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Perceptions of ownership among new forest owners – A qualitative study in the European context

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Introduction

Two-thirds of all European forests are owned by private forest owners (State of Europe's Forests 2015) and the majority of these (83%) are owned by non-industrial private forest owners (NIPF) (Amacher et al., 2003; Schmithüsen and Hirsch, 2010; Živojinović et al., 2015). Therefore, the behavior, attitudes and values of this group play an important role in the development of forestry and

forest management in Europe. Previous studies have clearly demonstrated that demographic changes among NIPF owners gravitated towards individuals without connection to farming, elderly, and a higher proportion of women (Živojinović et al., 2015). Similarly, the studies have shown that these demographic changes in the ownership structure are reflected in forest owners' values and objectives by making them more diverse (e.g. Boon et al., 2004; Härdter, 2002; Ingemarson et al., 2006; Karppinen, 1998; Karppinen and Tiainen, 2010; Kuuluvainen et al., 2014; Volz and Bieling, 1998; Ziegenspeck et al., 2004). For example, the purely economic objectives are not necessarily dominant any more and the number of multiobjective forest owners has grown (e.g. Bengston et al., 2011). There is also a tacit assumption that non-traditional NIPF values influence the new forest owners' behaviour in decision making and management concerning their forest properties, but there is still a need for a more empirically grounded basis to verify this link. (e.g. Kuuluvainen et al. 2014; Lidestav and Berg Lejon, 2013).

The changes among NIPF owners' demographic characteristics, their values [1]and objectives, along with the more general technological, social and cultural changes in society, may signify a movement among NIPF owners away from so-called production-oriented "traditional forestry" (Follo, 2011). This may well increase the number of forest owners with no specific objectives (wood or nonwood) for their forests (e.g. Butler and Leatherberry, 2004; Kuuluvainen et al., 2014) - a scenario that entails threats to the forestry sector's politically defined goals as well as challenges for policy design (Boon et al., 2004; Follo, 2011). It has further been stated that new and future forest owners may no longer enjoy the same personal connection, physical or emotional, with their forests that previous forest owner generations have had (Weiss et al., 2018). This can result in passivity or indifference in forest management (Živojinović et al., 2015). It has been suggested that some of the increased passivity among NIPF owners has been caused by technical reasons, such as the small size of forest holdings,

[1] As values refer to a desirable goal or ideal end state of certain activity or behavior (Mikkola, 2003), the forest owners' values have been seen in previous research closely connected to the owners' objectives (e.g. Ni Dubháin et al, 2007).

long distances between places of residence and forest holdings, as well as lack of forestry knowledge among the owners (e.g. Best, 2004; Matilainen and Lähdesmäki, 2014b). However, at the same time it must be noted that in many European countries there is an extensive forest extension service network that provides actively varying forest management services (Živojinović et al., 2015). In addition, large forestry companies provide management services and stewardship packages to their clients. Therefore, in principle, at least some of these technical reasons could be overcome by a simply handing out the work. This raises the question of whether we actually properly understand the elements affecting new NIPF owners' forest management behaviour.

In this paper, we contribute to the research focusing on new NIPF owners (e.g. Karppinen, 2012; Živojinović et al., 2015) by arguing that an important potential influence on new NIFP owners' forest management behaviour is their perception of forest ownership as such (e.g. Johnston, 1985; Lähdesmäki and Matilainen, 2014). Several scholars have stated that ownership as a concept should not be understood only from the perspective of legal property rights, but as a dual phenomenon including certain psychological aspects (Etzioni, 1991; Pierce et al, 2001, 2003; Lähdesmäki and Matilainen, 2014a). The core of these feelings of ownership, i.e. psychological ownership (Pierce et al 2001; 2003), is mostly related to the feeling "it is mine" (Pierce and Rogers, 2004).

Even though there are already some studies related to psychological ownership focusing on natural resources (e.g. Pohja-Mykrä, 2014; Matilainen and Lähdesmäki, 2014), most of the previous studies were conducted in the field of organizational research. Nevertheless, Lähdesmäki and Matilainen (2014) showed in their study that psychological ownership is an important influence on forest owners' behaviour. The results of this previous research showed that the more forest owners knew about their forests, the more they were willing to invest (time, money, labour) in their forests, and the more control they had over their forest management, the deeper and stronger their feelings of ownership and the more conscious and active their forest management decisions were (Lähdesmäki and Matilainen, 2014). Psychological ownership has been reported to have several behavioral

consequences in other sectors as well, such as responsible behaviour and human territoriality (e.g. Brown et al., 2014; Groesbeck, 2001; Pierce and Jussila, 2011; Pierce et al., 2003).

However, the few pieces of previous research related to ownership feelings in the private forest context (Lähdesmäki and Matilainen, 2014; Matilainen et al, 2017) are focused on NIPF owners in general and only on Northern European contextual settings. Thus, there are no studies focused especially on new forest owners, who are currently under particular attention in forest policy around Europe. As the tenure of the ownership has been found to have an impact on psychological ownership (Raffelsberger and Hallbom, 2009), the new forest owners provide a fruitful target group for the research. In this study, wider data related to the contextual variation in the forest ownership was also sought. Better understanding how new NIPF owners perceive their forest ownership in different contextual settings can aid us also in better understanding their forest management decisions.

This paper aims to describe the new NIPF owners' perceptions of forest ownership using qualitative analyses drawn from 23 in-depth interviews covering different contextual settings in Europe. The theory of psychological ownership is used as a theoretical background. The aim is to examine how psychological ownership is expressed and ownership feelings are manifested in private forest-owning contexts. The results illustrate what kinds of ownership feelings new forest owners have for their forests and discuss how these affect their forest management behaviour. Finally, we make some recommendations for policy design based on the results presented.

Theoretical framework: Psychological ownership in the forest ownership context

Psychological ownership reflects both the affective and cognitive relationship between the individual and an object — here between a forest owner and a forest (cf. Pierce et al., 2001). Even though the legal and psychological views of ownership sometimes overlap, there are significant differences between these two phenomena. Legal ownership is recognized foremost by society, and the rights that come with ownership are specified and protected by the legal system, while psychological

ownership is recognized foremost by an individual who experiences the feelings and also manifests the rights (s)he feels to be associated with psychological ownership (Pierce et al., 2003). However, the existence of psychological ownership does not require the presence of legal ownership and vice versa. For example, psychological ownership concerning forested land can be manifested in relation to forest scenery juridically owned by someone else. In countries with extensive Right of Public Access the person can feel ownership towards traditional berry- or mushroom-picking sites in the forest, regardless of who owns the land.

Pierce et al. (2003, pp. 88–91) showed that the emergence of psychological ownership is related to the fulfilment of both the innate and socially generated motives of human beings. As these motives, they identified 1) efficacy and effectance, 2) self-identity and 3) 'having a place'. The first motive, efficacy and effectance, relates to feelings of control. The possibility of being in control, being able to do something about one's environment and being able to attain the desirable outcome of one's actions are important factors in creating psychological ownership (Dunfrord et al., 2009, Ikävalko et al., 2006; Liu et al., 2012). The second psychological motive stems from expressions of self-identity. In other words, people use ownership to define their self-identity, express it to others and also to maintain its continuity. Thirdly, the motive 'having a place' arises from a sense of belonging, i.e. it can be defined as a sense of feeling at home and/or having a close relationship with and affinity for a place. The concept of belonging has also been found to be crucial to human self-identity and self-competence (Asatryan and Oh, 2008). Thus, the motives interlink at many levels. Each of the motives facilitates the development of psychological ownership. Later, Pierce and Jussila (2011) added to the theory a fourth motive, stimulation, which focuses more on the dynamics of psychological ownership.

It is also important to understand how a person begins to experience psychological ownership. The emergence of the feeling is often a long process. Pierce et al. (2001) identified three potentially interrelated routes through which people come to experience psychological ownership, namely controlling the target, intimately knowing the target and investing oneself in the target. First, the

greater the amount of control a person can exercise over certain objects, the more the object will be psychologically experienced as part of the self (Pierce et al., 2003, citing Furby, 1978). Exercise of control becomes concrete by having access to the object. Second, the more information and better knowledge an individual has of the object, the deeper is the relationship between self and object and, hence, the stronger the feeling of ownership towards it. Finally, investment of the self allows individuals to see their reflection in the target and to feel their own effort in its existence (Pierce et al., 2003). Thus, investment of the forest owner's energy, time, effort and attention in his/her forests develops feelings of psychological ownership towards them. Each route can enforce any motive of psychological ownership and the routes are distinct, complementary and additive in nature. However, the feelings of ownership for a particular target may be stronger when an individual arrives at this state as a result of multiple routes, rather than just a single route (Pierce et al., 2003, 95-96).

The feelings of ownership towards various objects have important and potentially strong positive and negative behavioural effects. In previous studies, psychological ownership has been positively associated with behaviour that contributes to the community's well-being, voluntarism and willingness to assume personal risks or sacrifices (Brown et al., 2014; Groesbeck, 2001; Pierce et al., 2003). Furthermore, it may also promote feelings of responsibility (e.g. Pohja-Mykrä, 2014). It should be noted, however, that psychological ownership can as easily entail negative behavioural effects related to individuals' unwillingness to share the target of ownership with others or their need to retain exclusive control over it (human territoriality). Such behaviour is likely to impede cooperation between people or interest groups (Matilainen and Lähdesmäki, 2014; Pierce and Jussila, 2011). Furthermore, there are times when feelings of ownership can lead an individual to feel overwhelmed by the burden of responsibility. When people witness radical change in targets that they perceive as theirs, they may come to feel personal loss, frustration, and stress originating in the lack of control over what once was theirs (Lähdesmäki et al., 2016; Pierce et al., 2003)

In this study we use the theory of psychological ownership to interpret the ownership feelings that new NIPF owners have towards their forests. The theory suggests and the previous empirical studies show that ownership feelings seem to significantly influence the forest owners' behaviour. However, they also suggest that the length of tenure influences these feelings, as well as that the legal owners may not have ownership feelings towards their forests, which may cause alienation and even lack of responsible use of the resource. As these are some of the main threats linked to the new generations of forest owners, the psychological ownership framework provides a useful concept to improve our understanding of the decision-making of new forest owners.

Material and methods

The interview material

In order to gain a deeper understanding of how new forest owners perceive their forest ownership and how this may influence their forest management, the qualitative approach was selected for this study (Lincoln and Denzin, 1994; Patton, 2002). The data consisted of 23 theme interviews, which were given in 10 different European countries: (Belgium (BE), Czech Republic (CZ), Estonia (EE), Finland (FI), France (FRA), Germany (GER), Romania (RO), Slovakia (SK), Serbia (SR) and Sweden (SWE). As this study is exploratory in nature, aiming to understand the phenomenon in question and bring out the evidence of the presence of psychological ownership in the context of private forest ownership, the aim was to collect as rich data set as possible including cultural variation (Denzin & Lincoln, 1994; Patton, 2002). As we narrow down the aim to look at forest ownership aspects from a psychological perspective, it can be stated that for this purpose the data was sufficient to understand/describe the concept (Lichtman, 2014)

This approach was chosen as, even though the amount of private forest ownership is significant on average in Europe (Schmithüsen & Hirsch, 2010), there is much variation between European countries. For example, in Finland 60% of the forested land is owned by NIPF owners and in Portugal

as much as 93 %, while in Poland, the NIPF ownership rate is under 20% (Živojinović et al., 2015). Thus, the role of forests also differs between the countries, and the bigger the role that forests have in the national economy, typically the stronger the policy instruments developed to control the use of the forest resources, further influencing the forest owners' own ability to control their resources.

To understand the data, some background information on the regions from which the interviews have been derived is in order. Typically in Northern Europe, the forests have played an important role in individual livelihoods and in the national economy (Živojinović et al., 2015) and thus sustainable commercial forestry has been aggressively supported at the national level. This has also entailed extensive advisory services and public subsidies for forestry. Despite the strong emphasis on roundwood production, the recreational values of forests are much appreciated by the owners themselves as well as by the general public and the free access policy even to private forests is typical. On the other hand, forestry in general does not play a leading role in the economies of Central and Western European countries. For example, in Germany the proportion of agriculture, forestry and fisheries in the gross domestic product (GDP) dropped from 3.3% in 1970 to 0.6% in 2015 (Statistisches Bundesamt, 2015). Nevertheless, the forest- and timber-based industry (which also includes sawmills, wood processing and paper) still accounts for 1.3 million jobs in Germany, especially in rural areas (Internetauftritt des Bundesministeriums für Emährung und Landwirtschaf) (BMEL, 2016). The sector employs more people than, for example, the automotive industry and is seen politically as an instrument for mitigating the ongoing urbanization. In addition, over the last 15 years there has been an increasing demand for timber and biomass from forests and thus the forest-based economies are supported by forest policy measures that also enable the mobilization of wood from small holdings owned by 'urban' or so-called 'new' forest owners.

In the Eastern (including the Baltic countries) and Southeastern European countries, forestry currently constitutes an important sector within the national economy (Weiss et al., 2012), especially so in the Baltic countries (Teder et al., 2015) and in Romania (Živojinović et al., 2015). On the other hand, its

economic importance is decreasing in some countries, such as the Czech Republic (Pulkrab et al. 2015; Šišák et al. 2016; Tykkä et al., 2010). In some countries, illegal logging is also still an issue that affects the forest owners' control over their forests.

In addition to the forests' role in national economies, it can be assumed that the traditions in landowning culture influence the feelings of ownership over the natural resources (Matilainen and Lähdesmäki, 2014). Therefore, to be able to study the variation in the manifestation of ownership feelings, the interviewees were chosen to represent countries with different landowning traditions. In Northern Europe, private forest ownership has a long history and the percentage of forest owners in the population is very high (Leppänen and Torvelainen, 2015; Živojinović et al., 2015), whereas in Western and Central Europe private forest ownership is mostly associated with large landownership and changes in it; thus typically the private forests belonged to farmers in Northern Europe and noble families in Western and Central Europe. The countries of Eastern Europe, on the other hand, share a common recent history within the communist regime (Sarvašová et al., 2014; Weiss et al., 2012; Živojinović et al., 2015). During this period, the forested land in all these countries was nationalized and centrally managed by the State (Bouriaud, L. et al., 2013; Šalka et al., 2006; Teder et al., 2015; Weiss et al., 2012; Živojinović et al., 2015). Since the early 1990s, these post-Socialist countries have faced the challenging process of transition (Pachova et al., 2004; Sarvašová et al., 2014, Weiland, 2010), which has also significantly influenced institutional reforms within forestry due to the recognition of private property rights (Weiland, 2010). This restitution process is still ongoing in some countries.

The interviewees were selected using a purposive sampling approach to ensure manageable and informative data related to the phenomenon under study (e.g. Patton, 2002). The criteria for the purposeful selection were length of tenure and size of forest holding. Since the study focused on new forest owners, all the interviewees represented forest owners who had owned their forests for less than 5 years. This has been suggested as a suitable tenure period for examining new forest owners,

e.g. by Karppinen (2012). In addition, we agreed that the forest holding size should be close to the average for the region in question. This criteria was used as a framework for convenience sampling (Etikan et al., 2016). This was implemented by using experts with the knowledge on local level forest owners to identify suitable interviewees in each country. After this, the suggested potential interviewees were contacted. Even though convenience sampling has it's limitations (Patton, 2002) it has been proved useful in identifying the good informants with the limited research resources (Etikan, 2016). As the experts were used to support the sampling process, the sampling in this study also has characteristics of snowball sampling method (Patton 2002). However, it should be emphasized that this selection of interviewees was made to increase the credibility of the empirical qualitative data, not to foster representativeness (Patton, 2002), or make any sample-to-population generalizations. The background characteristics of the interviewees are presented in Table 1.

Table 1. The sample and basic characteristics of the forest owners interviewed.

Number of the interview	Country	Residence (number of inhabitants)	Age, years	Gender	Size of the forest, ha	Duration of ownership	Distance between home and forest, km
1	SK	town (27 000)	34	F	8	5 years	28
2	SK	village (784)	30	M	4	4 years	10.5
3	SR	town (4000)	52	M	7	4 years	3.5
4	SR	city (1 500 000)	36	M	2.5	5 years	320
5	SR	village (1500)	33	M	2	3–-5 years	1
6	CZ	village (300)	36	F	1	2 years	0.3
7	CZ	city (1 million)	42	F	1	5 years	120
8	EE	city (97 000)	22	M	8	1 year	100
9	EE	small town (12 500)	28	F	20	5 years	45--210
10	EE	urban (400 000)	32	M	18	2.5 years	35
11	RO	small urban town (16 100)	25	M	54	1-4 years (several parcels)	40--70
12	FRA	town (6000)	56	M	60	5 years	15
13	FRA	city (170 000)	49	M	76	2-- 5 years	30

14	BE	rural municipality (2540)	56	M	3	4 years	3.5
15	BE	city (200 000)	57	F	1,1	4 years	76
16	BE	rural city (29 000)	46	F	1	5 years	30
17	GER	small rural community (6300)	50	M	3	2.5 years	17
18	GER	rural town (4000)	43	F	2	2 years	0.5
19	GER	rural community (5500)	48	M	2.5	2 years	25
20	FIN	small town (22 000)	38	F	5	8 months	30
21	FIN	rural town (20 000)	29	M	79	13 months	30
22	SWE	municipality (2500)	32 & 40 (a couple responded)	M & F	70	2 years	0.1
23	SWE	city (115 000)	40	M	35	1.5 years	150

The interviews were conducted as thematic interviews. Thus, each interview should be understood more as a discussion rather than asking the exact same questions in the same order. Characteristically, the interviews were flexible conversations which allowed enough room for the interviewers to be responsive to the issues raised by the private forest owners (see e.g. Legard et al., 2003) To stimulate the discussion, wide-ranging open-ended questions were used and a joint semi-structured interview guide was developed. The questions/interview themes were modified from a previous forest owner study related to psychological ownership (see Lähdesmäki and Matilainen, 2014). In the questions, both the motives behind psychological ownership (identity – sense of home included in this – and effectance) as well as the routes leading to the feelings about ownership were taken into consideration. The respondents were asked to describe, for example, what knowledge they had that was related to their forest holdings, how they managed their forests, what objectives they had for their forest ownership, how decisions related to the forest were made, how much they involved themselves in forest management or forestry work and what forest ownership meant to them. The interviews were conducted during summer-autumn 2014 and recorded with the interviewees' consent. The interviews were conducted in the respective national languages.

The data analysis

The dimensions of psychological ownership were used as a basis for the thematic data analysis. In addition, the role of the three routes leading to the psychological ownership experience were analyzed from the interviews. The data analysis utilized, therefore, the idea of deductive qualitative content analysis, as the previous theoretical discussion was used to sort and categorize the data (see e.g. Elo and Kyngäs 2008; Hsieh and Shannon 2005). A common analysis framework was jointly developed to ensure the validity of the analysis process as well as to harmonize the analysis as much as possible. During the first phase, the national research teams read through the transcribed interviews and started to categorize the empirical material based on the dimensions of psychological ownership motives (control, identity and having a home) as well as analysed the different routes leading to the psychological ownership.

In practice, excerpts related to the motives and routes of psychological ownership were extracted from the interviews, and the similarities and differences between these extracts further analyzed so that their diversity was covered. For example, we paid attention to the ways in which the interviewed forest owners contributed to forest management decisions and how independent they felt themselves in making the decisions, which refers to the feelings of control (see Lähdesmäki and Matilainen, 2014a). Similarly, we examined how intimately the forest owners knew their forests and how much time and other resources they invested in their forest – all of which gave us indications of their identity construction as forest owners (ibid.). In accordance with the previous research, we further found that the motive of having a place, i.e. a sense of belonging, was on a practical level strongly integrated with the identity element, and therefore these two were analyzed jointly. The aforementioned aspects of psychological ownership were examined in the case of each interviewed forest owner, after which a summary of each case was written and translated into English.

During the second phase of the analysis process, in order to enhance the credibility and trustworthiness of the analysis, the international team of researchers iteratively discussed their

national findings (Patton, 2002). Furthermore, to ensure the transparency of the interpretation of the data, some quotes from the original interviews were translated into English and included in the Results chapter.

Results

The results showed that the perception of forest ownership was a complex process in which several elements (legal and political context, family ties and tradition, economic situation, etc.) influenced feelings about ownership. However, despite the heterogeneous data, it was clear that in this study owning a forest fulfills one or more of the psychological motives that according to the theory constitute psychological ownership (Pierce et al, 2001; Pierce et al., 2003). The results also revealed the importance of different routes in generating psychological ownership.

Efficacy and Effectance (Control)

In the previous research, the desire to have sovereignty in decision-making related to the forests was found to illustrate well the need or will to control the object of ownership (Lähdesmäki and Matilainen, 2014). Thus, issues related to decision making were taken into focus in analyzing the results related to the efficacy motive of this study. According to the results, practically all of the new forest owners interviewed had or wanted to have a significant part in the decision-making related to their forests. However, there were interesting variations in how much the forest owners were willing to share the decision-making with others. Also, several factors were found that the new forest owners experienced as restricting their control power (the control route), as well as the extent of their acceptance of these restrictions (experienced violations towards the ownership feelings).

Some interviewees highlighted the fact that they were the sole persons responsible for the decision-making and, for example, their families were not interested in forest-related issues. They also emphasized that the forests are used to according to their own aspirations, regardless of the "sensible way to manage forests". The owners wanted to be able to carry out their own individual ideas,

impacting the environment as they preferred to see it, which also meant keeping the control and decision-making in their own hands. At the same time, they felt that they had the necessary means and knowledge to make the decisions, even though they realized that their decisions might have been contradictory to mainstream forest management guidelines as the following citation illustrates.

> *"I'm always torn back and forth. There is always what makes sense and on the other hand what makes less sense* [regarding the economic forest management]. *I have to find a way in the middle. Whose needs will you meet? Nature or economy? We have the luxury that we don't have to live off the forest and gain income from it. We can make our forest so that […] we just like it. I just want a beautiful forest. I want different trees. Exactly. And I think to myself: when I walk I'd like to see different trees.*" (Int. 19)

Some interviewees, on the other hand, expressed strong trust, especially in public forest advisors and their own family members, in decision-making. In these cases, this was not seen as a problem or as undermining the control power of the interviewees, as they were ready to share control. Most of the forestry work was executed by professionals, and sometimes the owners did not have proper knowledge of what had actually been conducted. Their own work in the forest played more of a recreational role. Any of this was not, considered as a threat to their control power either.

> *"Even though I own the forest, generally forests in our family are regarded as common property […] I, father, mother, sisters, brothers-in-law… all family managed the forest."* (Int. 6)

In some countries, it was obligatory to contact a forest association or an administrative body when forest management activities were planned. In fact, it came out clearly that the owners felt their ownership threatened or diminished by *public forest administrations* due to the strict and binding regulations concerning forest management or timber sales. This was seen as an unfair situation. The

owners also expressed that they perceived themselves as having the necessary knowledge and means to manage their forests, but were not able to do so because of the regulations.

> "*At the moment you cannot call yourself as a forest owner […] I think the forest property is not fully respected. I don't believe that your rights are guaranteed somewhere in the land register. The owners are abused by forest districts because they give you the market share."* (Int. 11)

> *"I am not allowed to take care of my property because of the law."* (Int. 2)

There were also indications that *the traditions of previous generations* in using the forest played a role in forest management decisions. Family traditions were likely to be continued as the owners felt that it was their responsibility to take care of the forest in the similar manner as their parents. Thus, it can be said that the new forest owners' perceived control was limited by family tradition. Therefore, they were not that interested in new, innovative ways of managing forests. Similar results have been found in previous research (Lähdesmäki and Matilainen, 2014a). However, the owners did not express in the discussions that they felt their own ownership feelings violated by these limitations. Similarly, the interviews also indicated that traditional gender roles still influenced the forest management decision process. Female forest owners in particular mentioned that they sought advice and guidance from male family members.

> *Yes, I was involved in management of my forest with my father and before that with my grandfather and learned from them"* (Int. 3)

> *"It's my husband with whom we make the decisions. And then the experts."* (Int. 20)

Especially in the Northern European interviews, the forest owners emphasized roundwood production and working themselves, at least to some extent, in their own forest. In addition, they believed that forestry was important from the standpoint of the national economy. The *forest was seen more as a 'production unit' of various types of goods* than as a resource solely for their own consumption. This

was not seen as an unfair situation violating their ownership towards the forests, but more as the state of the art. Thus, the interviewees felt the need to justify their choices if they were not following the mainstream production orientated forest management practices or their perception of it.

> "*We like to do as much as possible (planting, cleaning) […] but when you work full time, then it has to be only in the evenings…*" (Int. 22)

> *"I try to manage (the forest) according to the regulations…"* (Int. 23)

Knowledge, or lack of it, has been found to influence the perceived control of the forest owners regarding their forest holdings and thus to their feelings of efficacy (Hujala et. al., 2007). There was a lot of variation in the data between the interviewed forest owners on their *knowledge related to forest management*. Those having some knowledge of forest management were able to describe the forest management conducted in their forests in a quite detailed manner. Some were even very eager to gain more professional knowledge related to forests and forest management. These owners also seemed to feel that they were "in control" of their forests and forestry decisions. On the other hand, those with little knowledge perceived less control power over their forests. Interestingly, however, the lack of knowledge and the limitations that this lack entailed for their control power related to forest management were something that the interviewed forest owners were ready to accept rather than feeling it to be problematic. This may refer that the control power dimension was not very significant to these forest owners.

> *"Well… I read the management plan about the age distribution of my forest and I understood correctly, it will take another 20-25 years until the next harvesting…"* (Int. 23)

> *"I think that I am a typical one [forest owner] in that sense that I do not know anything about the matters [forest management]. Even though I live close by and the forest has always been there…[…] but that is just me"* (Int. 21)

The summary of the restrictions of the forest owners' perceived control power is presented in table 2. Interestingly, there did not seem to be a clear connection between a strong experience of the control element of psychological ownership (i.e. those highlighting their own role in decision-making) and the acceptance of perceived restrictions to the control power. For example, those forest owners who highlighted their own role in decision-making could still accept as granted the expectations of providing benefits for the national economy, and those willing to share the decision-making power still considered the limitations by local authorities on forest management unfair.

Table 2. Summary of the identified restrictions to the forest owners' perceived control related to their forests.

Restrictions to the perceived control	Acceptance of the perceived restriction
Local authorities	property rights seen unfairly to be violated by illegal activities and/or authorities
Tradition of forest management within the family affects management decisions and limits autonomous control by the owner	not considered a restriction in the analyzed cases
Traditional gender roles may limit control by female forest owners.	not considered a restriction in the analyzed cases
National economics and environmental demands	expectations of providing benefits for the national economy accepted as granted. expectations of providing environmental conservation and environmental benefits more globally accepted by some respondents, contested by others.
Lack of knowledge	accepted, only those already well aware of the forests were interested in acquiring further knowledge

Identity

According to the results, the interviewees used their forests to build different kinds of identities and thus the forests fulfilled for them one important motive of the feeling of psychological ownership. However, they seldom used the forests to build "a forest owner" identity as such. Instead, the forest was seen as a link to other identity elements. It was evident that even for the new forest owners, the forest represented foremost the *link to the family, chain of generations and local culture.* Some

interviewees mentioned that they had grown into their forest ownership and that the forests are an integral part of family life in rural areas, even though themselves they did not have yet a long history as actual forest owners. Forest ownership was still referred to as "*a family tradition to be proud of*." Forest ownership was also described as an integral part of their desired lifestyle – a forest was a place where they could fulfil their ideas of 'a good life' and thus invest themselves in the forest as well. Therefore, it was very important for the interviewed forest owners that their forest should stay within the family. They also had, in general, good knowledge of the forest's history and its links to the family history.

> *"I have always been raised to think that the forest is the matter of generations. […] The forest is a source of livelihood in a way, but there is some other value as well, some kind of emotional value. […] There is also some kind of mental legacy that you transfer to the children and so on… It is a continuation."* (Int. 21)

Even the interviewed forest owners from the Eastern European countries highlighted the role of the forest as a link to family and heritage. The communist era and the possible loss of forests to the State seemingly strengthened the importance of the forest as a link to heritage. In some cases, the owners knew that the forest had been in the family for centuries and felt it important to get it back again. In general, the owners did not consider selling the forests. Similar results have been found elsewhere, e.g. in Estonia, concerning land restitution (Grubbström, 2011; Jörgensen and Stjernström, 2008).

> *"Our family has always owned fields and forests. After the social changes in 1989, the state returned it all within a restitution process and now I understand the forests as a natural part of my life […] The aim is to keep the forest for the future generations."* (Int. 6)

In some cases the forest was used to build an identity as *a landowner*. It can be speculated that owning land property was important as such, there not being much difference whether the land was forested

or some other type of land. In these cases the forest could have been bought, but it was seen as the beginning of a heritage rather than a purely economic investment. Therefore, it was important that the forest should also remain in the family for future generations.

> *"There is a strong emotional bond already. I can't imagine selling it. […] It is not a flat in Tallinn that you buy, sell and exchange. It's different."* (Int. 10)

> *"Forest ownership means that you are a 'king'. It is like independence – if you have the land, you are The man. You're independent. Great trump ace in the pocket in case something should happen."* (Int. 9)

> *"I am planning to buy forests. Because I think it represents some kind of reserves in cash for future generations."* (Int. 3)

A third way to use forests in identity-building found was to establish a *link between the environment and the self*. Some considered the forest as a personal legacy for environmental conservation and wanted to do their part in creating a greener world. The economic role was not as important, but the owners still wanted to keep the forest in good condition for the next generation.

> "*They are ethical, ecological [objectives for the forest]. The forest, it is one of the major global stakes. To see how we can manage to reconcile ecology and economy*." (Int. 13)

> "*The ownership means safeguarding our environmental heritage*." (Int. 16)

Discussion and conclusions

According to the results of this study, the new forest owners, even though they came from different contextual and cultural environments, clearly had ownership feelings towards their forests. The interviewees spoke possessively of their forests and the forests fulfilled the motives of psychological ownership for their owners. Thus, based on our results, it can be questioned whether the new forest owners are in fact as detached form their forests as has been suggested, especially as the link between

the forests and family heritage seems to be very strong even among the new forest owners. More research on this topic is, nevertheless, warranted to study the issue further.

The increased psychological ownership of natural resources has been found to increase responsibility and active stewardship towards the resource that is felt to be owned (Matilainen et al., 2017; Pohja-Mykrä, 2014). There is no reason why this could not work in the forest context as well (see e.g. Lähdesmäki and Matilainen, 2014a; Matilainen et al, 2017). Thus, it is worth the while to consider how the existing ownership feelings of the new forest owners could be further strengthened to support active stewardship. All the interviewed new forest owners highlighted control power over their forests. Controlling possibilities, or actually perceived controlling possibilities, has been suggested to be one of the most important routes leading to the experience of psychological ownership (Pierce et al., 2003). However, the results reveal several factors that seem to limit perceived control, either consciously or unconsciously understood by the new forest owners. Some of these limiting factors were seen as "acceptable" (not violating the ownership feelings), while others were not. If the limiting factor is unconscious or accepted by the forest owners, it may be difficult to overcome it in order to increase the perceived control and thus potentially the psychological ownership of the forest owner. On the other hand, if the limitations to the control power are contested by the new forest owners (seen as violations against the experienced psychological ownership), they intrinsically attempt to change the situation and it may be easier to overcome.

Similarly, in using forests for identity building, it is important to understand what kind of identity, if any, is built through the forest holding by their new owners. The results of this study clearly demonstrate that the forests seem especially to have a mediating role in identity-building for their owners. The role of forests as a link to family or heritage was very important regardless of the forest-owning context or the short forest-owning tenure. In the cases in which the forest was bought, the interviewees described it as a "start of family heritage". In the Eastern European interviews it also came out that losing control over the forests during the communist regime did not seem to diminish

the ownership feelings. On the contrary, in some cases it seemed to strengthen the link of the forests to the family history and identity. This highlighted the importance of the identity dimension in the psychological ownership. Even though there is already increasing evidence for the link between forest ownership and family heritage in forest ownership research (see e.g. Grubbström, 2011; Markowski-Lindsay et al., 2012), it has perhaps still been underestimated as an objective for forest ownership, and in the current extension service provision, especially in relation to the new forest owners.

However, other ways in which the new forest owners use forests in their identity building were also found in this study, such as land or property owner identities and identities associated with the environment and environmental conservation. Supporting the desired identity building, for example in the forest management services, may in turn further develop the ownership feelings of the new forest owners towards their forests. It is also worth the while to note that the identities that the new forest owners use forest owning to support may not be similar to those that previous forest owner generations linked to the forest holdings. . For example, the willingness of the forest owners to contribute to common goals in the national economy by the provision of roundwood to forest industries is typically linked to traditional approaches to forest ownership (e.g.Nonić et al., 2013; Rämö and Toivonen, 2009). On the other hand, the tendency to provide common environmental goods may originate more from individual 'modern' motivations (e.g. Hogl et al. 2005; Nonić et al., 2013) ,which may increase among the new forest owners.

Based on the data, it can be further speculated that the context of the forest ownership and the local culture seem to have an impact on how the forest ownership is perceived by owners and which elements influence the development of the feelings of ownership. Previous research has shown that, along with the socioeconomic structures, cultural aspects are also linked to forest management (e.g. Canadas and Novais, 2014; Karppinen and Berghäll, 2015; Kuuluvainen et al., 2014). In addition, the role of forests in society and related discourses impact the meaning of forest ownership at the

personal level. For example, the various phases of urbanization, the tradition of land ownership or the role of forests in national or regional economics may affect the common demands on forests, public discussion of the use of forests and therefore also the meaning of forest ownership for the owners themselves. Understanding the role of forest ownership culture from the perspective of the psychological ownership of forests may help to understand ongoing changes in the meaning of forest ownership and the reasons for new owners' forest management behavior. To verify this, further research is warranted, but the indications found in the data of this study suggest that the differences between different forest-owning cultures in perception of forest ownership seem to relate especially to the identity element of psychological ownership. This can be expected, since culture plays a significant role in identity-building in general (e.g. Cóte, 1996). However, the context of forest ownership has also affected experienced control over private forests. It can be assumed that the more important forestry is in the national economy, the greater the normative structures influencing individuals' psychological views. Similarly there were indications that in more urban areas forest ownership often seemed to be regarded as an individual project. According to Greenfield (2013), people are becoming more individualistic along with urbanization, increased wealth and technological development. Therefore, it can be speculated that in a more urban society personal motivations, i.e. the inner values of the forest owners, have a more essential role to play and common benefits at the national or global levels are no longer as important, unless they can be directly associated with personal motivations. This tendency towards individualism is a challenge for policy makers as the number of urban forest owners increases around Europe (Živojinović et al., 2015).

Some limitations of the data in interpreting the results must be emphasized. This qualitative study aims to increase our understanding of the phenomenon in question (cf. Mason, 2010), i.e. the elements influencing the perception of psychological forest ownership of new forest owners in various forest owning contexts. Since the empirical data in the study was rather limited, generalizations should be made with caution, and the results should be confirmed by quantitative studies. In addition, the

majority of the interviewed forest owners had received their forests as inheritance, even in some Eastern European countries. This is bound to have an impact on the results.

Nevertheless, based on our results, it can be said that predicting forest owners' forest management behaviour based only on their socio-democraphic characteristics may become even more difficult in the future. This highlights the need for research utilizing social science theories in explaining forest owners' behaviour. This study presents one alternative avenue: the psychological ownership approach.

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