

RESEARCH ARTICLE

Interactions and entrepreneurial agency; a relational view of entrepreneurs' control cognitions

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Abstract

This paper is about the relational view to control constructs and entrepreneurship. It introduces the concept 'interaction locus of control' to the study of entrepreneurial agency cognitions. We argue that a better understanding of entrepreneurial agency can be achieved by re-engaging with the psychological constructs of 'locus of control', 'personal control' and 'self-efficacy'. We argue that typically, control constructs neglect how the agent is socially situated. In contrast, our theorizing sheds conceptual light on the situated and relational nature of entrepreneurs' agency cognition, and presents a case for social interaction as a locus of control.

We analyze agency cognitions in comparative survey data generated in 2001, 2006 and 2012 among farmers and small business owners in Finland ($n = 2771$). Results show that interaction locus of control correlated positively with personal control, self-efficacy and internal locus of control, but unlike the latter variables, it did not have negative correlations with external loci of control. Furthermore, belief in interaction locus of control was significantly stronger among small business owners than among farmers, corresponding to the difference between groups in believing in one's agency in business. Our analysis demonstrates the importance of interactive loci of control in entrepreneurship. For entrepreneurs, agency is embedded in the processes of social relationships. We conclude that a more socialized psychological lens is needed to release the explanatory power of control constructs.

Keywords: Interaction, locus of control, self-efficacy, agency cognition, social psychology of entrepreneurship

1. Introduction

Common sense suggests that self-confidence strengthens an actor's pursuit of opportunity (McCann and Vroom, 2015). This notion has played an important role in theories about entrepreneurship (De Clerq and Arenius 2006, Hornaday, 1981,

Wadson, 2006). The psychology of entrepreneurship applies the concept of self-efficacy, highlighting the belief in one's own abilities and skills as a key factor in entrepreneurial intentions and success (Chell, 2008, Dalborg and Wincent, 2014, Lanero et al, 2015, Rauch and Frese, 2007b, Shane, 2003). In a similar vein, optimism

and belief in personal control in one's life (Zou et al, 2015), for example, tell us that it is beneficial, and even necessary, to believe in one's own agency. Thus, to be entrepreneurial includes thinking that 'my actions make a difference', 'I am able to do what is needed', and 'I can achieve my goals'.

One psychological concept often associated with agency beliefs and self-confidence is 'internal vs. external locus of control' (Chell, 2008, Rauch and Frese, 2007a, 2007b, Skinner, 1996). Belief in internal locus of control means that important events are seen contingent on one's own responses and capabilities (Rotter 1966). Thus, internal locus of control appears as essential grounds for self-confidence and for instrumental goal-oriented action and learning. However the issue gets complicated by the notion of external locus of control, whereby external forces, such as other actors, are believed to affect how things go for oneself. The original formulation of the construct (Rotter, 1966) places belief in internal and external control as mutually exclusive, implying that belief in external control would dilute one's self-confidence. This is perplexing, however, because it is also feasible that other actors, individual and collective, can make a difference, thus challenging a narrow individualistic view of agency. In the case of entrepreneurship, we only need to think about potential influence of customers and markets, employees, contractors, capital investors and other financiers, competitors, or public and legal authorities, to see this point. Alternatively, institutions especially informal institutions, (Williams and Vorley, 2015) challenge the idea of agency thinking as entirely individually. This suggests that seeing locus of control as entirely internal or external may be a false dichotomy.

The conceptual dilemma between internal and external control, can however be unpacked by proposing that a belief in

external control does not necessarily question the belief in internal control. The key issue is the perceived nature of external control, and especially the relation between one's own control and that of other actors. An entrepreneur's self-confidence, for example, may be grounded on the belief that he/she is able to manage and cope with the (acknowledged) external control. Such ability may take many forms, ranging for example from assimilating and adjusting, to competing, co-operating, utilizing contacts and networks, negotiating, persuading, using other social and communication skills, and so on.

In this paper it is argued, and later demonstrated, that interaction between internal and external control plays an important role in entrepreneurs' agency cognition. Whilst much of the entrepreneurship literature now accepts this proposition about the social enactment and social engagement of entrepreneurs (Drakopoulou Dodd and Anderson, 2001; Korsgaard and Anderson, 2011), the psychology of entrepreneurship has often relied too heavily on substantialist and individualistic ideas of separate entities as a basis for understanding entrepreneurs' thinking about their agency, and has not seriously challenged the Rotterian dichotomy between internal and external locus of control. Drawing on relational (Emirbayer, 1997) views, we discuss 'interaction locus of control' as a belief that one's pursuit and its outcomes are contingent on the relations and interaction processes between oneself and other actors. This study presents theoretical arguments and offer empirical data to support the claim that belief in interaction locus is highly relevant and clearly observable among entrepreneurs. The contribution thus extends arguments about the entrepreneur as a social animal (Anderson and Gaddefors, 2016) into the psychology field.

The remainder of the paper elaborates our conceptualization to argue that social interaction - relations with other agents - plays an important role in entrepreneurs' thinking about their agency. We examine the concepts of self-efficacy, locus of control and personal control, and unpack the notion of internal-external dimension proposing relational cognition's importance for understanding how external loci of control intimately connects and intertwines with personal control. Empirical data to examine this argument will be presented. The empirical section consists of statistical analyses of extensive questionnaire data collected in Finland during 2001, 2006 and 2012 from three categories: a) Small business owners representing trade, service, and industrial sectors, b) Farmers concentrating on conventional agricultural production, and c) Farmers engaged in diversified business activities.

Among these business actors, belief in interaction locus of control was measured separately in order to find out if and how it connects to commonly theorized agency cognitions, measured here as self-efficacy, internal and external loci of control, and personal control. Furthermore, we explored if belief in interaction locus of control differentiates the three categories. The categories were selected on the basis that small firm owners are often considered entrepreneurial and conventional farmers much less so (Phillipson et al., 2004, Pyysiäinen et al., 2006, Vesala & Vesala, 2010), while diversified farmers occupy a mid-point (Carter, 2001, Vesala & Peura 2003, McElwee, 2006). Thus the data makes it possible to check if such difference between groups holds true for entrepreneurship related agency cognitions such as self-efficacy, personal control, and locus of control, and if so, how does interaction locus of control appear in such comparison.

2. Agency cognitions: Personal control, self-efficacy, locus of control

Within social learning theories, belief in one's own control promotes active, persistent and optimistic striving (Bandura, 1977, 2006, Rotter, 1966). Belief that our own responses make a difference makes it worthwhile to try and to keep trying. Contrastingly, belief that our efforts have no effect on desired outcomes makes it pointless to bother. Indeed, the concept of learned helplessness (Seligman, 1975) describes when an individual lacks belief in personal control. When agency is understood as ability 'to make things happen' (Bandura, 2006), belief in one's own control is understandably seen as a necessary cognitive precondition for agency.

Skinner (1996) explains that a prototypical control construct is personal control. This construct involves the self as agent; the self's actions or behaviors as means and effected change in the social or physical environment becomes the outcome. Personal control is typically articulated by the concepts of locus of control and self-efficacy. Locus of control emphasizes reinforcement control (Rotter, 1966), focusing on one's belief in controlling outcomes, for example as success or failure. Self-efficacy draws upon on available skills, abilities and capacities, with emphasis on whether a person believes she can do what is needed to control outcomes (Bandura, 1986). Both constructs strongly connect to the personal control prototype, which covers both outcome and ability expectations (Townsend et al., 2010)

Building on his social learning theory (Rotter, 1954), Rotter introduced the locus of control concept in 1966. Originally he had approached control of reinforcements as 'freedom of movement'- the overall expectation of ability to avoid unwanted outcomes and to achieve positive outcomes (1954). He (1966: 1) defined locus of control as 'the degree to which the

individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions'. Rotter associated locus of control beliefs with cultural distinctions between chance and skill situations, whereby the control of outcomes is attributed to the actor or to external forces. Consequently belief in internal locus implies belief in personal control; whereas belief in external control implies lack of personal control. One can readily see how these notions of control appealed to entrepreneurship scholars interested in understanding agency.

Four decades later, Bandura (2006) made explicit connection between control beliefs and agency. He claims that individual differences in agency are due to the possibility of cultivating one's agentic resources. An individual's belief in her own efficacy is among such resources and Bandura (2006, 170) gives it a special significance as the foundation of personal agency:

'Among the mechanisms of human agency, none is more central or pervasive than belief of personal efficacy. This core belief is the foundation of human agency. Unless people believe they can produce desired effects by their actions, they have little incentive to act, or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to effect changes by one's actions.'

Thus, while the emphasis in locus of control is on reinforcement control, self-efficacy focuses on available skills and abilities. The concepts highlight different aspects or phases of the self-action-outcome process. Noteworthy, both Rotter and Bandura

acknowledge the role of social context in their theorizing about control and agency. Rotter (1973) stresses the interplay between situation and locus of control, while Bandura (2006) highlights the importance of social relations in agency with his concepts 'proxy agency' (using others as means to achieve goals) and 'collective agency (adjusting one's goals with those of others), for example.

3. Agency cognitions and the psychology of entrepreneurship

In the psychology of entrepreneurship, control constructs have been used to explain entrepreneurial behaviour and agency. Their utility is apparent when we consider Chell's (2000, 71) definition of being entrepreneurial; 'An entrepreneurial act is an attempt to respond to, and thereby change, a set of circumstances with a view to creating a desired outcome'. Described thus, 'entrepreneurial' resonates with agency in social learning theories. Indeed, Bandura (2006: 176) offers entrepreneurship as a special example of agency. For him, agency means 'making things happen', and belief in self-efficacy is an essential pre-requisite for this. A related psychological argument is that agency cognitions help explain entrepreneurial agency and success. Moreover, studies often compare entrepreneurs/small business owners with other groups of actors, such as managers or population at large, starting with the hypothesis that the belief in self-efficacy and/or internal control is stronger among entrepreneurs. The proposition behind such comparisons is now firmly established in the psychology of entrepreneurship.

While personal control is less popular as a concept, its components of locus of control and self-efficacy frequently appear in the entrepreneurship literature. Entrepreneurs' locus of control has typically been studied with general scales (I-E scale, LASS) and

the generalized belief in locus of control has been interpreted as a relatively fixed and enduring personality trait. Early studies (Brockhaus, 1980, Cromie & Johns, 1983, Durand & Shea, 1974, Engle et al., 1997, Gladwin et al., 1989, Hull et al., 1980, Pandey & Tewary, 1979, Perry et al., 1983, Rupkey, 1978, Scanlan, 1979, Ward, 1992) did not provide unambiguous results. Moreover, the theory has been roundly criticized alongside other theories purporting a distinct entrepreneurial personality (see e.g. Aldrich & Zimmer, 1986, Baron, 1998, Brockhaus & Horwitz, 1986, Busenitz & Barney, 1997, Carsrud & Johnson, 1989, Gatewood et al., 2002, Hisrich, 2000, Shaver, 1995, 2005). Recently however, several authors have established from meta-analyses statistically significant and consistent connections between generalized internal locus of control belief and entrepreneurial behavior (Brandstätter, 2011, Korunka et al., 2003, Rauch & Frese, 2007a, see also Baum & Locke, 2004, Cromie, 2000, Koh, 1996, Mueller & Thomas, 2001, Poon et al., 2006, Shane et al., 2003, Wijnbenga & Witteloostuijn, 2007, Zhao et al., 2005).

Differing from the locus of control tradition, Bandura's conceptualization of self-efficacy stresses situation specific cognition instead of highly generalized belief (Bandura, 1986). Usefully this has resulted in 'entrepreneurial' self-efficacy, 'the strength of an individual's belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur' (Chen et al., 1998: 301). Nevertheless in some studies, entrepreneurs' self-efficacy has been measured as a fairly general belief in one's own capabilities in performing effectively the tasks one faces (e.g. Markman et al., 2002, Poon et al., 2006). In any case, self-efficacy is seen to predict entrepreneurial intentions and success (Boid & Vozikis, 1994, Chen et al., 1998, De Noble et al., 1999, Drnovšek et al., 2010, Krueger & Dickson, 1994, Markman &

Baron, 2003, Markman et al., 2010, Shane et al., 2003, Zhao et al., 2005).

In this view of locus of control and self-efficacy, the main thing that varies is the strength of belief in one's personal control. Belief in control by other social actors is deemed external locus and therefore as something that weakens personal control. In the study of entrepreneurial self-efficacy, however, other social actors figure in identified entrepreneurial tasks. De Noble et al. (1999), for example, placed the tasks of the start-up entrepreneur into six categories: developing new product or market opportunities, building an innovative environment, initiating investor relationships, defining core purpose, coping with unexpected challenges, and developing critical human resources. (see also Chen et al. 1998). Thus, entrepreneurial self-efficacy includes belief in one's ability to manage interaction and relations with relevant social actors. A tacit assumption is that other social actors and interactions with them may influence the way things go for the entrepreneur, yet belief in this assumption is not addressed as such. What is highlighted, instead, is one's ability to tackle the tasks one faces, irrespective of the specifics of the tasks.

Such theorising on control constructs views agency in individualistic and substantialist terms; as if agency was entirely and only between the actor, her actions and the outcomes. This is too simplistic and may even be misleading. As had been common across disciplinary entrepreneurial theorising, explanatory accounts tended towards methodological individualism (Anderson et al., 2012), but a recent trend has been towards more socially situated and contextual accounts (McKeever et al., 2014, Welter, 2012). It is troubling that many papers ignore Bandura's injunction (2006: 165) that human functioning is socially situated and that consequently psychological concepts are socially

embedded. The objective in this study is thus to examine the idea of agency, manifest in control cognitions, in a relational light.

4. Interaction locus of control: towards a relational cognition in entrepreneurship

There is a problem in understanding locus of control one dimensionally. Rotter's conceptualization of locus of control, as well as his scale for measuring it (I-E scale), is based on the assumption that peoples' cognition about control is unilocal; that control is perceived either as internal or external; so that belief in internal control would exclude belief in external control and vice versa. Several authors have challenged this view. Levenson (1981) proposed that instead of internal-external, locus of control beliefs fall in three independent dimensions: internal, external: powerful others, and external: chance or luck. Some empirical studies indeed suggest that entrepreneurs tend to believe not only in internal control but also in control by powerful others (Levenson, 1981, 48, Littunen, 2000, Vesala 1991).

Nonetheless, the dichotomy of locus of control as internal or external pervaded the entrepreneurship literature (Begley and Boyd, 1998, Mueller and Thomas, 2001, Rausch and Frese, 2007a, Shane et al., 2003). Entrepreneurs characterized as having high internal locus of control appeared to offer a simple indicator to distinguish them from non-entrepreneurs. Despite the convenience, this reductionism neglects critical discussions about what Rotter's account explains as the internal-external dimension. Rotter (1966) drew attention to, but did not develop, the relationship between personal control and external forces. Accordingly, this study suggests abandoning the simplistic dichotomy 'either internal or external' and acknowledge that belief in one's own agency is fundamentally intertwined with

cognitions about the relationships between self and the social and other surrounding forces.

This view chimes well with other more recently developed socialized approaches to entrepreneurship. Theories of social embeddedness, structuration, social networks, ties and interest groups all conclude that social relations and interaction play a crucial role in entrepreneurship; demonstrating how entrepreneurial agency is embedded and constructed in and through such relations and processes (e.g. Aldrich & Zimmer, 1986, Baron & Markman, 2003, Carsrud and Johnson, 1989, Curran et al., 1992, Downing, 2005, Garud & Karnøe, 2003, Gorton, 2000, Granovetter, 1985, Jack & Anderson, 2002, McKeever et al, 2014, Koene, 2006, Stuart & Sorenson, 2005). In this study it is argued that exploring entrepreneurs' thinking through this view will contribute to the social psychological study of entrepreneurial agency cognitions. The dichotomized application of Rotter's theory represents an overly simplified version of agency-structure-relations (see Fuchs, 2001) at the cost of undermining the sophisticated explanatory power of entrepreneur's cognitions. Accordingly this study proposes social relations and interaction as a locus of control.

Theorists of causal attribution (e.g. Weiner et al, 1972) have pointed out that internal-external division is not as clear-cut as Rotter proposes. There are both internal and external causes for one's successes and failures; importantly both types of causes can be perceived as controllable or as beyond one's immediate control. Furthermore, the application of the locus of control construct has also been criticized for confusing cause with control (Ajzen, 2002, Weiner et al., 1972, Wong & Sproule, 1984). Wong and Sproule (1984) argue that conceptions of control should be seen as building on complex and multiple causal

schemas which allow for perceiving that more than one actor exert control over the outcomes one experiences. Thus, external causes, such as expertise or behavior of others, may be perceived as indicating control by powerful others and simultaneously seen as sources for one's own control. This is actually what Bandura's (2006) concept of 'proxy control' presumes. Put differently, we can see that beliefs in the external may actually support beliefs in the internal. Instead of internal or external locus of the causes of events, the key question arises about the nature of the relation between one's own control and that of others.

Wong and Sproule (1984) suggest that Rotter's internal-external division reflects an individualistic cultural thinking where the control of others is believed to prevent or challenge one's own control. Levenson (1981, 48) for example finds,

'... data from the multidimensional scales resulted in a more complex picture of people who start their own businesses – apparently they feel in control of their own lives but also have an appreciation of the fact that others exercise authority. This orientation may be related to a more realistic understanding of the forces with which entrepreneurs have to contend.'

An alternative way of thinking acknowledges the social interconnectedness of control, where one's autonomy and personal control are always balanced by external constraints: 'bilocals tend to believe in the covariation between individual effort and external influences for the outcomes' (Wong and Sproule, 1984, 327). Through a bilocal lens, control is always, to some extent shared, which adds cooperation and active participation as flavors to personal control. Indeed, Bandura's (2006) notion of collective agency, in which outcomes are perceived as

consequences of mutual adjustment of aims and coordinated actions comes close to this kind of perspective.

Paulhus and Christie (1981) address this issue by proposing a division into three different spheres of control beliefs. The most proximate sphere to the actor is that of 'problem solving' where achievements can be reached without interference by other actors. The 'interaction' sphere engages other actors, communication and interpersonal relations; while in the sphere of 'socio-political systems' the actor deals with the influence of groups, organizations, institutions and other social structures. The belief in one's own (internal) control, as well as the belief in external control by others, may vary and co-exist depending on which sphere we discuss.

Spheres of control can also be read as different loci of control, and the interaction sphere is theoretically promising. It offers a level of relations between individual actors where the coexistence of external control appears entirely compatible with the belief in personal control. One can easily imagine individual actors influencing each other, and thus control vis-a-vis the outcomes of value. In contrast, the belief that one's important life events are controlled both by oneself and by some impersonal collective or social structural forces sounds abstract, although quite possible in principle. Weber's sociological account of the Protestant Work Ethic is a case in point. For Weber (1930) entrepreneurs enact 'agentic power' to challenge social structures, such as conventional thinking and prevailing social norms (Campbell, 2009). However, it may also be noted that bilocal cognition may be based on substantialist thinking (Emirbayer, 1997). Here control is understood in terms of simultaneously active yet separate entities, e.g. individual actors or collective structures which exert influence upon

experienced outcomes and/or upon each other.

Alternatively, the interaction sphere as a locus control could be extended to offer relational cognition in which control is also conceived as processes and relations between actors, instead of as separate entities (Bateson, 1972, Emirbayer, 1997). Thus, social and interpersonal interaction and communication can be understood (and believed in) as loci of control which are *contextually* situated and in dynamic processes amongst actors. Unlike reification (see e.g. Ogbor, 2000), in which the reality is conceived in terms of separate entities or substances or things, relational cognition acknowledges processes, such as interpersonal interaction and communication, as realms of influence in their own right. Similarly, some scholars have described relational attribution (Eberly et al., 2011, Newman, 1981). Thus, it is not only other actors or powerful others who are seen to exercise external control in interaction loci, nor only oneself who is influencing others, but interaction involving both.

The idea of relational cognition is compatible with relational theorizing in social science, for example on agency (Emirbayer & Mische, 1998), thinking (Billig, 1996), and organizing (Hosking & Morley, 1991). Relational view of entrepreneurs' agency is present in studies stressing structuration through social networks (Jack & Anderson, 2002), embeddedness (Gorton, 2005), social competence and interaction (Tocher et al., 2012) and actor networks (Korsgaard, 2011), for example. To study relational control cognitions in entrepreneurship is an opportunity to apply insights from these social fields to psychological theorising on personal control in entrepreneurship.

Some studies have addressed the question of relational control cognition among entrepreneurs. Vesala (1992), for example,

analyzed twenty one in-depth qualitative interviews with experienced small business entrepreneurs and detected control beliefs expressed by the interviewees when describing their work. Two types of belief were prominent. First, there was a belief that action by self is crucial for the firm. Second, the interviewees believed in the influence and control by other actors, parties inside and outside the firm who provided resources, income or caused expenditure and losses. These beliefs coexisted, and were often associated with judgments about other actors representing support or threat to one's own independence or success.

In a later study (Vesala, 1996) the same entrepreneurs were interviewed again and prompted to comment on the statement 'success depends on oneself and other actors'. In their immediate responses, entrepreneurs referred to the importance of interaction between themselves and other actors, describing the necessity of having contacts and networks, getting along with others, being aware of doings and interests of others, cooperating and of making interaction work. The emphasis on interaction did not exclude the enactment of personal control, although it meant interdependence which constrains and directs one's own agency (see also Holt & MacPherson, 2010; Tocher et al., 2012).

This type of qualitative studies offer emic and general support for the theoretical proposition that interaction locus is an important aspect in entrepreneurs' thinking. However, the authors of this study are not aware of any systematic statistical study on the issue. Thus, in the following we present results from extensive survey data collected from small business owners and farmers. Instead of testing causal hypotheses, we simply ask whether belief in interaction locus of control has connection with internal and external loci of control, self-efficacy, and personal control among these

business actors. Further, we ask if non-farm small business owners appear more entrepreneurial than farmers in terms of displaying stronger belief in their own agency in business and how does such difference possibly relate to belief in interaction locus of control.

5. Quantitative evidence

5.1. Data collection and measures.

Three postal surveys in Finland were conducted: 2001, a follow-up 2006 and a second follow-up 2012. In each case, data were collected from three main groups: 1) farmers concentrating only on agricultural primary production ('conventional farmers'), 2) farmers who also had non-agricultural business ('diversified farmers'), 3) small businesses in rural areas ('non-farm entrepreneurs'). The sample of rural non-farm entrepreneurs was limited to small-scale enterprises with a maximum of 20 personnel and sales of more than €100 000.

Survey 2001. Data were collected by random sampling in three populations, each representing a broad cross-section of industries (Table 1): 1) non-farm rural entrepreneurs (n 590) selected from the Business Register of the Statistics, 2) diversified farmers (n 2200) from eleven separate lines of diversification with 200 subjects in each industry, 3) conventional farmers (n 600) that included equal numbers of arable crops, dairy farming, and other livestock. Both farmer samples were based on the Farm Register at the Ministry of Agriculture and Forestry.

There were 1238 responses, with a total response rate of 37%; conventional farmers 41%, rural non-farm entrepreneurs 33%, diversified farmers 36%. 145 responses

were removed because of missing values, leaving a total of 1093 respondents.

Survey 2006. The 2006 survey produced two data sets: follow-up from the 2001 survey (n = 1093) and an additional sample (n = 1800) of three equal size sub-samples (n = 600) of each subgroup based on the same universe as in 2001. The additional samples of non-farm entrepreneurs and conventional farmers were weighted on the basis of the size of the enterprise as measured in man-years. As a result, there were more small enterprises in the additional sample of non-farm entrepreneurs (below two man-years) and larger farms (above five man-years) in the additional sample of conventional farmers. This weighting rectified the 2001 firm size imbalance.

Responses totaled n = 871, a total response rate of 30%. The response rate was much higher in the follow-up sample (48%; n = 520) than in the additional sample (20%; n = 351); non-farm entrepreneurs (17%), diversified farmers (38%) and conventional farmers (33%). The analysis of loss in the collection of the 2006 data showed that the original samples are well represented in our data. No major distortion caused by loss was found.

Survey 2012. The data were collected as previously. The follow-up group consisted of 805 respondents, of whom 450 (55.9%) returned the questionnaire. The additional sample size was n = 2967; non-farm n = 1187, diversified n = 887 and conventional farmers n = 893. Half of the additional sample had Swedish as their mother tongue. Altogether 442 questionnaires were returned from the additional sample (15.1%). 85 questionnaires were omitted because the respondent had retired.

Table 1. Data: respondents of three main groups in three data-sets

	Non-farm small-business owners	Diversified farmers	Conventional farmers	total
Data 2001	195 (17.8%)	663 (60.7%)	235 (21.5%)	1093 (100%)
Data 2006	145 (16.6%)	433 (49.5%)	296 (33.9%)	874 (100%)
Data 2012	207 (25.7%)	337 (41.8%)	263 (32.6%)	807 (100%)

Questionnaires. The 2001 questionnaire consisted of 71 questions or series of questions; background information about the respondent; identity; economic information about the firm/farm; conceptions about being an entrepreneur; principles related to entrepreneurship and customer relations. The 2006 and 2012 questionnaires were modified with some of the original questions excluded and new themes added. Within the section ‘conceptions about being an entrepreneur’, questions measuring self-efficacy, personal control and locus of control were included. All these constructs were operationalized as perceived agency within the entrepreneurial situation. Thus, what was measured was cognitions about one’s agency in relation to business entrepreneurship, not about one’s agency in life in general.

Self-efficacy was measured by eight statements: ‘My skills are quite sufficient for working as an entrepreneur’, ‘I am more competent than an average entrepreneur’, ‘My character is not of entrepreneurial type’ (inverted), ‘My personal characteristics suit well for entrepreneurship’, ‘I will succeed as an entrepreneur’, ‘Not even major setbacks can make me give up my entrepreneurship’, ‘I believe that my success in the future will outrun entrepreneurs on average’, and ‘My success as an entrepreneur is uncertain’ (inverted). Following Drnovsek et al (2010), the valence dimension of self-efficacy beliefs was also taken into account so that some of the items measured positive expectations. The sum-variable for self-

efficacy was construed by calculating the mean of these variables, showing high internal consistency (Cronbach’s Alpha .80 in year 2001; .84 in year 2006; .83 in year 2012).

Personal control was measured by four statements: ‘I am able to affect the success of my firm through decisions concerning products and through production’, ‘My personal chances to influence the successfulness of my businesses are practically rather low’ (inverted), ‘I am able to affect the success of my firm through marketing and customer connections’, and ‘To a great extent I can personally control the success of my firm’). The sum-variable for personal control was construed by calculating the mean of these variables, showing high internal consistency (Cronbach’s Alpha .76 in year 2001; .77 in year 2006; .72 in year 2012).

Locus of control was measured by six statements: ‘My success as an entrepreneur depends (1) on myself / (2) on relationships and interaction between me and other people / (3) on societal and political forces / (4) on markets and the movements of market forces / (5) on luck or chance / (6) on God or other supernatural power’. No sum score was calculated. Because each locus was measured with one item, internal consistency was not calculated. The observed consistency between time intervals in terms of internal-interaction-external –division in the means and connections with other control constructs, however, support the use

of single item measurements. (see tables 2-4 and figures 3-8)

The answers were given by using a Likert scale from 1 ('Totally disagree') to 5 ('Totally agree').

5.2. Results: Interaction locus of control connects with other entrepreneurial agency cognitions and differentiates small business entrepreneurs from farmers

The analysis of the relationships between the control cognition variables used partial correlation analyses, where the group differences were eliminated (see tables 2, 3 and 4). The analysis showed two groupings among variables. Self-efficacy, personal control, internal locus of control and interaction locus of control all had high significant positive correlations, ranging between .14 and .57. Of these variables self-efficacy, personal control, and internal locus of control were mainly correlated negatively

with variables of external locus of control. These external locus of control variables (market, societal and political powers, luck/chance and God), then, formed another grouping with mostly positive correlations among them. This pattern of correlations remained quite stable across three data sets (2001; 2006; 2012), with the exception that correlation between market locus and personal control, self-efficacy and internal locus vary between years: sometimes there is negative correlation, sometimes no correlation. A noteworthy observation is, however, that interaction locus of control had somewhat different relationships to external loci of control than personal control, self-efficacy and internal locus of control: while the latter correlated negatively, interaction locus did not correlate with external loci, and in 2006 data it even had positive correlation with the market locus (table 5).

Table 2: Partial correlations between variables of control cognitions in year 2001 (main group effect controlled)

	SE	LC:Self	LC:interaction	LC:SocPol	LC:Market	LC:Chance	LC:God
PC	.45 ***	.57 ***	.32 ***	-.30 ***	-.12 ***	-.26 ***	-.16 ***
SE		.33 ***	.17 ***	-.10 **	-.04	-.16 ***	-.10 **
LC:Self			.25 ***	-.23 ***	-.08 *	-.23 ***	-.15 ***
LC:Interaction				-.04	.07 *	.03	-.01
LC:SocPol					.25 ***	.24 ***	.17 ***
LC:Market						.19 ***	.06
LC:Chance							.25 ***
LC:God							

Table 3: Partial correlations between variables of control cognitions in year 2006 (main group effect controlled)

	SE	LC:Self	LC:Interaction	LC:SocPol	LC:Market	LC:Chance	LC:God
PC	.47 ***	.54 ***	.37 ***	-.30 ***	.04	-.21 ***	-.16 ***
SE		.35 ***	.20 ***	-.12 **	.06	-.20 ***	-.14 ***
LC:Self			.27 ***	-.20 ***	.07	-.18 **	-.11 **
LC:Interaction				-.05	.19 ***	.06	.03
LC:SocPol					.19 ***	.21 ***	.12 **
LC:Market						.06	.07 *
LC:Chance							.29 ***
LC:God							

Table 4: Partial correlations between variables of control cognitions in year 2012 (main group effect controlled)

	SE	LC:Self	LC:Interaction	LC:SocPol	LC:Market	LC:Chance	LC:God
PC	.46 ***	.48 ***	.30 ***	-.31 ***	-.13 ***	-.29 ***	-.09 *
SE		.28 ***	.14 ***	-.13 ***	-.04	-.19 ***	-.07
LC:Self			.23 ***	-.23 ***	-.07	-.20 ***	-.11 **
LC:Interaction				-.03	.03	-.08 *	.07
LC:SocPol					.25 ***	.22 ***	.10 **
LC:Market						.21 ***	.02
LC:Chance							.17 ***
LC:God							

The comparisons of the groups showed statistically significant differences between groups in all control belief -variables. These differences were consistent and similar in all three data sets (see figures 1, 2, 3, 4, 5, 6, 7,

8). The differences were most pronounced between non-farm entrepreneurs and conventional farmers and the diversified farmers were between the two groups.

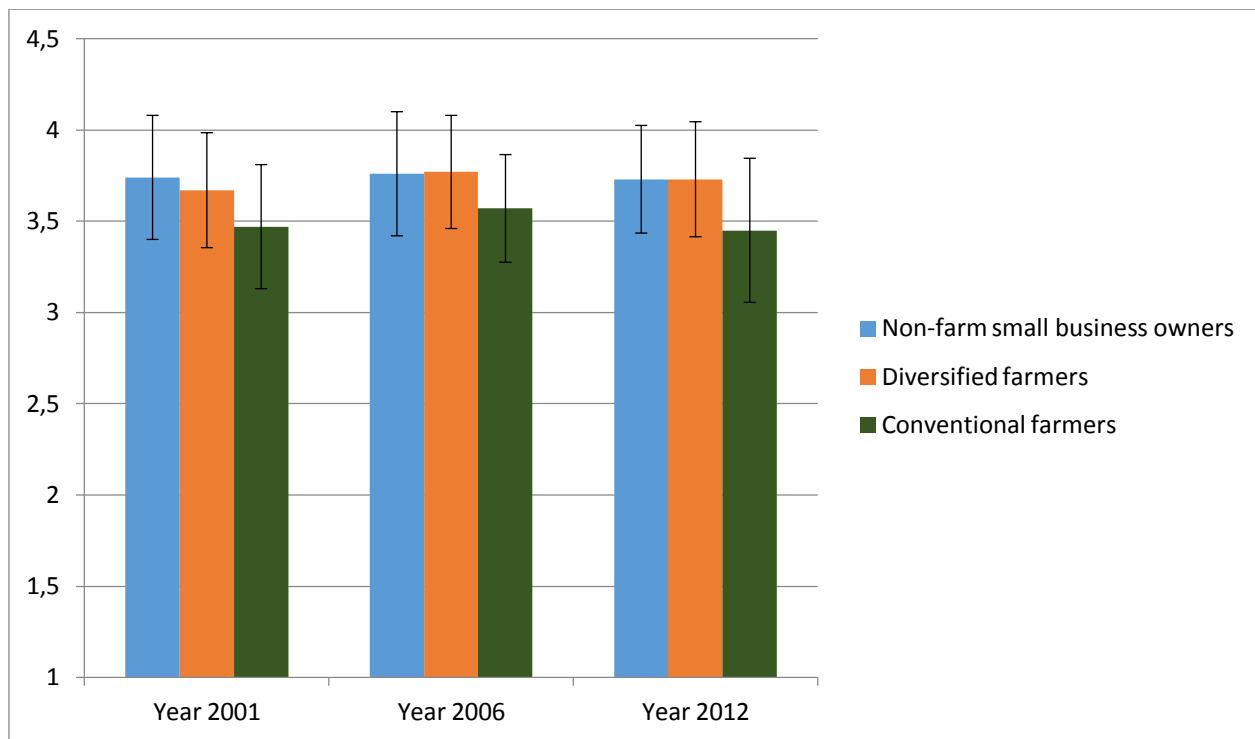


Figure 1. Comparison of the main-groups in Self-Efficacy in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=10.25$, $p<.001$; Year 2006: $F=9.41$, $p<.001$; Year 2012: $F=14.83$, $p<.001$.

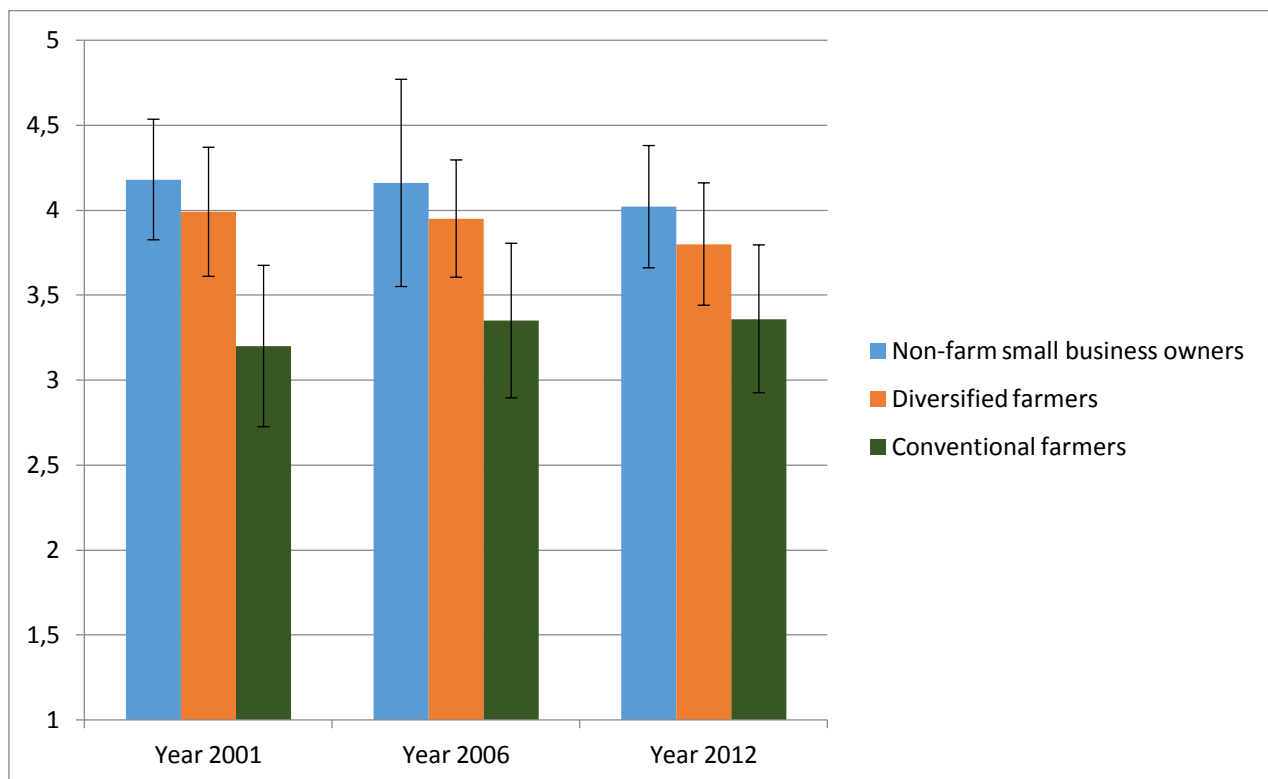


Figure 2. Comparison of the main-groups in Personal Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=105.00$, $p<.001$; Year 2006: $F=66.08$, $p<.001$; Year 2012: $F=44.73$, $p<.001$.

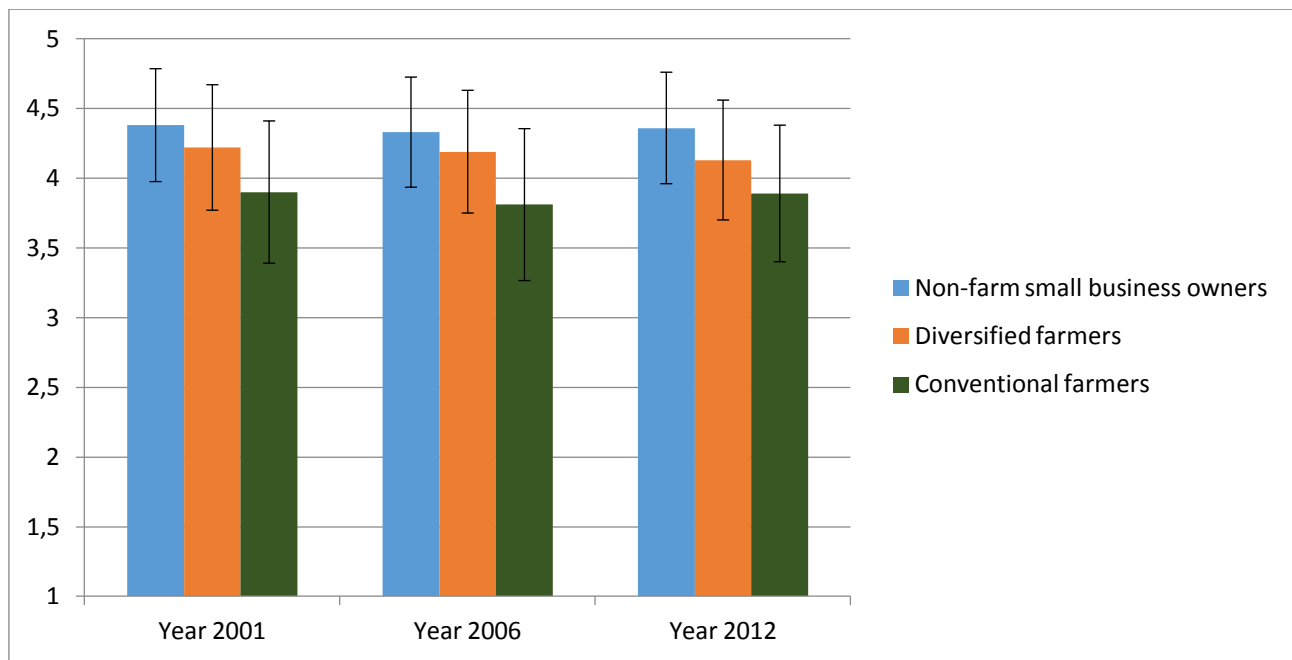


Figure 3. Comparison of the main-groups in Internal Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=15.92$, $p<.001$; Year 2006: $F= 18.12$, $p<.001$; Year 2012: $F= 16.35$, $p<.001$.

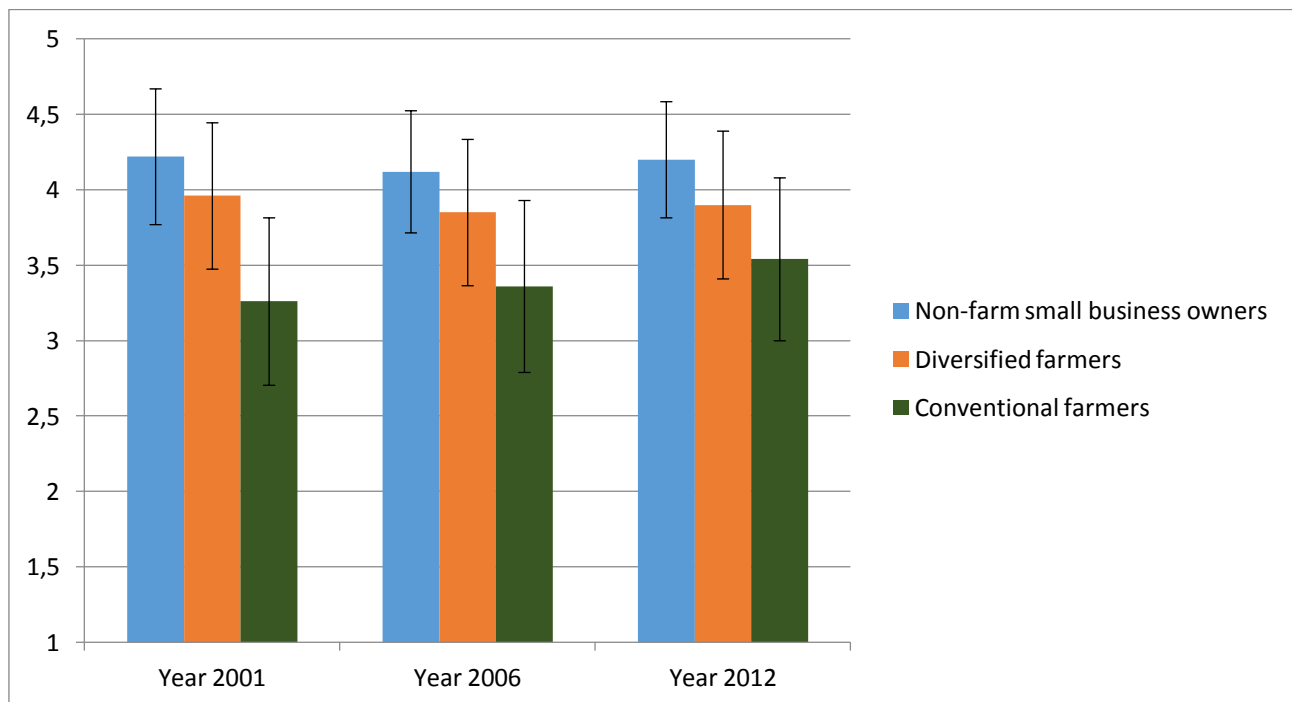


Figure 4. Comparison of the main-groups in Interaction Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=56.38$, $p<.001$; Year 2006: $F= 30.12$, $p<.001$; Year 2012: $F= 27.14$, $p<.001$.

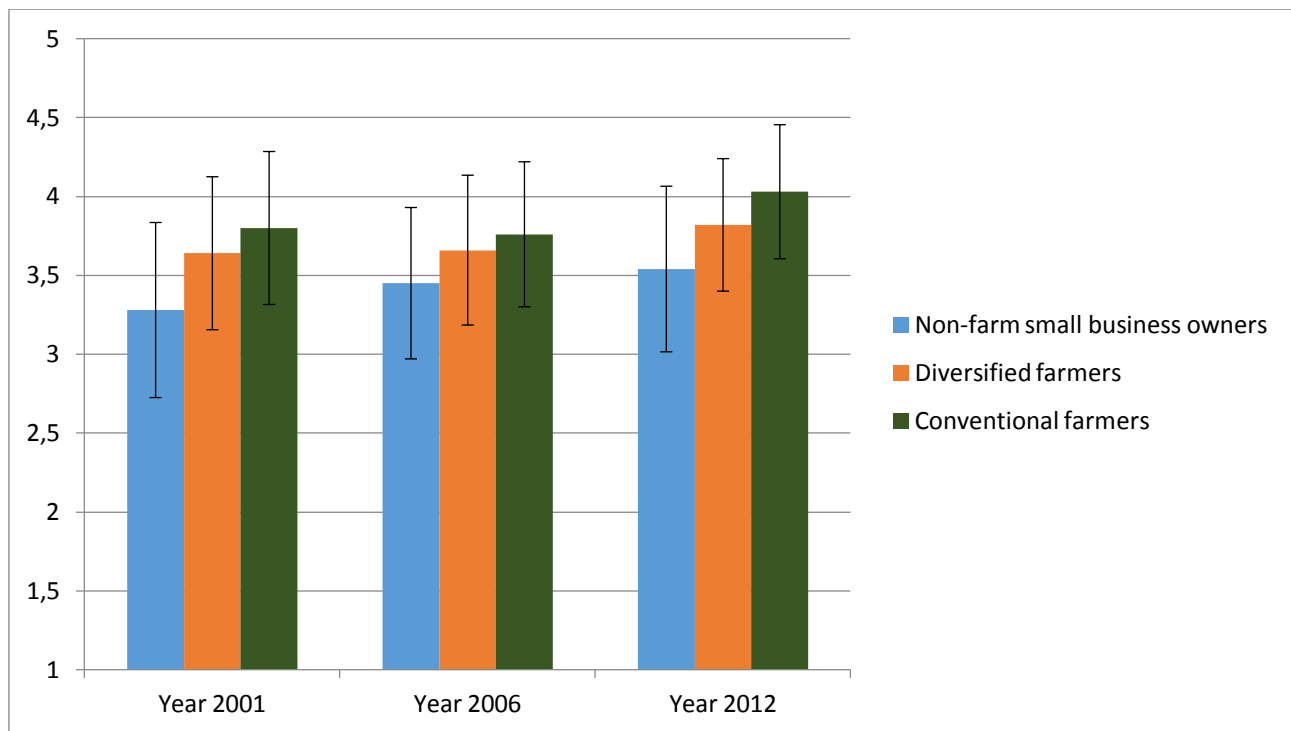


Figure 5. Comparison of the main-groups in Market and market forces Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=14.61$, $p<.001$; Year 2006: $F=4.93$, $p<.01$; Year 2012: $F= 16.48$, $p<.001$.

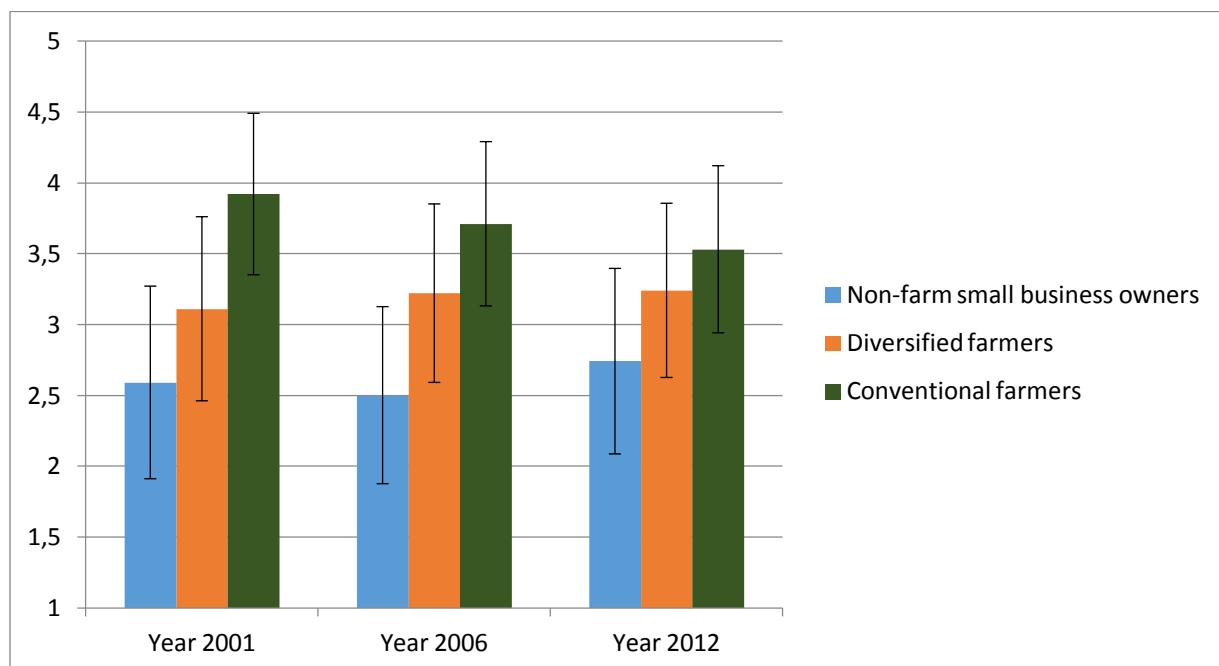


Figure 6. Comparison of the main-groups in Societal and political forces Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=58.87$, $p<.001$; Year 2006: $F=42.70$, $p<.001$; Year 2012: $F= 24.45$, $p<.001$.

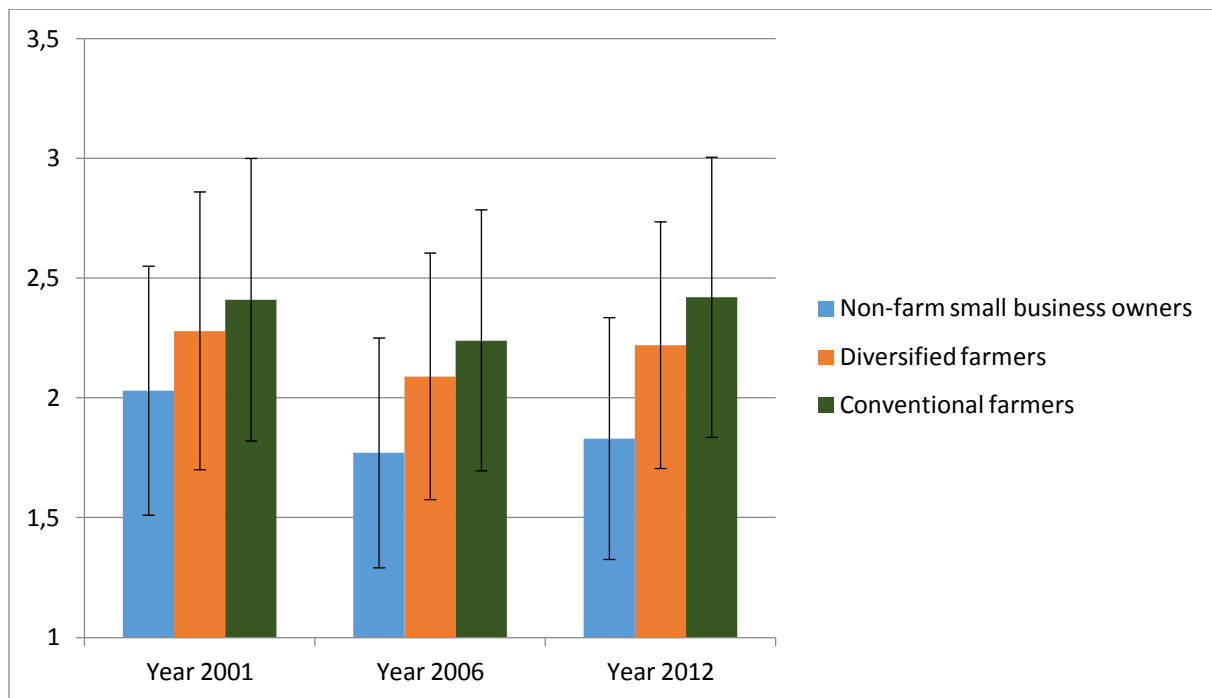


Figure 7. Comparison of the main-groups in Chance and luck Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=5.72$, $p<.01$; Year 2006: $F=9.03$, $p<.01$; Year 2012: $F=17.14$, $p<.001$.

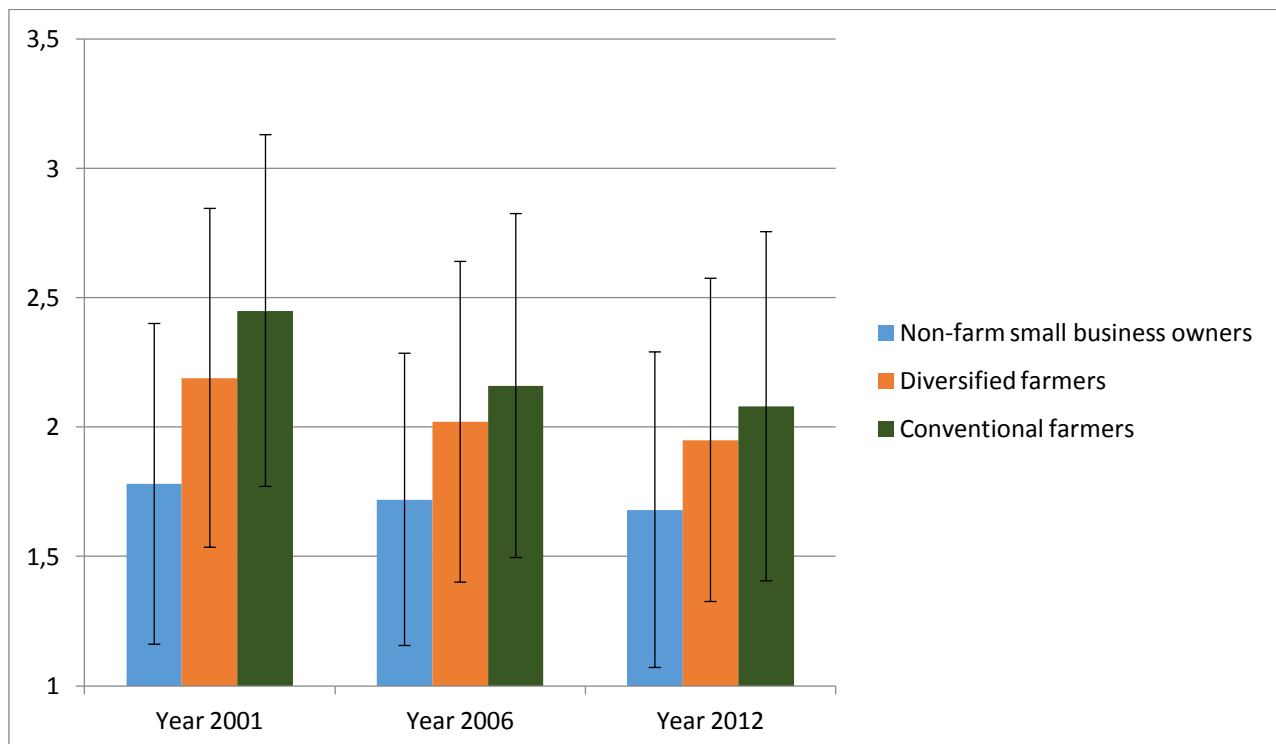


Figure 8. Comparison of the main-groups in God or other supernatural Locus of Control in years 2001, 2006 and 2012. Means and standard deviations presented. ANOVA results: Year 2001: $F=13.38$, $p<.001$; Year 2006: $F=5.22$, $p<.01$; Year 2012: $F=5.84$, $p<.001$.

The results show that the group ‘non-farm entrepreneurs’ had strongest belief of their own self-efficacy, personal control, internal and interaction loci of control, and weakest belief of other external loci of control (market, socio-political forces, luck and God). Conventional farmers were the opposite, and diversified farmers were in between of these two groups in each of the variables, with the exception of self-efficacy in years 2006 and 2012 where small business owners and diversified farmer did not differ. The differences between the groups in all were most pronounced in personal control, interaction locus and in the locus ‘societal and political forces’.

However, putting the group differences aside it can be noticed that within the limits of the scale, all respondent showed strong belief in personal control, in self-efficacy, in internal locus of control but also in interaction locus of control and in the market locus. Belief in external loci of luck/chance and God was much weaker as the means were at the opposite end of the scale. The belief in socio-political locus is somewhere in between as the scores were slightly above and below the midpoint of the scale.

6. Discussion

The presented results show that interaction locus of control did not associate with external loci of control such as societal and political forces, chance, or god. In one of three temporal sub-samples it associated positively with market locus of control, otherwise it had no correlation with this external locus either. Interaction locus of control did, however, have clear consistent positive associations with factors measuring belief in one’s own agency in business, i.e. internal locus of control, self-efficacy and personal control. The correlations were statistically significant, and in part relatively high, but remained below .60, suggesting that interaction locus does not simply measure the same thing as internal locus,

self-efficacy and personal control (see Cohen 1988). Further, unlike interaction locus, self-efficacy, personal control as well as internal locus of control mostly had significant negative correlations with external loci of control.

All this suggests that, for business actors, belief in interaction control does not fall neatly within the Rotterian conception of either internal or external control. Belief in interaction control implies influence of other actors, but not the lack of one’s own control. Rather, it appears to be quite compatible with belief in one’s own control. Among our respondents in all three surveys, those who have strong belief in personal control and self-efficacy also tend to believe that their success depends on social relations and interaction. One of the widely accepted theoretical propositions in the psychology of entrepreneurship is that belief in personal control, self-efficacy and internal locus of control support and enhance one’s agency. The results imply that also belief in interaction locus of control can have a similar function. Furthermore, it can be concluded that interaction locus of control may support entrepreneurial self-confidence in a similar way to personal control, self-efficacy, or internal locus of control.

As already said, personal control, self-efficacy and internal locus of control had negative correlations with socio-political, chance/luck, and God loci. This indicates that belief in some forms of external control can indeed be contradictory to belief in one’s own agency. However, in spite of its positive association with agency beliefs, interaction locus had no negative correlations with these external loci. In the 2006 data it even had significant positive correlation with the market locus of control. These results might imply that believing in interaction locus helps an actor to perceive and also to appreciate the workings of wider market structures and institutions. Nonetheless, the results show that interaction locus has a

special role in entrepreneurs' thinking as it connects to belief in one's own agency but does not exclude belief in external loci of control.

The results also show that non-farm small business owners believe more strongly in their personal control in business than farmers do. As the entrepreneurship literature drawing on Rotter's and Bandura's theories predicts, this difference manifested also as entrepreneurs' stronger belief in self-efficacy and internal locus of control. All the respondents practice business for their living, and also many farmers identify themselves as entrepreneurs (Vesala & Vesala 2010). Farmers, however, have been depicted as categorically different from other small businesses, their market position as largely price takers heavily dependent on subsidy and the vertical food chain (Phillipson et al., 2004). Thus the results suggest that parallel to such difference, conventional farmers are displaying lower levels of perceived agency than other small business owners. The difference was smaller between small business owners and farmers with diversified business, which again suggests that the nature of business practices may partly explain agency cognitions.

The found difference in agency beliefs between small business owners and farmers is perhaps not a surprising contribution to the literature on agency cognition and entrepreneurship, although it is rare to be able to base such observations on three comparable datasets collected over a ten year period. More interestingly however, we found similar difference between study-groups regarding belief in interaction locus of control. Small business owners displayed significantly weaker belief in control by societal and political forces, chance or god, in their business than farmers did. In the light of Rotterian theory, this is expectable considering the contrary difference between groups in belief in one's own agency in business. In regards to interaction locus of

control, however, this did not hold true. Small business owners believe more than farmers that interaction and relations with other actors control the success of their business.

If we accept an interpretation, prevailing in the psychology of entrepreneurship, that belief in one's agency in business is an indication of entrepreneurship, then small owners in our data appear more entrepreneurial than farmers. Our results show that among small business owners as well as farmers, belief in one's agency associates with belief in interaction as a locus of control in business, and further, that (more entrepreneurial) small business owners also believe more than farmers in the interaction locus. Thus, there seems to be good grounds for taking interaction locus of control into account when entrepreneurial agency is discussed and studied within the psychology of entrepreneurship.

7. Conclusions

Our results accord with the utility of including relational cognition when theorizing about agency cognitions as was argued earlier in this paper. This is not to claim that substantialist and individualistic ideas are absent in entrepreneurs' thinking. Quite the opposite, the results show strong support for statements stressing the agency of individual self. What can be argued is that entrepreneurs *also* apply relational ideas. Social relations and interaction are not separate entities or substances but rather complex and dynamic interfaces between self and other actors. Rather than a simple variable or 'cause', such a 'locus' translates into a context in which an entrepreneur's agency, and success, are relationally constructed and defined. As was argued earlier, relational theorizing brings out the notion of relational cognition. The survey results about interaction locus of control show that relational cognition can indeed be

empirically identified as an influential phenomenon in entrepreneurship.

As discussed earlier in this paper, belief in the locus of control is typically related to agency so that internal locus implies perception of agency whereas external loci imply lack of agency. The results both question and support this assumption. They suggest that personal control and self-efficacy associate strongly not only with belief in internal control by self, but also with perception of interaction locus, where control is located in the relations and interaction between self and other actors. External control is involved in the form of other actors. Thus, instead of theorising agency simply as an individual entrepreneur's 'ability to make things happen', this study identifies a more relational and 'bilocal' understanding of interdependent and socially constructed entrepreneurial agency. This conclusion is in line with existing literature on relational and constructionist views to entrepreneurship, but in this study it is maintained that it also applies to the study of entrepreneurs' agency cognitions.

The empirical case in this study focused on analyzing agency cognitions among three groups of business actors. Analyzing connections between agency cognition and outcomes, e.g. business performance, was beyond the limits of this article. There may also be a limitation in that the data were all rural, as some authors suggest that social interaction has different characteristics in the rural (Gladwin et al 1989; Irvine and Anderson, 2008). The analysis, nevertheless, is robust in showing the group difference and remarkable role of interaction locus of control. The possible relevancy of rural-urban dimension remains a question for later studies. Concerning the study of relational cognition, one obvious limitation is inbuilt in the survey method. The methodological point of departure where control beliefs are approached as measurable and separately

existing variables does not capture the perception of one's agency within the dynamic flow of processes of social relations and interaction. Furthermore, to measure the overall belief in interaction locus of control leaves it open how the interaction partners are perceived in terms of threat or support, for example, or how belief in interaction locus of control relates to Bandura's concepts of proxy agency and collective agency. Thus, more sophisticated, and in-depth qualitative, analyses will be needed in further research on entrepreneur's relational cognition. Nonetheless our statistical findings impressively highlight the belief in interaction locus of control among entrepreneurs.

In conclusion, agency cognition should not only be treated in terms of singular entities or simple internal-external dichotomy. Theoretical arguments and empirical findings presented in this paper suggest that distinctly relational and dynamic view to entrepreneurs' cognition about their agency is well justified. The explanatory value of psychological constructs of control can be enhanced by a more relational view. The concept of interaction locus of control represents a step towards this.

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