

Female forest owners as a market segment? Results from a marketing experiment in the context of a small forest service enterprise

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Abstract

Broad social changes are reflected in the forest owner structure, which has become increasingly diverse both demographically and in terms of objectives and values. This naturally also impacts forest owners' interest towards using their forests as well as to their interest in purchasing various forest management services. This development highlights the need for service providers to better segment their clientele and plan their market communication accordingly. However, a surprisingly small amount of research has focused on the impact of marketing arguments for various forest owner segments.

This study provides a first attempt to analyse, through a real-life marketing intervention, how effective marketing arguments are at promoting first thinning to female forest owners. For this, three marketing messages were created and sent out to 300 forest owners in Finland. One message explained the importance of first thinning to provide maximal economic income from forests, one explained the importance of first thinning in relation to biodiversity protection and climate change mitigation, and a control message included no value arguments. The results indicate that contrary to our hypothesis, the marketing message with the economic arguments raised more interest towards the first thinning service among female forest owners than the one with biodiversity protection and climate change mitigation values. The results further show that the control message was found to generate the least interest towards first thinning. This indicates that incorporating value arguments do improve the impact of a marketing message.

Keywords: market segmentation, female forest owner, marketing argument, economic values, biodiversity values

Introduction

Forest owners are becoming more diverse (Weiss et al. 2019). Accordingly, their values and objectives for their forests have become more varied. This naturally impacts their interest towards utilizing their forests and consequently also their interest in purchasing forest management services (e.g. Haugen et al. 2016). Consequently, as forest owners cannot be considered as homogenous a group as previously, forest management service enterprises must find alternative ways to tailor their communication to reach forest owners and to market their services to forest owners who may have considerably different values and objectives than previous generations (e.g. Hujala et al. 2013, Andersson and Keskitalo 2021). All this development highlights the need for service providers to better segment their clientele. Segmentation can be defined as the process of dividing existing markets into smaller, distinct subsets of customers that behave in a similar manner, have similar needs, and who can then be reached with a distinctive marketing

strategy (Bennett 1995, pp. 165–166). Market segmentation thus helps firms better understand and meet their customers' needs, and therefore enhance business profitability and competitiveness by concentrating their marketing energy (e.g. McBurnie and Clutterbuck 1988, Dibb 1998).

Segmentation, as such, is not a novel idea in forest owner research. Kuuluvainen, Karppinen and Ovaskainen introduced a quantitative market segmentation approach into private forest owner research already in 1996, and one of the main strands in forest owner research during the past decades has been creating forest owner typologies, which may be seen as forest owner segments. Their main aim is to better understand the profile of private forest owners and the types of objectives they have for their forests (e.g. Boon et al. 2004, Hogl et al. 2005, Ingemarsson et al. 2006, Hänninen et al. 2011, Urquhart 2012, Malovrh et al. 2015, Stanislovaitis et al. 2015, Kumer and Štrumbelj 2017, Karppinen et al. 2020) and further how the different forest owner types can be reached for offering advice (Hu-

jala and Tikkanen 2008, Leskinen et al. 2009, Butler et al. 2017). Even though these typologies provide valuable information on forest owner objectives and preferences and are commonly used to inform forest and environmental policies and for market-based service provision (Hujala et al. 2013), they are still not often utilized as a practical segmentation tool, especially by small or medium-sized forest service enterprises (SMEs). One reason for this may be the challenges in connecting the typologies to the customer information available in the forest companies' customer registers and thus identifying the forest owners belonging to each type. It further raises the question of how well current marketing messages actually fit the values of various forest owner groups.

Although previous research has focused, for example, on the role of knowledge, networks, and lifestyle, along with social environment and decision-making styles in forest owner information acquisition (e.g. Hujala and Tikkanen 2008, Hujala et al. 2013, Häyrinen et al. 2015, Butler et al. 2017, Hänninen et al. 2020) and, even creating forest owner segments based on these, a surprisingly small amount of research has focused on the content of this information and even less on its transformation into marketing messages of forest management services. While previous studies present a basis for speculating on the suitability of the various marketing message types for the variety of forest owner segments, empirical experiments of their impact are, however, largely missing.

Our study contributes to this discussion by analysing, through a real-life marketing intervention, how effective various marketing messages are for promoting forest management services to certain forest owner segments. The focused service, first thinning, was selected together with the enterprise taking part in the intervention. This service was selected because its implementation was thought to be topical for most of the enterprise's customers. The market segmentation was based on gender. Gender was selected as a segmentation criterion for two reasons. First, even though gender presents just one potential criterion for segmentation, like other demographic criteria, it is a background characteristic that can generally be easily found in the customer databases of forest-based enterprises. Second, gender has been argued to influence the variety of forest-related decisions, such as the frequency of harvesting, cleaning, and supplementary planting (e.g. Lidestav and Ekström 2000, Lidestav and Berg Lejon 2013). Previous research has further indicated that while both male and female forest owners consider timber production values and ecological values as important aspects in their forest ownership, women tend to have stronger ecological and recreational forest values along with environmental and human-centred forest management attitudes compared to men (Nordlund and Westin 2011). These findings have been confirmed by Umaerus, Högvall Nordin and Lidestav (2019, p. 56), who stated that "*female forest owners value forest resources that are not regarded as traditional production values to a*

higher extent than male owners, such as those that have an environmental, recreational or social value".

Based on these justifications, it was well-argued and interesting to test whether gender would provide an effective market segmentation variable in the forest ownership context. Accordingly, we hypothesized that market argumentation related to biodiversity protection and climate change mitigation would raise the interest of female forest owners towards first thinning services more than traditional economic argumentation. Our hypothesis was further supported by the argument that traditional economic rhetoric to encourage forest owners to become more active in forest management practices may no longer be effective for new forest owner types (Lindkvist et al. 2012, Bjärstig and Sténs 2018, Matilainen et al. 2019). The aim of this experiment was thus to explore which of the used marketing arguments, i.e. economic or ecological, is the most effective at arousing the interest of the female forest owner segment towards the first thinning service.

Market segmentation as a theoretical concept

Segmentation is one of the dominant concepts in marketing research (e.g. Wind 1978, Wind and Bell 2007). The idea of market segmentation originated from an attempt to challenge the idea of perfect competition, which is a characteristic of classical economic theory. Consequently, market segmentation acknowledges that while certain heterogeneity is an inherent aspect of contemporary consumption, marketing efforts need to be adjusted to varied consumer requirements (Smith 1956). According to the widely accepted definition, market segmentation thus "*involves viewing a heterogeneous market as a number of smaller homogeneous markets, in response to differing preferences, attributable to the desires of customers for more precise satisfactions of their varying wants*" (Smith 1956, reprint 1995, pp. 64–65). That is, the members belonging to the same market segment share something in common, which consequently helps business representatives identify distinct groups of customers whose behaviours differ from others (Goyat 2011).

Market segments are not naturally occurring customer groups in the marketplace but are rather based on and constructed through managers' strategic perceptions, and therefore they are a significant tool for management (e.g. Tynan and Drayton 1987, Wedel and Kamakura 2002, Goyat 2011). The major challenge in market segmentation is to identify consumer groups that are internally homogeneous enough to be approached with similar marketing arguments but still economically viable to be addressed as a separate group (e.g. Tynan and Drayton 1987, Wedel and Kamakura 2000, Wind and Bell 2007). More specifically, the success of segmentation can be evaluated by reflecting it against several criteria (e.g. Evans and Berman 1997, Wedel and Kamakura 2000, Kotler et al. 2002). Accordingly, the size and purchasing power of the market segment

needs to be measurable. Accessibility as a criterion for market segmentation highlights that segment members are reached through promotional or distributional efforts, while substantiality concerns the profitability of the segment that is to be measured in relation to the size of the organisation providing the products or services. In addition, market segments arguably need to be durable or stable over time, and they can measure the needs and attitudes of customers.

The procedures of market segmentation can be roughly divided into two categories, namely *a priori* and cluster-based (*ad hoc*) methods (Green 1977). The *a priori* method is usually based on anticipated variables, such as product usage, loyalty, demographic, or socio-economic characteristics, while the segmentation variable in the *ad hoc* method is chosen after forming a more in-depth perception of the consumers through data collection (Tynan and Dayton 1987). The selection of the segmentation base is considered to be dependent on issues such as product type, the nature of the demand, and the media available for marketing communication (Chisnall 1985). Accordingly, previous research has demonstrated a variety of variables that can be used as a basis for segmentation. Categorized under broader themes, the potential segmenting variables can include geographic, demographic (e.g. age, gender, socio-economic status, family size, life cycle, income level, occupation, education), psychological (e.g. personality factors, attitudes, risk, motivation), psychographic (e.g. lifestyle, activities, interests, opinions, needs, values) and behavioural (e.g. brand loyalty, usage rate, benefits sought, use occasions) variables (e.g. Tynan and Dayton 1987, Kotler et al. 2002). Even though presented here as separate categories, the aforementioned segmentation variables are rarely used alone, but rather a combination of two or more is more usual (Tynan and Dayton 1987).

In this study, forest owner segmentation was based on gender. Demographic variables have very commonly been used as the base for segmentation due to easy access of such consumer data (Tynan and Dayton 1987). Still, it should be noted that using demographic variables has also engendered criticism. More specifically, their selection as the only basis for segmentation has sometimes been considered insufficient (Stanton 1978), and while characterized as descriptive rather than causal factors, demographic variables are suggested to not provide as successful a segmentation base as some other variables (Frank et al. 1967). While this criticism stems from traditional consumer contexts (e.g. the consumption of daily goods), the suitability and function of demographic variables as the segmentation base in forestry-related consumption decisions has not been empirically tested yet.

Material and methods

The experiment concerning the effect of segmentation and marketing argumentation was carried out in collaboration with a forest-based service enterprise. In other words,

the examined service was selected by consulting the enterprise, and the female forest owners forming the marketing segment in the experiment were all existing customers of the enterprise. The enterprise provides a broad variety of services to its customers, for example, by assisting in timber trade, and planning and executing various forest management services. The enterprise was established in 2004 and has 10–19 employees (depending on the season).

Our study area is based on the service area of the abovementioned enterprise, namely in the South Ostrobothnia region in western Finland. Nearly 52% of the region is covered by forestland¹ (Karppinen et al. 2020), and most of the forests (85%) are privately owned. The average size of a forest holding in the region was 31.3 hectares in 2020 (Metsäkeskus 2021). The proportion of women forest owners in the study region is slightly lower than the national average. Accordingly, 37.4% of forest holdings in South Ostrobothnia were owned by women in 2020, while the corresponding national figure was 42% (Metsäkeskus 2021). Agriculture has a larger importance in the region than in Finland on average, and most of the region can be defined as rural (Regional Council of South Ostrobothnia 2017).

Three marketing messages were created to test the impact of various market arguments on female forest owner perceptions concerning first thinning service. One message explained the importance of first thinning for providing maximal economic income from the forest later on, the second explained the importance of first thinning in relation to biodiversity protection and climate change mitigation, and the third (control) message included no value attributes at all. Phone numbers were the most reliable communication information found in the enterprise's database, and therefore text messages were first sent out to the forest owners. The messages included a link to a web page providing more information on the first thinning service. For this, the enterprise's SMS message profile and website were used.

The forest owners were selected from the customer register by adopting a purposeful selection method (Patton 2002) with two criteria, i.e. only female forest owners with a forest holding size of four hectares or more were selected for the experiment. Gender (based on the forest owner's first name) and forest holding size were, in addition to the contact information, the only available data that the enterprise had in their customer register. We selected gender as a segmentation criterion based on the findings of previous studies which have shown that gender influences forest owner's decision-making (e.g. Lidestav and Ekström 2000, Lidestav and Berg Lejon 2013). We further included only those forest owners whose forest holdings were four hectares or more to increase the likelihood that there was a need for first thinning services. To ensure the similarity of each group receiving different marketing

¹ Forestland refers to a forest in which the potential annual increment for the rotation period is at least 1 cubic metre per hectare per year (Finnish Statistical Yearbook of Forestry 2014).

message, the forest holding sizes of each respondent group were standardized. This was done to ensure that each group had a similar number of owners with larger forest properties along with owners with smaller holdings. The mean forest holding size in each group (35.5–37.5 ha) represents relatively well the average forest holding size in the region (Metsäkeskus 2021).

The marketing messages regarding first thinning services were sent out to 300 randomly selected female forest owners of the total 608 female forest owners listed at the customer register. Most of these forest owners did not live within the South Ostrobothnia region and can thus be categorized as absent forest owners. Of these 300 forest owners, 100 ones (mean forest holding size within this group is 37.5 ha) received a message highlighting the importance of first thinning through economic arguments. The text message read: “Dear forest owner! Did you know that a properly timed first thinning is important for getting the best possible return from your forest? See more: [link to website]”. The link in the text message led to the forest company’s website, describing the economic effects of first thinning in more detail (including information such as how late thinning reduces logging fell by up to 30 m³/ha and final felling income by up to € 1500 / ha). Similarly, 101 female forest owners (mean forest holding size is 36.8 ha) received a text message justifying first thinning based on arguments related to biodiversity protection and climate change mitigation. This message read: “Dear forest owner! Did you know that with proper first thinning planning, you affect the natural values and carbon sequestration capacity of your forest? See more: [link to website]”. The link included information on how a well-growing forest binds carbon and thus maximizes the role of forests in climate protection and how a well-planned first thinning improves the biodiversity values of the forest. Finally, 99 female forest owners (the so-called control group, mean forest holding size is 35.5 ha) received a text message that lacked any economic or biodiversity protection and climate change mitigation arguments. The text message stated: “Dear forest owner! Did you know that first thinning is the most important thinning of a forest concerning its future use? See more: [link to website]”. Behind the SMS link was a neutral description of first thinning without any economic or biodiversity protection and climate change mitigation arguments.

A few days after the text messages were sent, the forest owners were called by phone and enquired about the possibility of discussing how the message and associated arguments succeeded in evoking their interest towards first thinning service. Out of a total of 300 forest owners who received the text messages, 198 forest owners were reached by phone. Of these, 113 forest owners agreed to a short phone survey, while 85 refused. The most common reasons for refusal were a busy schedule and reluctance to answer telephone surveys, along with the telephone number in the female forest owner’s contact information belonging to her spouse and the female forest owner not being reached. In

the case of 102 forest owners, the telephone number was either not in use or they did not answer the phone at all.

The phone survey with forest owners lasted up to 15 minutes, and it was conducted based on a semi-structured questionnaire. Accordingly, the forest owners were asked how well they remembered the messages concerning first thinning, what kind of responses the messages evoked, and whether the arguments influenced their interest towards the first thinning services. In addition to questions related to the text message and the marketing arguments, we also asked some background information concerning the respondents, such as age, duration of forest ownership, the frequency with which respondents visit their own forests, what forest ownership means to them, how they make their forest-related decisions, and whether and how they participate in practical forest management activities. The phone survey was carried out between October and December 2020.

Forest owner responses to the phone survey were also recorded with the respondents’ permission to ensure the quality of the results, as any unclear responses could be rechecked later on, if needed. The data were analysed using the SPSS software package, version 25 (SPSS 2017) and mainly by using descriptive analysis and cross tabulations (χ^2 -test) due to the categorical nature of the variables. In addition, the Kruskal-Wallis test was used to analyse the differences between the groups (Metsämuuronen 2005).

Results

Descriptive results

The age of the respondent female forest owners varied from 27 to 91 years, the average being approximately 61 years. The average age reflects well the situation in Finland in general, as the average age of Finnish forest owners was estimated at 62 years in a large national survey (Karppinen et al. 2020), and the average age of Finnish forest owners in the South Ostrobothnia region in 2020 was 61 years (Metsäkeskus 2021). Characteristically, respondents had rather long histories as forest owners: 10 per cent of the interviewees had owned their forests for five years or less, while approximately 20 per cent of the respondents had owned their forests 11–20 years and approximately 20 per cent for more than 30 years. Most female forest owners (20%) visited their forests once or twice per year, although some respondents (~10%) mentioned visiting their forest every month, or even every two weeks. The average number of annual visits was 7.2 (median 2).

Decision-making related to forest management was typically shared, most often with family and forest professionals. Only 16.1% of respondents reported making their forest-related decisions independently. Instead, 60.5% of female forest owners stated that they discussed forest-related decisions with their family members, most often with their spouses (32%) or other (male) relatives (13.4%). Forest professionals and/or advisors were also typically involved in the decision-making, and 41.2% of

Table 1. The age, number of forest visits, and duration of forest ownership division within the groups that received marketing messages

	Age, years (mean)	Number of forest visits / year (mean)	Duration of forest ownership in years (mean)
Respondents in the economic marketing argument-group (n = 37)	61.5	8.4	20.8
Respondents in the biodiversity protection / climate change mitigation marketing argument-group (n = 32)	62.2	6.4	19.5
Respondents in the control group (n = 44)	63.5	6.8	22.5
<i>p</i> (Kruskal-Wallis Test)	0.866	0.280	0.541



Figure 1. The meaning of forest ownership to the respondents

the respondents mentioned them as important influencers in the process. Furthermore, most female forest owners did not conduct any practical forest management activities by themselves. The characteristics of the groups having received the different marketing messages were tested to ensure similarity of the groups. Table 1 provides details of the respondents.

For the respondents, forest ownership was most often perceived as a link between generations, and thus the heritage values associated with forests were highly appreciated. Similarly, female forest owners considered economic return expectations and the chance to preserve nature as important values related to forest ownership. Figure 1 shows a summary of the issues that respondents raised in the form of a word cloud. The values related to ownership that were most often emphasized in the responses are presented as larger text in the word cloud than less-frequently mentioned values.

Comparisons between the marketing arguments

The effectiveness of the marketing messages was tested by comparing the groups mainly by using the χ^2 test due to the type of the data received from the phone survey. The results showed that even though most female forest owners did remember receiving the marketing message as a text message (Figure 2), there were no statistical differences

between the groups ($p = 0.614$). We observed, however, some indications that, when asked directly, the marketing message based on economic argumentation raised more interest among the women forest owners than the message based on biodiversity protection/climate change mitigation arguments (pairwise comparison: $p = 0.091$), though no statistically significant differences were observed between the three groups ($p = 0.127$) (Figure 3). None of the marketing messages motivated the forest owners to open the link attached to the text message, and only 6.8% of all respondents mentioned that they opened the link. Thus, the results clearly show that a text message, in the form as used in this experiment, is not a very effective way to communicate with female forest owners.

The information provided on the web pages was shortly summarized by the interviewer for respondents who mentioned that they had not opened the link in the text message. After this, respondents' interest towards the first thinning service was further inquired. Even though considering the percentage division, the message primed with the economic arguments did seem to raise more interest than the control message or the marketing message with ecological arguments, the differences between the three groups were not statistically significant ($p = 0.165$). However, the pairwise comparisons revealed that the economic message

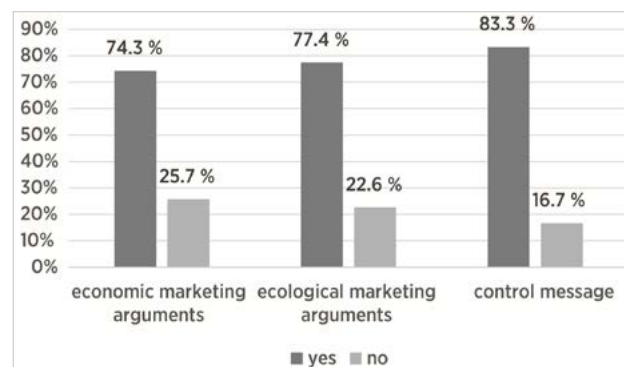


Figure 2. Responses of the respondent groups to the question of whether they remembered receiving the text message in the first place (n = 73)

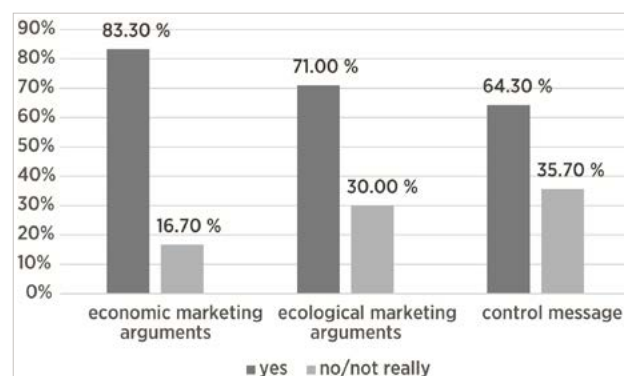


Figure 3. Responses of the respondent groups to the question of whether the text message raised any interest towards the first thinning service (n = 63)

was slightly more interesting than the control message ($p = 0.050$), but no significant differences were observed between the message primed with ecological arguments and the control message ($p = 0.612$). Interestingly, of all three marketing messages, the control message raised the least interest among the forest owners. This indicates that some type of value argumentation is important for the marketing message (Figure 4).

Respondents were also asked to evaluate whether they would have wanted more or other types of information to be provided in the marketing message. Thus, those respondents who received the message primed with economic argumentation were asked if they would have wanted some more biodiversity protection and climate change mitigation-related information to support their decision-making regarding the first thinning, and *vice versa*. The results show that respondents who received the marketing message with biodiversity protection and climate change mitigation argumentation mentioned that they would like more economic information to be included. They also mentioned that this information would have a significant impact on their decision-making. On the other hand, the respondents who received a marketing message with economic argumentation did not believe that including biodiversity protection and climate change mitigation information would have had any impact on their decision-making. This differ-

ence was also statistically significant ($p = 0.024$). Thus, for the forest owner segment under investigation in this study, the economic argumentation seems to be more important than the ecological or climate change mitigation argumentation (Figure 5).

The survey additionally included an open-ended question, where the female forest owners were asked to describe what type of general information they would appreciate when making forest management decisions. The responses to this question were rather similar in each respondent group. Accordingly, female forest owners most often emphasized the need for accurate economic information to make proper decisions (25% of respondents). More specifically, the need for economic information was related to issues such as what level of income could be expected from forest management practices, the costs of various management activities, what tax-related consequences various forest management decisions bear, and whether any economic subsidies are available for various forest management activities. In this open-ended question, only a few respondents (6% of respondents) brought up the need for more ecological information to back up their decision-making. We note the possibility that female forest owners did not consider ecological information as important as economic information, but it is also possible that some respondents considered themselves to already have enough ecological information for making decisions. The ecological information that was mentioned was related to the need to learn more about forest management and its relationship with climate change and carbon sequestration. A couple of respondents also mentioned that it would be important to receive more information on the environmental consequences of different forest management methods (clear cut, continuous coverage). Twenty-seven respondents (24% of respondents) either had no need for further information or could not specify what kind of information they required. In the latter case, the respondents had usually outsourced all their forest-related decision-making to someone else, most often to their spouses.

In addition to various knowledge needs, the respondents also highlighted the nature of the information needed for decision-making. Accordingly, the information should be concise, practical, easily understandable, and preferably linked to a person's own forest holding. Some respondents noted that the language and terms that service providers and forest professionals use is occasionally challenging to understand. For this reason, respondents wished that professional forest-related terms and concepts should be explained in more detail.

The results also showed some indications that in case of marketing first thinning, younger forest owners tend to have a more positive approach to biodiversity protection and climate change mitigation than older respondents. Unfortunately, due to the limited amount of data, this could not be tested statistically (Figure 6).

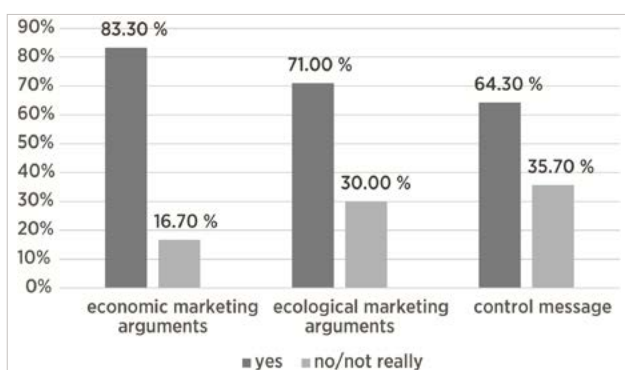


Figure 4. The responses of different groups to the question of whether the marketing message presented on the webpage raised any interest in them towards the first thinning service ($n = 108$)

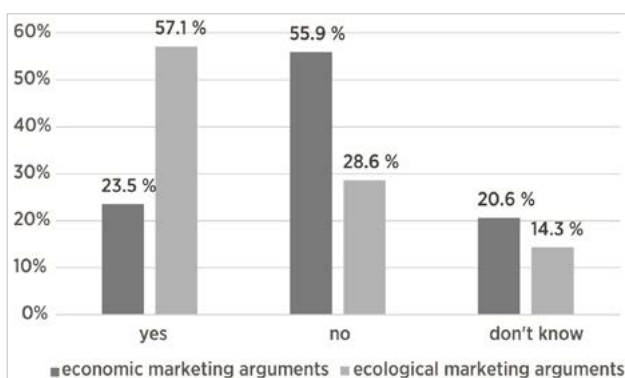


Figure 5. Respondent opinions of whether the marketing message should also have included other information ($n = 62$)

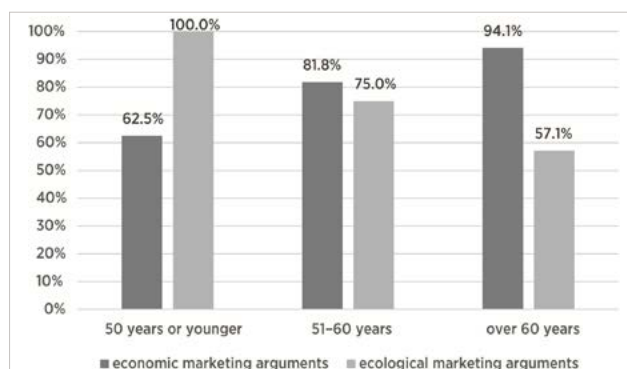


Figure 6. Comparison of the respondents based on how the marketing messages raised interest in the respondent age groups

Discussion and conclusions

In this study, we carried out a real-life experiment to examine the effect of segmentation and marketing argumentation in relation to the first thinning concept among female forest owners. Based on our results, we conclude that the marketing arguments sent out as text messages did not work well for this forest owner group. Despite remembering the text message, most forest owners were not interested enough to open the link in the message to explore more arguments for carrying out first thinning. This observation seems to contradict with previous marketing research, which has highlighted the effectiveness of text message marketing in both branding and stimulating customer responses (e.g. Rettie et al. 2005). One reason for the partial failure of text message marketing in our experiment may be related to general scepticism. For example, several respondents mentioned that they did not want to open the internet link in the text message because they treat general warnings for internet scams seriously. Furthermore, as the share of elderly respondents in our experiment was rather high, having a mobile phone with an internet connection was not self-evident. This means that not all respondents were even able to open the link for further information. However, as most respondents remembered receiving the text message, this indicates that text messages work well as a reminder for the need for forest management. As a marketing tool, it should still be combined with other communication means afterwards, e.g. personal letters or phone calls. Based on our experience, elderly forest owners, for example, may be more easily approached through traditional means of marketing. Still, while forest owner generations change and social media marketing becomes more familiar to forest owners, it is also important to consider and test other marketing means.

We further found indications, in slight controversy to our hypothesis, that the marketing message primed with economic values evoked more interest towards first thinning than the one with biodiversity protection and climate change mitigation values. Thus, we conclude that the marketing message with economic arguments was more effective

for our women forest owner segment. This finding was also supported by the respondents' open-ended answers, where they highlighted the need for more economic information to back forest management decision-making. The responses thus reinforce the view that women find economic aspects to be important values in their forest ownership, despite also appreciating the ecological aspects of ownership (e.g. Nordlund and Westin 2011). We suggest that this finding may reflect views on forest policy that are typical for Northern Europe, where the economic aspects of forest management are strongly emphasized (Matilainen et al. 2019). As most of our study respondents are elderly (over 60 years old), they are likely socialized into the economic discourse, which to them represents important criteria for good forest ownership. Thus, contextual factors should be taken into consideration when interpreting the results of our study.

However, our results also show that when marketing first thinning services, younger female forest owners seem to value biodiversity and climate change mitigation arguments more than older ones do. This observation is also in line with the findings of Tarrant et al. (2003), who argued that among a variety of values associated with forests, ecological values are significantly more appreciated by young (vs. older) individuals. Nevertheless, based on the analysis of our experiment, it can also be concluded that gender alone does not represent a successful market segmentation base among forest owners, even though female forest owners are often discussed as one forest owner group (e.g. Follo et al. 2017, Hamunen et al. 2020). From the marketing perspective, it is important not to treat them as a group of homogeneous consumers with similar values and objectives concerning their forest management. Even though gender surely has some explanatory power for forest-related decision-making, market segmentation should link gender with other variables, such as age, geographical location of the residence, and forest holding size, to result in more effective marketing results. By adding more segmentation variables and constructing more fine-grained market groups, forest-based service enterprises can avoid sending the wrong kind of marketing message that may be more irritating to the forest owners rather than encouraging them to engage in forest management activities.

Our study demonstrates that in their forest ownership, female forest owners seem to most value the heritage/link to family that the forests represent. This observation is in line with previous research on forest ownership, which has stated that inherited forests are often seen as a means to identify the owner as a link in the chain of generations (Lähdesmäki and Matilainen 2014). Other important aspects were related to economic profit and security, ecological and natural values as well as taking good care of the forest. We also note that forest ownership did not hold any specific values for some respondents. These respondents can be defined as passive or indifferent forest owners, as they "do not appear to own forest land for any specific stat-

ed purpose” (Kline et al. 2000, p.306). The share of these forest owners was 5 per cent of all the respondents, which is relatively low compared to the national average estimate (11%, Karppinen et al. 2020). This can be explained by the fact that all the respondents were customers of the forest service enterprise, which indicates a certain level of activity and interest towards forest ownership and forest management. Even though they made up a rather small proportion of the respondents, this group of passive forest owners still represents a challenge within the forest-based service enterprises, as they are probably difficult to reach with any market arguments.

While our findings emphasize the importance of segmentation, we still acknowledge that finding successful segmentation variables may be a challenging task for small forest management service providers with limited human and economic resources. Even though forest owner typologies based on their values and motives may provide excellent information for marketing purposes and market segmentation, this would necessitate those small enterprises begin systematically collecting more in-depth information about their customers to link the characteristics with real-life customers. We recognize that forest owner research has, indeed, attempted to create such links, but the connection between forest owner objectives and the socio-demographics has been ambiguous (Ficko et al. 2017). Despite several studies having found that e.g. age, gender, and ownership objectives have links to harvesting activity and interest felt towards forest management practices (e.g. Kuuluvainen et al. 2014, Kumer and Štrumbelj 2017), this connection fluctuates. This may imply that the background characteristics are difficult to connect to the developed forest owner typologies in a way that would actually help predict forest owner behaviours (Ficko et al. 2017). Nevertheless, the background characteristics are often the only possible practical way for service companies to begin segmenting their customers.

A very interesting finding of our study is that of all three online marketing messages, the control message, which had no value charge at all, was the least significant at evoking respondent interest towards first thinning service. Based on this finding, we suggest that some sort of value charge increases the appeal of the marketing message, also in the context of marketing forest management services. The important role of value arguments has been widely recognized in the marketing literature as creating emotions in purchasing decisions (see e.g. Bagozzi et al. 1999, Kwak et al. 2011). However, it has not been that broadly used in marketing forest services in the context of forest-based SMEs. Instead, their marketing – like in small businesses in general, is often either non-existent or lacks a strategic approach (Jones and Rowley 2011). Nevertheless, considering the emotional aspects in the marketing messages may improve the marketing result. Selecting the appropriate value arguments for the right forest owner groups may be challenging, particularly if no proper information

on customer segments is available. Thus, one alternative could be to select relatively “safe” value arguments in the messages. Our results show that for female forest owners, the connection to family or heritage values seem to be strongly appreciated, which could also be utilized in the marketing messages. However, further research to validate this assumption is warranted.

At the end, some limitations of the research should be mentioned. The study was implemented in the Finnish context where economic values of the forest are traditionally highlighted in the forest related discourses. This is probably also reflected in the results. It must also be highlighted that the sample of this study was based on the customer register of one forest-based service enterprise. Thus, the results are not representative of all female forest owners in Finland. However, our results represent well the female clientele of the enterprise taking part in the intervention. Furthermore, we suggest that our study reached well those female forest owners in the enterprise’s customer register who show interest in the forest management as they agreed to the interview and are thus those who are likely to purchase the forest-related services. Despite these context related limitations, the results provide valuable insights of a real-life marketing intervention concerning the significance of different marketing arguments.

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