (3):251-74.
- Watson, T. J. 2013. "Entrepreneurship in action: bringing together the individual, organizational and institutional dimensions of entrepreneurial action." *Entrepreneurship & Regional Development* 25 (5-6):404-22.

- Wells, L. E. 1978. "Theories of deviance and the self- concept." *Social Psychology Quarterly* 41:189-204.
- Westhead, P., and M. Wright. 2000. "Introduction." In *Advances in entrepreneurship*, edited by P. Westhead and M. Wright, xii-xcvi. Cheltenham, UK: Edward Elgar.
- Wiltbank, R., N. Dew, S. Read, and S. D. Sarasvathy. 2006. "What to do next? The case for non-predictive strategy." *Strategic Management Journal* 27 (10):981-98.
- Wåhlin, N. 1999. "Reflexive Identity Creation through Boundary Spanning and Boundary Crossing." In *Images of Entrepreneurship and Small Business - Emergent Swedish Contributions to Academic Research*, edited by B. Johannisson and H. Landström, 115-40. Lund, Sweden: Studentlitteratur.

Table 1 Overview of cases of qualitative pilot study

Case	Entrepreneurs	Experience of entrepreneur(s)	Length of interview
A: Mountain guiding	Woman and man (married couple) in their 30s (both interviewed)	Woman business education Man education and long experience as mountain guide	2 h 10 min
B: Bus tour packages	Woman in her 40s	Work experience from business in related area	1 h 50 min
C: Surf park	Two men in their 30s (both interviewed)	Various experience, including entrepreneurial experience	45 min
D: Health tourism	Two women and one man in their 30s (one woman interviewed)	Formal education and work experience from health sector	2 h 5 min
E: Experience Cafe	Woman in her 60s	Various work experience	25 min
F: Organic cheese production, bakery and café	Woman and man (married couple) in their 50s (man interviewed)	Experience as farmers with organic production	55 min

Table 2 Analysis of qualitative data with examples of quotes

START-UP	ENTREPRENEURIAL IDENTITY	ENTREPRENEURIAL BEHAVIOUR
Mountain guiding	<p>Communitarian</p> <p>a1 <i>"We don't do this to get rich ... There are these types of firms in USA, Canada and so many other places where I have been mountain climbing or skiing ... this is just the things I have been doing, and I thought 'it works there, why not here?'"</i> (basic social motivation)</p> <p>a2 <i>"We understand what the customers want because ... they are part of the community. There are many common references"</i> (Basis of self-evaluation)</p> <p>a3 <i>"Location ... it was about finding the right culture and the right community and the right people too. This is the decisive factor at the end. Maybe this is not the best location for business, but the community here is very positive to us ... we belong here. That is important"</i> (frame of reference)</p>	<p>Mainly effectual</p> <p>A1: <i>[investments] we have made smart choices in many ways ... we invest in some equipment, but we use a lot of stuff we already have ... everything you see here is something we have received or made ourselves. I work with [equipment producers], and they have given us equipment to try out"</i> (Affordable loss)</p> <p>A2 <i>"The first summer I just went around with my hiking equipment and with a poster saying 'Guide. Call me! I can take you where you want'"</i> (Control)</p> <p>A3 <i>"N [equipment producer] sponsors S [male ent.] as ambassador ... they give us things, and now he has become the brand for our firm. They give us publicity ... and cuts our costs"</i> (Pre-commitment)</p>
Bus tour packages	<p>Darwinian</p> <p>b1 <i>"I am born a strategist, I think. I love to work with strategy, to work with routines ... I love to sit in the office and make plans and Excel sheets with various calculations"</i> (basis of self-evaluation)</p> <p>b2 <i>"the ambition is to have a turn-over on 5 million NOK in five years ... my ambitions are quite high. My vision is that we after some time have several employees and are active in the market"</i> (basic social motivation)</p>	<p>Mainly causal</p> <p>B1 <i>"... we have listed pros and cons ... on many types of models. We ended by deciding that the smartest thing to do was [the chosen model]"</i> (Prediction)</p> <p>B2 <i>"I have made budgets for five years forward ... it is hard to predict, but one must anyway have an idea on 'if we achieve this sales turn over, what will we then earn, and what will we need to invest?"</i> (Expected return)</p> <p>B3 <i>"We have a business plan. I have worked with it the full fall ... We will not try several business models. We have thought out one, and I still think this is the right one."</i> (Pre-existing knowledge)</p> <p>B4 <i>"We monitor our competitors ... watch what they do, their prices and their products. If many sell the same products, we can make something different"</i> (Competitive analysis)</p>
Surf park	Communitarian, with some missionary	Mainly effectual with some causal

	<p>c1 <i>"To make a new experience here and to be able to do what we really like best. That is the motivation behind our business ... We do it because we want to change our lifestyle, we are going to surf every day."</i> (basic social motivation, communitarian)</p> <p>c2 <i>"It is a special project, if you don't understand, you will think we are crazy ... it is going to be coming people from all over the world ... we could really change the city"</i> (basic social motivation, missionary)</p> <p>c3 <i>"In this city, there is no place facilitated for surfing ... we want to make such a place. To make surfing a popular activity, and to be able to do what we enjoy the most"</i> (frame of reference, communitarian)</p>	<p>C1 <i>"We take the persons that we believe on in our team, that will help us in the end ... we choose the people we believe in."</i> (Pre-commitment)</p> <p>C2 <i>"We have the idea which is what we believe in, so we can't just change our plan because something else is giving more money."</i> (starting with end, but ends based on "who I am")</p> <p>C3 <i>"The beginning is a lot of business plan and budgeting and that stuff we don't have knowledge about ... That is why we contacted [consultancy firm] to help us ... but they couldn't help us if we didn't have the knowledge and the experience ..."</i> (Starting with means, but needs business plan to get investors involved, and gets help to make it)</p>
Health tourism	<p>Missionary, with some Darwinian</p> <p>d1 <i>"The background for this start-up was that this building came up for sale ... and with the aim and the ideas we had about how to use our future, this became our opportunity to realize our idealistic perspectives and at the same time create our own jobs"</i> (basic motivation, missionary and Darwinian)</p> <p>d2 <i>"Of course we must think on making money, but we have other perspectives too ... we may be a bit atypical as a business since it is so much idealism in it"</i> (basis of self-evaluation, missionary)</p>	<p>Combining causation and effectuation</p> <p>D1 <i>"We have a clear vision for what we are doing. We do."</i> (Ends orientation)</p> <p>D2 <i>"[we will go there but we will develop gradually] since we have not tried this before ... but we start based on where we have our competence, so that we can reach our goals sooner"</i> (Combination of means and ends orientation)</p> <p>D3 <i>"We have a strategy, but it is more connected to an ideal [than to achieving budgets] ... so it is not so fixed"</i> (pre-existing knowledge with some flexibility)</p> <p>D4 <i>"We have a flexible model as a starting-point ... we know that we will take different types of groups with different needs, but the business model will be the same ... we experiment with the thought of different products and models, but in practice we work towards an escalation plan ..."</i> (Limited contingencies, with a clear vision of the end)</p>
Experience café	<p>Communitarian</p> <p>e1 <i>"I have owned this house for many years ... as years have passed, a thought has grown in me that when I retire I will do this, and now I am realizing my dream"</i> (basic social motivation)</p> <p>e2 <i>"The café is the central idea. Additionally I really want to show them the house and the things that have always been here ..."</i></p>	<p>Mainly effectual</p> <p>E1 <i>"I will utilize the opportunities that come along, get new ideas, develop ideas and not being locked into anything"</i> (Leveraging contingencies)</p> <p>E2 <i>"Locally there is a special type of berry growing in the mountain. I pick them, and then I have agreed with R [woman running soap factory] to make soaps out of them"</i> (Means orientation, pre-commitment)</p>

	<p><i>including a large quantity of handicraft and needlework ... a handicraft museum in the attic" (basis of self-evaluation)</i></p>	<p>E3 <i>"This issue with financial return is probably something I ought to think more on. But I don't ... Of course I want to make money ... but I also want to have a good time" (Not expected return, more based on means (who I am))</i></p>
<p>Organic cheese production, bakery and café</p>	<p>Missionary, with some Communitarian</p> <p>f1 <i>"for us, the ecological aspect is very important ... we are organic, we are vegetarian, we are local food, we are 100 % basic food" (frame of reference, missionary)</i></p> <p>f2 <i>" ... to us it is not only about making money, it is also about contributing to the local community ... to create jobs here at [the island] and make it a good place to live." (basic social motivation, missionary)</i></p> <p>f3 <i>"The local community here at [the island] have been very important for us starting-up like this." (basis of self-evaluation, missionary)</i></p> <p>f4 <i>"It is about the cheese, really. I want to create cheeses with character ... that is number one for me." (basis social motivation, communitarian)</i></p>	<p>Combining causation and effectuation</p> <p>F1 <i>"We have a business plan ... but I have not looked at it one single day ... it is more about meeting people and learning 'oh, this is not what they want, they want it that way instead' ... it has been more gut feeling than calculations" (control, experimentation)</i></p> <p>F2 <i>"We easily get in touch with people who tells us about their experiences [which gives ideas for new products] ... but people also ask us about recipes ... so it becomes mutual interaction" (pre-commitment)</i></p> <p>F3 <i>We have [a goal] which we aim for – where we will go. Then we try to get the resources needed, particularly competences ... we create and use the network, among customers, other producers and distributors ... we try to have a dialogue to see if we are on track ... we use the feedback we receive" (Ends orientation, but with some flexibility)</i></p> <p>F4 <i>"We absolutely starts with the resources at hand ... but we have a relatively clear end goal ... at least a clear vision" (Ends, but also means)</i></p>

Table 3 Measurement of identity

Identity type	Measurement items	Cronbach's alpha
Darwinian	<ul style="list-style-type: none"> - The opportunity to create economic value and to create personal wealth over time has been an important driving force - To me, the focus on profitability is the most important - To me, success is that my business shows better financial performance compared to competitors. 	0.73
Communitarian	<ul style="list-style-type: none"> - My main motivation is related to offering a good and novel product that I know people have use for - To me, to be true to the original idea and deliver products of high quality to our customer segments, is most important - To me, success is that our products work well for those that are supposed to use them 	0.76
Missionary	<ul style="list-style-type: none"> - My main motivation is that through my firm, I can pursue values that are important to me or a particular cause (for example social, sustainability, or other) - To me, success is that the firm can contribute to changes that make society a better place. - It is important to me that we manage to show that there are other and better ways to do things in accordance with our values 	0.86

Table 4 Descriptive statistics

	Min	Max	Mean	Std.dev
Causation	1	7	4.76	1.15
Effectuation	1	7	3.72	1.37
Uncertainty	1	7	3.29	1.27
Education level	1	4	3.08	0.88
Prior experience	1	7	4.93	1.25
Team	0	1	0.47	0.50
Age	1	7	5.52	1.28
Darwinian	1	7	4.70	1.32
Communitarian	1	7	5.71	1.21
Missionary	1	7	4.49	1.59
N=338-349				

Table 5 Correlation matrix

	1	2	3	4	5	6	7	8	9	10
(1) Causation	1									
(2) Effectuation	.02	1								
(3) Uncertainty	.07	.48	1							
(4) Education level	-.15	-.13	-.07	1						
(5) Prior experience	.18	-.15	-.13	-.05	1					
(6) Team	.13	-.05	-.05	.02	.06	1				
(7) Age	.02	-.04	-.05	-.08	-.13	-.12	1			
(8) Darwinian	.43	.00	.13	-.20	.24	.13	-.07	1		
(9) Communitarian	.41	.16	.08	-.20	.03	.11	.13	.28	1	
(10) Missionary	.29	-.00	.07	-.06	.03	.08	.11	.12	.46	1

Significant correlations (at the 0.05 level or less) in **bold**.

Table 6 Regression analysis of causation behavior (unstandardized coefficients)

	Causation	Causation	Causation	Causation	Causation
Constant	3.70	2.43	1.71	3.10	.91
Uncertainty	.08*	.03	.06	.07	.02
Education level	-.19**	-.10	-.09	-.17**	-.05
Prior experience	.18***	.10**	.17***	.17***	.11**
Team	.31**	.20*	.18	.25**	.11
Age	.06	.06	.01	.03	.01
Darwinian		.35***			.28***
Communitarian			.37***		.28***
Missionary				.20***	.08**
R²	8 %	21%	22%	15%	32%
N	327	326	326	326	324

*** sig at the 0.01 level

** sig at the 0.05 level

* sig at the 0.1 level

Table 7 Regression analysis of effectuation behavior (unstandardized coefficients)

	Effectuation	Effectuation	Effectuation	Effectuation	Effectuation
Constant	3.34	3.60	2.67	3.50	3.11
Uncertainty	.49***	.50***	.48***	.49***	.50***
Education level	-.17**	-.18**	-.14*	-.16**	-.15*
Prior experience	-.09*	-.08	-.10*	-.10*	-.08
Team	-.08	-.08	-.13	-.08	-.11
Age	-.04	-.05	-.05	-.03	-.06
Darwinian		-.06			-.10*
Communitarian			.13**		.19***
Missionary				-.04	-.10**
R²	25%	26%	26%	25%	28%
N	327	326	326	326	324

*** sig at the 0.01 level

** sig at the 0.05 level

* sig at the 0.1 level