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Entrepreneurial attitude, innovation and performance among Norwegian nature-based tourism enterprises

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ABSTRACT

Entrepreneurship and innovativeness have seen considerable attention in the literature. However, little research has focused on micro-scaled enterprises, especially in the context of nature-based tourism. This work investigates how entrepreneurial attitude influences innovativeness and performance in Norwegian nature-based tourism enterprises. Data collection consisted of an e-mail survey and resulted in 178 usable responses. Respondents that exhibit a stronger entrepreneurial attitude appear more likely to change the way they organize their enterprise and tend to have higher income growth. Results point to potential policy actions that could positively impact rural development as well as individual firm actions that may enhance performance.

1. Introduction

Historically, the forest sector has been an important industry for the Norwegian economy, particularly for rural areas. Increasing globalization and competition in the wood products industry and a simultaneous reduction in income from timber sales among forest landowners have created increasing debate regarding economic diversification and who might best commercialize non-wood forest products in Norway. Politicians agree on the desirability of maintaining rural populations and robust regions throughout Norway and promotion of innovation and entrepreneurship in traditional sectors like forestry and agriculture is seen as important for ensuring the economic health of rural areas.

The study of firm-level entrepreneurship is a central issue in the entrepreneurship literature (Zahra, 1993). Current research identifies two different views of entrepreneurship (Sharma and Chrisman, 1999) where one group of scholars focuses on the outcome of entrepreneurship (Sharma and Chrisman, 1999), such as creation of value and another larger group focuses on the characteristics of entrepreneurship (Sharma and Chrisman, 1999), in other words, innovativeness. Both groups agree that opportunity recognition is at the center of entrepreneurship (Ireland et al., 2003). Researchers in the second group offer two accepted and frequently used definitions: 1) Schumpeter (1934) defines entrepreneurship as the process of carrying out new combinations, and 2) Gartner (1988) defines it as the creation of new organizations.

Innovation in the service sector has been a topic of growing interest among researchers and policy makers (e.g. Hjalager, 1994, 1997, 2002; Ioannides and Petersen, 2003; Hallenga-Brink and Brezet, 2003). In this study, nature-based tourism enterprises in Norway are investigated. Lunnan et al. (2006) identify two main elements of entrepreneurship among non-industrial private forest owners related to non-timber activities: the ability to recognize business opportunities and the ability to take calculated risks. Further, they examine how entrepreneurial attitudes affect the possibility for business start-ups. Rather than investigating entrepreneurship related to start-ups, this study focuses on existing enterprises. The first objective is to develop an understanding of how entrepreneurial attitudes influence innovativeness and change in Norwegian nature-based service enterprises.

Favorable market position (Porter, 1985) and possession of valuable, rare, imperfectly imitable, and non-substitutable resources distinctive to the enterprise (Barney, 1991) have frequently been described as sources of competitive advantage. Drawing from Schumpeter (1934), later research highlights the value of creativity and innovation for opportunity and advantage-seeking behaviors

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(Ireland et al., 2003). Empirical studies show a relationship between entrepreneurial orientation and performance (Wiklund and Shepherd, 2005). Accordingly, the second objective is to explore how entrepreneurial attitude is related to a positive change in performance in nature-based tourism enterprises in Norway.

Nature-based tourism enterprises related to forest land in Norway typically have fewer than five employees and can be defined as micro-enterprises (Vennesland, 2005). Lunnan et al. (2006) found that nature-based tourism enterprises (forest owners) are relatively small and can be characterized as life-style businesses, not growth businesses. An example of a micro-enterprise is a business supplementary to a farm, so enterprises offering a nature-based service, or product, are primarily located in rural areas (Vennesland, 2004). Innovations in these enterprises are more likely to be adoption of known products and processes rather than development of new-to-the-world products, procedures, or services.

In the text that follows we provide a theoretical background regarding entrepreneurship and innovation along with an explanation of the study framework. Second, operationalization of the constructs used in the study is presented. Results, discussion of results, implications and limitations of the study are then presented.

2. Theoretical background and hypotheses

2.1. Entrepreneurship and innovativeness

Historically, the concept of entrepreneurship has been connected to individuals. Kubeczko and Rametsteiner (2002) trace the term entrepreneurship to Richard Cantillon (ca. 1730), who defines entrepreneurship as self-employment with an uncertain return. Today, entrepreneurship is often viewed as a process inside an organization and focuses on innovation, growth, and uniqueness (Gartner, 1990), but has varying connotations and definitions to different researchers (Sharma and Chrisman, 1999). Entrepreneurship theory is generally connected to Schumpeter (1934) who discusses it in his work on economic development where he views entrepreneurs as drivers of economic development in that they destroy the existing economy to create something new (i.e., by innovating). Before his work, innovation was a word with negative implications (Morck and Yeung, 2001).

According to Schumpeter (1934), an entrepreneur is a person who carries out new combinations. These new combinations can take several forms: new goods or new quality of a product, new methods of production, new markets, new sources of supply or a new way of organization. Following this definition, entrepreneurship is the process of carrying out new combinations (Sharma and Chrisman, 1999). Stevenson and Jarillo (1990) also follow Schumpeter's definition but additionally maintain that it is a process by which individuals pursue opportunities without regard to resources they currently control. This definition of entrepreneurship is frequently used among modern scholars (Kubeczko and Rametsteiner, 2002).

Other researchers have a slightly different focus on entrepreneurship. In contrast to Schumpeter (1934), Gartner (1988) views entrepreneurship as the creation of an organization. His focus marks a shift from what the entrepreneur is to what the entrepreneur does (Gartner 1988). Although not intended as a definition, it has often been employed as such in the literature (Sharma and Chrisman, 1999). In summary, the two definitions of entrepreneurship by Schumpeter (1934) and Gartner (1988) make a contribution to the field of research by covering different themes. Carrying out new combinations, such as product innovation, may or may not lead to the creation of a new organization. The creation of a new organization can also lead to new combinations, but many new organizations can make no claim to innovative activities (Sharma and Chrisman, 1999).

While there is no unified definition of innovation, there is consensus that it represents something new (Grønhaug and Kaufmann, 1988). An innovative enterprise is an enterprise that creates or adopts innovations (Attewell, 1992; Knowles et al., 2008). Innovativeness reflects a tendency to engage in and support new ideas and create new processes, thereby departing from established practices and technologies (Wiklund and Shepherd, 2005; Lumpkin and Dess, 1996). Some researchers distinguish two main categories of innovation, i.e. product and process innovation (e.g. Edquist, 2001; Rametsteiner et al., 2005; Kubeczko et al., 2006). Product innovation is successful changes in the output of an enterprise or organization and can either be in goods or services. Process innovation can either be technological innovations or change in the organization of the enterprise (Kubeczko et al., 2006).

The operational definition of entrepreneurship used in the present study is from Sharma and Chrisman (1999:17):

> "Entrepreneurship encompasses acts of organizational creation, renewal, or innovation that occur within or outside an existing organization." "Entrepreneurs are individuals or groups of individuals, acting independently or as part of a corporate system, who create new organizations, or instigate renewal or innovation within an existing organization."

Entrepreneurship includes not only the acts of organizational creation shown in Lunnan et al. (2006), but also includes innovations that occur within or outside an existing organization (Sharma and Chrisman, 1999). These innovations include the creation of new combinations, new methods of production, new ventures, new markets, and new wealth (Brush et al., 2003). This implies that the field of entrepreneurship can also be applied to existing firms. An entrepreneurial organization has a higher level of innovation compared to an average firm (Jennings and Lumpkin, 1989) and corporate entrepreneurship is the sum of an enterprise's innovation, renewal, and venturing efforts (Zahra, 1995). These observations suggest the following hypothesis:

H1. Nature-based tourism micro-enterprises with an entrepreneurial attitude will be more innovative.

2.2. Entrepreneurial attitude and performance

Lunnan et al. (2006), in their work on entrepreneurial attitudes and the probability for start-ups among Norwegian non-industrial private forest owners, identify two main elements of entrepreneurial attitude: the ability to recognize business opportunities and the ability to take a calculated risk. There is a significantly higher probability for start-up of new activities among forest owners with entrepreneurial attitudes (Table 1). The general literature reaches similar findings where risk takers are more likely to initiate a new activity (Knight 1961) and risk attitude affects the selection of individuals into entrepreneurial positions (Cramer et al., 2002). Opportunity recognition is linked to Schumpeter (1934) who argues that some people are able to see and realize business opportunities whereas others are not.

There have been many studies on how an entrepreneurial orientation affects performance (Wiklund and Shepherd, 2005). Some empirical studies find that those enterprises adopting an entrepreneurial orientation exhibit superior performance (e.g. Wiklund, 1999; Zahra, 1991). However, researchers finding this link between entrepreneurial orientation and performance also note the paucity of empirical documentation. Other researchers have not found a significant relationship (Wiklund and Shepherd, 2005), indicating that the relationship is inconsistent. A shorter product life cycle is a general tendency in today's business environment (Hamel, 2000)

Table 1
Predicted probability of success of a start-up given different attitudes ($p<0.05$) (Lunnan et al., 2006)

	Positive opportunity recognition	Negative opportunity recognition
Risk taker	0.45	0.23
Risk-averse	0.24	0.10

which makes existing operations more uncertain, causing businesses to seek new opportunities (Wiklund and Shepherd, 2005). Consequently, operations can benefit from being entrepreneurially oriented by taking risks, being innovative, and changing products, processes, markets and organizations (Wiklund and Shepherd, 2005).

Ireland et al. (2003:965) state: "Exploring entrepreneurial opportunities contributes to the firm's efforts to form sustainable competitive advantage and create wealth." Entrepreneurship can also provide an added benefit by preserving the existing enterprise, rather than improving its profitability (Zahra, 1993). Motivations for entrepreneurship can also be other non-financial outcomes such as increasing employment and task involvement (Zahra, 1993). Nevertheless, the relationship between entrepreneurial attitude and performance has been empirically demonstrated in past research suggesting the following hypothesis:

H2. Nature-based tourism micro-enterprises with an entrepreneurial attitude are likely to have had increased net income during the last three years.

3. Methodology

Nature-based tourism enterprises are defined in this study as enterprises offering services in wilderness or related to wilderness. In Norway this mainly includes forest, mountain forest or mountain areas above the tree line. Recreation services activities related to rivers or lakes were also included.

3.1. Concept measurement

Entrepreneurial attitude was measured according to Lunnan et al. (2006) to allow direct comparison. Respondents were asked two single questions about their (1) willingness to take a high degree of risk when looking for opportunities and (2) if they were thinking about offering new services and products because they thought it could increase their income (Lunnan et al., 2006; Rametsteiner et al., 2005; Brouwer, 2002). A scale from 1 to 6 was used (1 = totally disagree; 6 = totally agree) because it could then be easily converted from an ordinal scale to dichotomous data.

Innovativeness was limited to process innovativeness, as earlier described, including organizational innovativeness. Four questions were asked as a measure of innovativeness: 1) have there been significant changes during the last three years in the way products/services are supplied, 2) have there been changes during the last three years in the way products are marketed, 3) has the enterprise been reorganized during the last three years, and 4) has there been interaction with new collaborators during the last three years. In this way, firms with more innovations were considered to be more innovative. A dichotomous (yes/no) scale was used. Process innovativeness is hereafter referred to as innovativeness.

Performance has been measured a number of ways in past research. For example, Calantone et al. (2002) measure firm performance in large enterprises by return on investment, return on assets, return on sales and overall profitability. Nature-based tourism micro-enterprises being assessed in this study do not necessarily have a separate financial statement for their business and measurement systems designed for larger firms are not necessarily suitable. To make the quantification of performance as easy as possible for respondents and to sustain a high response rate, respondents were asked if their annual net income in their service business had increased during the last three years. A categorical scale was used (increased, no changes or decreased).

Descriptive information was also collected in order to characterize the sample. Respondents provided information regarding land ownership, property size, number of person-years in the enterprise, age of the enterprise, turnover and respondent age and gender. Information was also collected about the type of products and services the enterprises offered.

3.2. Data collection

A questionnaire was designed to measure entrepreneurial attitude, enterprise changes, and performance changes during the last three years. The questionnaire was pre-tested by researchers and nature-based tourism micro-enterprises. Based on suggestions from the pre-testers, only minimal changes were made to the questionnaire.

The target population included all Norwegian, nature-based tourism enterprises. The sample consisted of all members of five different forest owners' associations with registered e-mail addresses and all relevant enterprises from the organizations Norwegian Rural Tourism and Food from the Farm. The questionnaire was forwarded to 324 forest owners by e-mail, followed by two reminders. The response rate was 55%, with 178 responses collected.

3.3. Analysis

To test for the presence of non-response bias, the first thirty respondents were compared to the last thirty respondents with respect to the number of person-years, property size, entrepreneurial attitude, innovativeness and performance, as outlined by Armstrong and Overton (1977). No significant differences ($p>0.05$) were found suggesting non-response bias was not of concern.

Multiple Logistic Regression with Maximum Likelihood Estimates and model fit was used to analyze (1) entrepreneurial attitude, (2) innovativeness and (3) changes in net income during the last 3 years. Logistic regression is one of the most frequently used methods in models where the dependent variable is dichotomous (Agresti, 1996). All the analysis was done in SAS version 9.1 (SAS 9.1). Correlations among independent variables showed no indication of

Table 2
Steps in analyses of innovativeness in nature-based micro-enterprises

	Analyses performed	Dependent variable	Two independent variables: 1) Risk taker 2) Opportunity recognition
Step 1	Four models tested with logistic regression	Dichotomous (yes or no) 1) Changed process 2) Changed marketing 3) Reorganization of firm 4) Interaction w/ new collaborators	Scale where: 1 = agree to 6 = disagree
Step 2	Composite dependent variable created from four dependent variables in step 1	Dichotomous (innovative, non-innovative)	None
Step 3	Model tested with logistic regression	Dichotomous (innovative, non-innovative)	Scale where: 1 = agree to 6 = disagree
Step 4	Composite variable creation, independent variable scale converted from 1–6 into dichotomous scale	None	Dichotomous 1) Risk taker vs. risk-averse 2) Positive vs. negative opportunity recognition
Step 5	1) Model tested with logistic regression 2) Logistic probabilities calculated	Dichotomous (innovative, non-innovative)	Dichotomous 1) Risk taker vs. risk-averse 2) Positive vs. negative opportunity recognition

a multicollinearity problems as all correlations among variables were positive and less than 0.4.

An analysis of the enterprises with an entrepreneurial attitude and the likelihood that they might pursue new production and management methods was performed in five steps (Table 2).

In step one (1), four logistic regression models were analyzed. The four dichotomous dependent variables (variable Y_j) were: "Changed process", "Changed marketing", "Reorganization of firm" and "New collaborators". In this step, the logistic regression model was fitted using values for the variable Y_j and its covariates $X_1, X_2,..., X_k$ (SAS 9.1).

$$\text{Logit} = (p_j) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_p X_p, \quad (1)$$

Where $X_1, X_2,\ldots, X_k$ are covariates for Y_j, $p_j = Pr(R_j = 1 | X_1, X_2,\ldots, X_k)$, and logit $(p) = \log(p/(1-p))$ (SAS 9.1).

The two independent variables measuring entrepreneurial attitude were analyzed as ordinal categorical data.

In step two, respondents were categorized into two groups. Respondents answering yes to three or four of the innovation questions were categorized as "innovative". Respondents answering no to two or more questions were categorized as "non-innovative".

In step three, a normal binary logistic regression was used with a dichotomous dependent variable "innovative" or "non-innovative". The independent variable was entrepreneurial attitude in the form of ordinal data (1–6).

In step four, the independent variable data, risk taker and opportunity recognition, was transformed from ordinal categorical data (1–6) to dichotomous data by dividing the scale in the middle.

In step five, the model was tested in a normal binary logistic regression. When dealing with dichotomous variables, here coded as one or zero, one can easily calculate the logistic probabilities with results from the odds ratio (Hosmer and Lemeshow, 2000) and present it in a 2×2 table.

The analysis related to whether the enterprises with an entrepreneurial attitude were more likely to have had increased net income was done as in steps three, four and five. The dependent variable non-innovative versus innovative was replaced with positive change in performance or not. The dependent variable was whether the respondent experienced an increase in net income during the last three years. The independent variables related to the entrepreneurial attitude were used as described in steps three and four.

4. Results

The most common services offered by respondents were related to accommodation in cottages, adventure activities, and fishing and hunting (Fig. 1). Other activities mentioned were related to food, organization of educational courses and gatherings for enterprises and

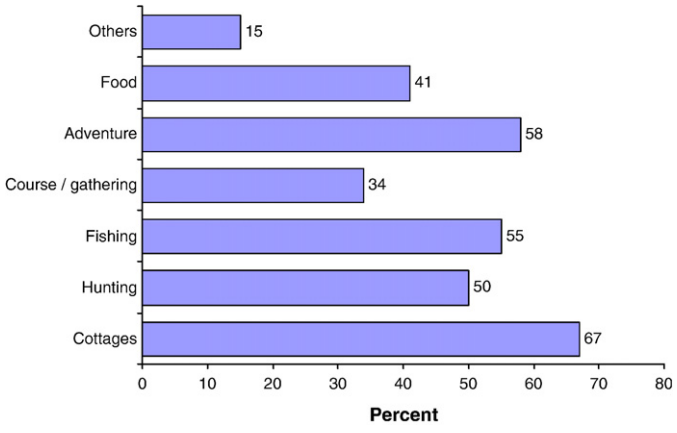

Fig. 1. Main products offered by respondents' enterprises.

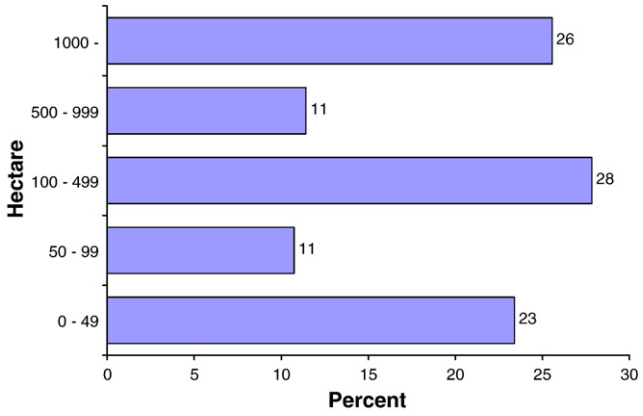

Fig. 2. Property size of respondents.

associations, preparation and sale of cottage building lots and farm tourism. According to the definition used in this study, 95% of the enterprises were micro-scaled and 5% were small-scaled.

Annual net income in responding enterprises was relatively small. Fifty-six percent had annual net income under NOK 100,000 (approximately Euro 12,000). Only 16% had an annual net income over NOK 400,000 (approximately Euro 49,000). However, 51% had an increasing annual net income during the last three years, and only nine% had decreasing annual earnings. Twenty-five percent had a turnover under 100,000 NOK (approximately Euro 12,000). Twenty-six percent had a turnover over 1,000,000 NOK (approximately Euro 120,000). Only 5% had more than five person-years working in the firm.

Ninety-four percent of respondents were landowners. Among the landowners, 23% had a property size less than 50 ha (Fig. 2). Twenty-seven percent had a property size larger than 1000 ha. No significant relationship was found between property size and innovativeness.

4.1. Entrepreneurial attitude versus innovativeness

The first hypothesis stated that nature-based tourism micro-enterprises with an entrepreneurial attitude will be more innovative. Over 70% of respondents were involved with new collaborators during the last three years (Table 3). Less then half of respondents had made significant changes during the last three years in the way they made or supplied their products or services.

The four independent innovation variables were first analyzed separately related to entrepreneurial attitude (step 1). The models were tested with logistic regression and the results are presented in Table 4.

The first logistic regression model with change in process versus entrepreneurial attitude was significant at a 5% level. The independent variable "risk taker" was significant in each of the four models ($p < 0.06$). The other independent variable "opportunity recognition" was not significant in any of the four models (Table 4).

Table 3
Changes made in responding enterprises during the last three years

	Yes	No	*N*
Has your firm implemented significant changes during the last three years in the way you make/supply your products/services?	71	102	173
Has your firm implemented changes in product marketing during the last three years?	105	69	174
Has your firm been reorganized during the last three years?	80	92	172
Has your firm interacted with new collaborators during the last three years?	122	51	173
Number who answered yes to three or more of the questions above	76	96	172

Table 4
Analysis of Maximum Likelihood Estimates and model fit related to innovation versus entrepreneurial attitude

	Estimated coefficient (*Pr*>ChiSq)			Likelihood ratio test. Model sign.
Model	Constant	Opportunity recognition	Risk taker	*Pr*>ChiSq
1. Changed process	−2.2601 (0.0047)	0.1119 (0.3722)	0.3105 (0.0176)**	0.0201 (**)
2. Changed marketing	−1.1206 (0.1336)	0.0978 (0.4173)	0.2445 (0.0503)*	0.0707 (*)
3. Reorganized the firm	−2.4481 (0.0022)	0.1432 (0.2490)	0.3705 (0.0046)***	0.0032 (***)
4. New collaborators	−0.6605 (0.3989)	0.0607 (0.6379)	0.2956 (0.0261)**	0.0540 (*)

***Significant at $p<0.01$ level; **significant at $p<0.05$ level; *significant at $p<0.10$ level.
The table shows estimated coefficients, variables significant (*Pr*>ChiSq) to each of the dependent variables (in parentheses) and model significance (*Pr*>ChiSq).

Seventy-six respondents answered 'yes' to three or four innovation questions and were categorized as "more innovative" (step 2). Innovativeness was tested against entrepreneurial attitude in a logistic regression (step 3). The results are presented in Table 5. The model was significant at a 1% level. The variable "opportunity recognition" was significant at a 5% level and the variable "risk taker" was significant at a 1% level. This supports the first hypothesis. Nature-based tourism micro-enterprises in this study that had an entrepreneurial attitude were more innovative.

The ordinal scale related the independent variables "opportunity recognition" and "risk taker" were then transformed to be dichotomous (step 4) and a new model was estimated with logistic regression (step 5; Table 6). The model was significant at a 5% level. Further, the probability for being grouped as "more innovative" or "less innovative" was estimated according to whether the respondent had a positive opportunity recognition or not, and whether the enterprise was labeled as a risk taker or a risk-averse enterprise. Table 6 shows that micro-enterprises with an entrepreneurial attitude are more likely to be innovative.

For micro-enterprises with positive opportunity recognition and which are also risk takers, the probability of being grouped as "more innovative" was 53%. If they are risk-averse and not able to recognize opportunities, the probability of being defined as "more innovative" was only 17%.

4.2. Entrepreneurial attitude versus change in performance

Change in net income during the last three years in the micro-enterprises was tested against entrepreneurial attitude. The results are presented in Table 7. The model was significant at a 5% level. The independent variable "risk taker" was significant at a 10% level, while the second independent variable, "opportunity recognition", was not significant at a 10% level, but significant at a 20% level. This indicates that there may be a relationship between entrepreneurial attitude and changes in net income during the last three years, although the significance level is not strong. This shows weak support for the second hypothesis; nature-based tourism micro-enterprises with an entrepreneurial attitude are more likely to have had increased net income during the last years.

For micro-enterprises with positive opportunity recognition and which are also risk takers, the probability of having had a positive growth in earnings during the last three years was 58% (Table 8). If they are risk-averse and not able to recognize opportunities, the probability of having had positive growth was 30%. In other words, the results suggest that micro-enterprises with an entrepreneurial attitude are more likely to have increased net income than enterprises without this attitude.

5. Discussion

5.1. Entrepreneurial attitude versus process innovativeness

As mentioned earlier, there are different definitions of entrepreneurship in the literature. Gartner (1988) views entrepreneurship as the creation of an organization. Research findings suggest that forest owners with an entrepreneurial attitude are more likely to start-up new activities related to their forest (Lunnan et al., 2006). This has also been supported in research outside of nature-based tourism (e.g. Schumpeter, 1934; Knight, 1961; Brouwer, 2002). According to Schumpeter (1934), an entrepreneur is a person who carries out innovations. This study indicates that there is a positive connection between entrepreneurial attitude and innovation in nature-based, tourism micro-enterprises. In the first step of the analysis, dealing with the four independent innovation variables separately, only the risk aversion variable was significant. This result indicates that more risk-seeking enterprises were more likely to change the way products/services are supplied, change the way they market their products and services, and change the way they organize the enterprise and find collaborators. This result is consistent with Schumpeter's (1934) work and other, later, studies (e.g. Knight, 1961).

The second variable, opportunity recognition, was not significant in the first step of the analysis. According to Schumpeter (1934), one would expect this connection to be significant. In step three, the independent innovation variables were categorized together. Respondents categorized as more innovative had a significantly larger possibility of being labeled as positive opportunity recognition enterprises. The opportunity recognition variable was not as significant and consistent through the analysis as the risk taker variable. Despite this, both were significant, showing that the possibility of being innovative was larger when the enterprise was a risk taker and when it had a positive opportunity recognition. This finding is consistent with theory (e.g. Schumpeter, 1934).

5.2. Entrepreneurial attitude versus change in performance

Research findings suggest that enterprises with an entrepreneurial attitude are also more likely to perform better (Wiklund, 1999; Wiklund and Shepherd, 2005; Zahra, 1991). Wiklund (1999) investigates

Table 5
Analysis of Maximum Likelihood Estimates and model fit related to the variable "more innovative" versus entrepreneurial attitude

Likelihood ratio test: $p<0.01$ (***), −2 log likelihood = 230.511, 216.761			
Variable name	Estimated coefficient	*Z*	*Pr*>ChiSq
Constant	−3.0324	−3.62	0.000
Opportunity recognition	0.2617	2.00	0.046 (**)
Risk taker	0.3431	2.60	0.009(***)

***Significant at $p<0.01$ level; **significant at $p<0.05$ level; *significant at $p<0.10$ level.

Table 6
Predicted probability for innovativeness when the respondent has an entrepreneurial attitude

	Positive opportunity recognition	Negative opportunity recognition
Risk taker	0.53	0.32
Risk-averse	0.32	0.17

Likelihood ratio test: $p=0.05$. Model significant at a 5% level.
Estimated coefficient; constant = −1.595, opportunity recognition = 0.843, risk aversion = 0.856.

Table 7
Analysis of Maximum Likelihood Estimates and model fit to changes in earnings versus entrepreneurial attitude

Likelihood ratio test: $p<0.05$ (***), −2 log likelihood = 230.511, 216.761			
Variable name	Estimated coefficient	*Z*	*Pr*>ChiSq
Constant	−1.8140	−2.36	0.018
Opportunity recognition	0.1641	1.35	0.178
Risk taker	0.2413	1.92	0.055(*)

***Significant at $p<0.01$ level; **significant at $p<0.05$ level; *significant at $p<0.10$ level.

entrepreneurial orientation, extensive innovation, proactiveness and risk taking in small Swedish enterprises. His results indicate a positive relationship between entrepreneurial orientation and performance. This study also finds a positive connection between entrepreneurial attitude and performance in micro-scale, nature-based tourism enterprises in Norway. Those enterprises exhibiting positive opportunity recognition, that are also risk takers, have a larger probability of having had increased net income during the last three years.

Despite some indication of a relationship between entrepreneurial attitude and performance, the significance level was too low to make strong statements. The "opportunity recognition" variable was especially weak. None of the independent variables were significant at a 5% level. There could be different reasons for this. First of all, the link between entrepreneurial attitude and performance is not necessarily consistently positive. Entrepreneurial activity can influence different dimensions of performance differently and at different points in time (Zahra, 1993). The timing of financial payoff from entrepreneurial ventures can also be different in micro-scaled enterprises than in larger firms. Descriptive data in this study showed that the enterprises were often related to forest land and farms. The business can be a supporting activity to a farmer or a forest owner where the aim with the activity can be to maintain the farm and the forest land, rather than maximizing earnings. Entrepreneurial activities can also pay off primarily by preserving the existence of the enterprise, rather than improving its revenue generation (Zahra, 1993). Non-financial outcomes are also frequently mentioned in the literature. One example is increasing employee motivation and retaining the enterprises' most talented people (Peters and Waterman, 1982). Non-financial outcomes may, in the long run, positively effect financial outcomes.

Measurement variables in this study could be another reason for weakly significant findings. According to Dess et al. (2003) a multiple measure of economic outcomes such as profitability and sales growth should be used. Nature-based tourism enterprises investigated in this study are small or micro-scaled. Collecting data to measure performance as typically carried out for larger enterprises is problematic. Many of the respondents will, for example, not have separate financial statements for their business and a detailed questionnaire could drastically reduce response. There has been no consensus regarding how to measure small firm performance and research has focused on easy-to-gather variables (Wiklund, 1999). Researchers argue, therefore, for using growth as the most important performance measure in small firms (Wiklund, 1999). This can be seen as support for using change in net income as an indicator of performance in this study.

6. Implications and future research

Study findings support the existence of three aspects of entrepreneurship in nature-based tourism enterprises in Norway: opportunity recognition, risk taking, and innovativeness. However, opportunity recognition was found to have only a weak connection with innovativeness and should be further investigated. Risk taking and innovativeness have been two of three central dimensions of entrepreneurship research (Miller, 1983). The third dimension to characterize and test entrepreneurship according to Miller (1983) was proactiveness. The most common operationalization of entrepreneurial orientation is that developed by Covin and Slevin (1991). However, there is a lack of literature regarding entrepreneurial orientation in forest enterprises related to nature-based tourism and in the non-wood forest industry in general. To gain a deeper understanding of entrepreneurship in micro-enterprises, Covin and Slevin's (1989) model, that includes innovation, proactiveness and risk taking, should be adapted and tested.

The findings of this research suggest that government policy has a role in increasing entrepreneurship in the forest sector. Policies that limit risk for nature-based tourism enterprises can serve to make them more entrepreneurial and more innovative. This should, in turn, result in better performance and enhanced rural vitality. As there is clear political resolution to maintain rural populations in Norway, rural and regional policy should be directed towards maintaining these small operations and helping them thrive. Because the traditional forest industry has not followed general economic development, diversification of rural economies is critical. Innovation and entrepreneurship are the ingredients for rural vitality. To improve knowledge about who to trigger innovation and entrepreneurship more studies on antecedents to innovativeness should be done. Important examples of antecedents are social network and value network. Micro companies do not innovate alone, but in interaction with other. Additional study of antecedents may lead to development of improved policies to stimulate innovation in this sector.

This study emphasizes two implications for managers in nature-based tourism enterprises. First, according to the empirical results of this study, an entrepreneurial attitude has a positive effect on innovativeness in these enterprises. Earlier research has found that innovativeness gives small enterprises a competitive advantage, for example, by differentiating their enterprise from competitors (e.g. Wiklund and Shepherd, 2005). Second, an entrepreneurial attitude contributes to improved performance (growth in net income), implying that managers can gain from increasing the entrepreneurial climate of their operations. Proactively pursuing new ideas and regular experimentation should benefit these small enterprises.

7. Limitations

Like all research, this study had limitations. First, it was a cross-sectional study and no longitudinal data was collected, which prevents drawing conclusions regarding causality. Only enterprises still in business were surveyed. No enterprises that had gone out of business were included in the sample, and findings in this study can only be generalized for surviving enterprises. It is logical that risk taking enterprises may have a higher chance of failure. Also, to increase validity and reliability, multi-item scales should be used.

There was no complete list of nature-based tourism micro-enterprises in Norway. All forest owners' associations were contacted to obtain as complete a sample as possible. Two forest owners' associations did not have a list, and one did not want to give away its list. To get a more representative sample, all relevant respondents from a list of members of the Norwegian Rural Tourism and Food from the Farm were contacted. These organizations have long lists of businesses involved in rural tourism and traditional food products. Descriptive information was used to look for bias in the sample and none was found. Still, there is no guarantee that the sample is representative.

Table 8
Predicted probability for increasing earnings when the respondent has an entrepreneurial attitude

	Positive opportunity recognition	Negative opportunity recognition
Risk taker	0.58	0.49
Risk-averse	0.37	0.30

Likelihood ratio test: $p<0.05$.
Estimated coefficient; constant = −0.847, opportunity recognition = 0.326, risk aversion = 0.825.

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