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Angling destination loyalty – A structural model approach of freshwater anglers in Trysil, Norway

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ABSTRACT

For many Nordic winter destinations attracting customers in the summer is a challenge. Angling is one of the summer activities that can help develop year-round tourism at a destination. Knowing which factors influence angling destination loyalty and how to manage these factors for different market segments is therefore important. We investigated how destination image, place attachment and satisfaction influenced anglers' destination loyalty through a structural equation model. Data are from a survey of 379 tourist anglers at the popular winter destination Trysil in southeast Norway. Our results show that increasing loyalty to an angling destination managers and tourism development actors can foremost influence the image and satisfaction level of anglers. This could be done through information campaigns to anglers combined with improving angling quality. On a larger area like in Trysil one should manage for diversity in regulations to avoid marginalizing certain angler groups and create conflicts.

Introduction

Angling is a popular recreational activity, but also of significant importance for local economies through angler expenditures. The Nordic countries with their long coastlines, and many freshwater lakes and streams have the highest known share of population that does angling (Arlinghaus et al., 2020; Hyder et al., 2018). Norway is topping this list with 37% of the adult population going on a fishing trip every year (Statistics Norway, 2020). Fishing is also the most important activity for nature-based tourism firms in Sweden (Fredman & Margaryan, 2014) and Norway (Stensland et al., 2018). Saltwater fishing and salmon fishing in the rivers have a successful history of tourism development in Norway (Borch et al., 2008; Stensland, 2010). Freshwater fishing (excluding anadromous species like salmon, sea trout, and sea-run Arctic char) in Norway however, has not been developed to the same degree although some recent work suggests an emerging sector (Andersen & Dervo, 2019). The tourism destination Trysil in southeastern Norway is foremost a skiing

destination. To develop more sustainable, year-round businesses attention is turned towards expanding the opportunities during the summer season. Fishing is one important summer activity. Trysil already has a name as a classical angling destination for primarily grayling (*Thymallus thymallus*) but also brown trout (*Salmo trutta*), drawing customers from Scandinavia and beyond.

Trysil, and other destinations seeking growth in angling tourism, needs to target existing, often experienced anglers, as well as anglers that are overall less experienced, or at least less experienced with the destination. Several studies have investigated angler site choice (see Hunt et al., 2019 for an overview). Similar to the significant amount of literature on angler motivation (e.g. Beardmore et al., 2011) and satisfaction (Arlinghaus, 2006; Beardmore et al., 2015) the angler site choice literature has often focused on the relative importance of catch and non-catch related aspects among sites and destinations. While factors such as costs, crowding levels, environmental quality, quality of facilities and fishing regulations also have been identified as influencing angler site choice, most of this literature has had a fishery management perspective and not specifically investigated the destination choice processes of angling tourists. The angling site choice literature also operates on a site scale, which is considered a smaller scale than a destination (e.g. one part of a watershed instead of another part).

Satisfaction level is a key predictor of an angler's loyalty to a destination e.g. returning, recommending it to other anglers (Lee, 2009; Veasna et al., 2013). To successfully market and manage an angling destination, satisfied and loyal customers are ultimate indicators of provision of quality experiences. Knowing which factors influence angling destination loyalty and how to manage these factors for different market segments is therefore important. In this study, we investigate factors influencing anglers' destination loyalty and the relationship between them.

Destination image, place attachment, satisfaction, and loyalty

Anglers have many places to choose from when deciding to go fishing. Research has investigated recreational fishers' site choice (see Hunt et al., 2019 for an overview), since around 1990 gradually used revealed and stated choice models to investigate trade-offs between different site attributes, in trying to elicit how anglers chose one site over another. This research has often focused on understanding the relative role of catch and non-catch related attributes in site choice (Arlinghaus, 2006). Generally, costs (travel and others) are considered up against angling (catch) quality attributes but also attributes such as destination size, facilities (e.g. information sites, harbors, campgrounds, see Hunt et al., 2012), crowding (Beardmore et al., 2015) and fishery management and regulations (Aas et al., 2000) are significant site choice factors. Importantly, different angling segments tend to make different choices (Dorow et al., 2010). The site choice research often has had a management perspective and less a tourism destination perspective. For fishing tourism destination managers, understanding the future visitation behavior of their guests including which factors affect this is of crucial importance for product development and fishery management as well as marketing strategies. Anglers' loyalty to a destination is about their revisits, recommending, and speaking positively about the place to friends, family and others (Lee, 2009) and thereby destination choice.

For an angler to be loyal to a place, satisfaction derived from prior visits to sites with a specific characteristic, is a key factor in play. Several studies show that tourist satisfaction impacts the behavioral intentions and loyalty of tourist (del Bosque & Martín, 2008; Stumpf et al., 2020), and satisfaction is a mediating variable in many behavioral models in nature-based tourism (Jiang et al., 2018; Lee, 2009).

A person's emotional and functional connection to a place is called place attachment (Williams & Vaske, 2003). The framework suggests that from a tourism loyalty perspective, the stronger this place attachment the more likely the angler is to return to the place or destination. Few studies have investigated the impact of place attachment for anglers' choice of destinations or sites, but see Hunt (2008) and Hunt et al. (2019) for exceptions.

Destination image is the individual's perception (ideas, feelings, impressions) of a destination (Alhemoud & Armstrong, 1996; Bigné et al., 2001). Images are personal and vary between people and over time, for instance, whether the person has real experiences with a destination or not. Thus, it is an important factor for choosing a specific travel destination (e.g. Um & Crompton, 1990). Several studies support the positive relationship between destination image and the intention to visit the place again or speak positively about it (Afshardoost & Eshaghi, 2020; Bigné et al., 2001; del Bosque & Martín, 2008).

To better understand angling tourists' choice of destinations, a better understanding of the relative effects of destination images, place attachment, and satisfaction is needed. Following from this review, we propose the following hypotheses 1–3:

H1: Satisfaction has a direct positive effect on loyalty

H2. Place attachment has a direct positive effect on loyalty

H3: Image has a direct positive effect on loyalty

Although image has a direct effect on loyalty, several studies find it to have an indirect effect through satisfaction as a mediating variable. Tourists with a positive image of the destination – both from own prior experiences and possibly other sources – tend to be more satisfied (Bigné et al., 2001; Lee, 2009), giving:

H4: Image has a direct positive effect on satisfaction

People having a strong attachment to a place are in general more satisfied with the place and their experiences there (Lee, 2009; Veasna et al., 2013), leading to hypothesis 5:

H5: Place attachment has a direct positive effect on satisfaction

Destination image is a key factor in determining tourist perceptions and preferences about the destination (Yoon & Uysal, 2005), and therefore seen as an antecedent to place attachment (Prayag & Ryan, 2011; Veasna et al., 2013). A positive destination image will lead to a stronger psychological attachment to the destination, and we suggest the following hypothesis:

H6: Image has a direct positive effect on place attachment

Moreover, we hypothesize that the factors will not only have a direct effect on each other, but also indirect effects (see e.g. Stensland et al., 2017). Image will have an indirect effect on *Loyalty* via *Place Attachment* (H7) and *Satisfaction* (H8). We also assume that *Place attachment* will have an indirect effect on *Loyalty* via *Satisfaction* (H9).
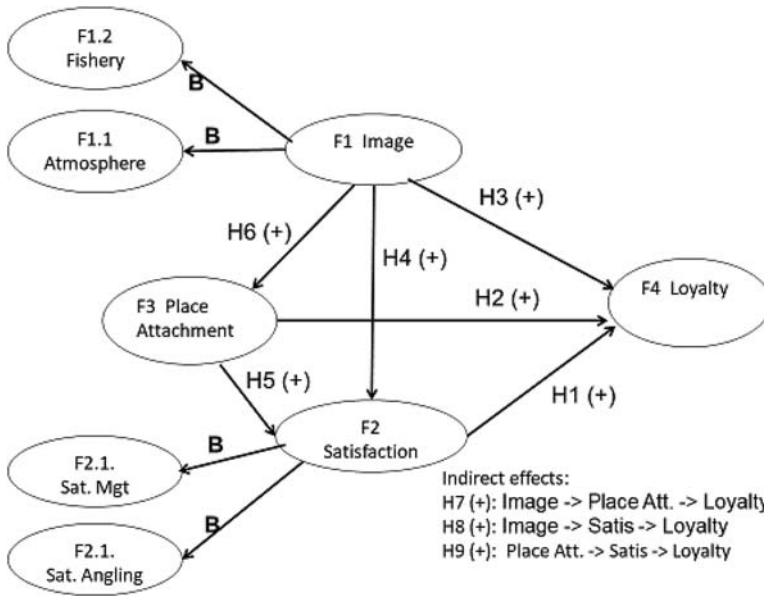
Figure 1. Measurement model of the relationship between angling destination image, place attachment, satisfaction, and how these factors influence anglers' destination loyalty. See Table 2 for factors and variables.

The hypotheses yield the conceptual model and relationships between constructs, shown in Figure 1.

Methods

Trysil study site

Trysil municipality (area 3014 km^2) in southeastern Norway is located in Innlandet county and borders Sweden to the east. As of 2020, the population is 6612, and Trysil is Norway's second largest second-home municipality with 6645 cabins. Trysil is Norway's largest ski resort and primarily a winter sport destination. In 2019, Trysil had 885,000 commercial overnight days, and more than 28,000 beds are available for visitors in and around Trysilf-jellet. It is possible to stay overnight in hotels, apartments, campsites, cabins and camp-grounds or free remote campsites. The primary fishing months June- September received 100, 000 (11%) of commercial overnight days, whereby Norwegians represented 64%, Swedes 26%, and 7% Danes. In Trysil, it is possible to fish in different environments from forest to mountain. A total of 14 fish species are present with brown trout, grayling, whitefish (*Coregonus lavaretus*), Arctic char (*Salvelinus alpinus*), northern pike (*Esox lucius*), perch (*Perca fluviatilis*), and burbot (*Lota lota*) as species relevant for angling. In the popular Trysil River fishing is primarily for grayling and secondary brown trout.

Fishery management in Trysil

In Norway, the freshwater fishing right is a private property right and follows the property with land adjacent to streams and lakes. Most properties are farms owned by private,

small-scale landowners. Public ownership is also common (e.g. municipality), State common property, or State Forest, and to some extent larger farms and corporations owning land. Common for all is that they can sell fishing permits on their land, cooperate with other landowners to merge into larger fishing area units, or lease the area to a tourism business or a fishing association. The landowner is also responsible for setting fishing regulations and do management actions within the framework set by the authorities (see e.g. Stensland, 2010).

Trysil offers a variety of fishing opportunities, such as type of water (river, stream, lake), species composition, harvest regulations and to some extent price and packaging. Trysil joint association for hunting and fishing (TJAHF) administers fishing on 90% of the total area in Trysil municipality, on behalf of private and public landowners. This permit includes more than 100 streams and lakes. In addition, Gjerfloen (7 km river stretch) and Vestsjøberget (5.5 km river stretch) are two important private fly-fishing zones in the Trysil River where separate permits are being sold. Accommodation and guiding are also offered on these two locations.

Data collection and sample

The questionnaire was designed and pre-tested according to Dillman et al. (2009)'s recommendations, and contained mostly questions used in previous similar Norwegian surveys (Brendehaug et al., 2017; Stensland et al., 2015) after being adapted from international studies. The survey was offered in Norwegian and English. Anglers who had bought a fishing permit in Trysil were sent a web survey in February - March 2018. Following Dillman et al. (2009), pre-e-mail, main e-mail were sent out, three e-mail reminders, and two SMS reminders. Prior and during the 2017 fishing season anglers were informed about the upcoming survey when buying fishing permits at site or online, on web and Facebook pages, in the local newspaper, and at nine popular fishing spots.

Our e-mail register (Table 1) was made of addresses from TJHAF's register of fishing permits purchased online at either Inatur.no/Fishspot.no or outlets (1120), or written on paper (176). All available addresses from 2017 were used, as well as all non-Norwegian addresses from 2016 and 2015 to include a larger number of foreigners in the sample.. E-mail addresses from Gjerfloen from 2017, 2016 and 2015 and from Vestsjøberget from 2017 (a total of 170) were also used in the survey to include more foreigners. This covered the majority of Trysil fishing areas. In total, the survey was sent to 1466 different e-mail addresses. After the survey was over, we were left with 696 respondents of a valid sample of 1380, and a response rate of 50.

In 2017, TFJF, Gjerfloen and Vestsjøberget sold 5024 fishing permits. A review of all the permits sold gave an overview of the proportion per nationality, and visitors vs. permanent residents. The respondent sample[1] ($n = 696$) corresponds well with the distribution of total sold fishing permits in 2017, but with a small discrepancy in that Norwegians are slightly overrepresented and Swedes slightly underrepresented of total permit sales in 2017. From the 696 respondents we identified those not living in or not having a second home in Trysil, as tourist anglers ($n = 379$).

Variables

The number of variables in the survey intended to measure each of the different constructs, were more than we ended up with in the final model. Although some variables

Table 1. Overview of sample, send outs and responses.

Permit source	Number of e-mail addresses	Number of replies
TFJF online	1120	
TJFF paper	176	
Gjerfloen/Vestsjøberget	170	
Total	1466	
Valid sample	1380	
Overall responses		696 (50%)
-of them tourist anglers		379[a]

[a]For our structural model, we used only responses with no missing values on the variables included and for this analysis the sample was 343.

were dropped from the model due to low loading (i.e. clearly below the acceptable threshold of 0.7) on their respective factors, we present these "drop-out" variables for transparency reasons. Descriptives and wording for variables in the different domains are presented in Table 2. Most variables were measured on 7-point scales with only the end points given verbal labels.

Image or more precisely angling destination image was measured by both cognitive (e.g. suitable for fly fishing, healthy fish stocks, good fishery management) and affective (e.g. beautiful nature, good atmosphere) variables specifically about Trysil as a fishing area. These variables were adapted from work by Andersen et al. (2018) on tourists' image of Norway as a skiing destination, who influenced the design of variables in Brendehaug et al. (2017)'s study on salmon anglers in the Lærdal River of Norway.

Place Attachment consisted of three variables from (Williams & Vaske, 2003) and used in other angling studies (e.g. Skullerud & Stensland, 2013): *Trysil is very special to me*.

For my kind of fishing, Trysil is the best choice. I get more satisfaction out of fishing in Trysil, than fishing anywhere else.

Satisfaction was measured by ten variables adapted from Brendehaug et al. (2017), and partly reflecting the image variables. These were satisfaction about the fishery (e.g. regulations, information, main fishing area, atmosphere/attitude among anglers, crowding. possibility to hire a guide), and the angling itself (e.g. size and numbers of fish caught, overall experience).

Destination *Loyalty* were as in Lee (2009) measured by three variables asking about willingness to fish in Trysil again, recommend fishing in Trysil to others, and speak positively about fishing in Trysil.

Analyses

We employed partial least-squares structural equation modeling (PLS-SEM) to test the hypothesized model. Only responses with no missing values on the model variables were used, yielding a sample of 343 tourist anglers. A typical PLS-SEM approach requires an assessment of the estimated full model involving a two-step process encompassing (1) the examination of the measurement model and (2) the assessment of the structural model (Henseler et al., 2009). Whereas the measurement model allows us to examine whether the latent variables are measured with satisfactory accuracy, the structural model lets us assess the explanatory power of the model (see Cool et al., 1989).

As seen in Table 2, the study's model included two first-order and two second-order latent variables. The first-order latent variables are *Place Attachment* and *Loyalty*

Table 2. Measurement model results with means of indicator variables ($n = 343$).

Latent variable Indicator	Mean	Loading	D.G. rho	AVE
First-order factors				
Image fishery[a]			0.887	0.567
A fishing area with good fishery management	4.79	0.699		
A fishing area with a combination of different species and fishing possibilities that puts Trysil in a class of its own	4.30	0.732		
A fishing area particularly suitable for fly fishing	4.98	0.738		
A fishing area with a unique fishing culture and history	4.54	0.808		
A fishing area with a special status among fishermen	4.21	0.779		
A fishing area with healthy fish stocks	4.90	0.757		
Image atmosphere[a]			0.888	0.726
A relaxing and peaceful fishing area	5.79	0.885		
A fishing area with a good atmosphere among local people	5.42	0.823		
A fishing area with beautiful nature	5.96	0.849		
Image variables not part of the model ($n = 372–374$)[a]				
A fishing area challenging to fish	4.63			
A fishing area with a lot of big fish	3.94			
A fishing area with good catch probability	4.88			
An expensive area to fish in	3.23			
A fishing area with too many fishermen	3.40			
Satisfaction management[b]			0.858	0.602
The fishing regulations	5.35	0.794		
The information you received/found about fishing in Trysil	5.08	0.752		
Your main Trysil fishing area	5.18	0.786		
The attitudes and atmosphere among fishermen	5.15	0.769		
Satisfaction angling[b]			0.915	0.728
The number of fish you caught	4.37	0.892		
The average size of the fish you caught	3.93	0.877		
The number of big fish you caught	3.60	0.863		
Overall fishing experience	5.42	0.777		
Satisfaction variables not part of the model ($n = 355–371$)[b]				
The possibility to hire a fishing guide	4.34			
The number of fishermen	4.96			
Place attachment[c]			0.924	0.803
Trysil is very special to me	4.83	0.850		
For my kind of fishing, Trysil is the best choice	4.24	0.927		
I get more satisfaction out of fishing in Trysil, than fishing anywhere else	3.79	0.909		
Loyalty[c]			0.932	0.820
I will go fishing in Trysil again	6.16	0.831		
I will recommend fishing in Trysil to other people	5.79	0.946		
I will speak positive about fishing in Trysil to other people	5.95	0.935		
Second-order factors				
Image			0.671	0.741
Image fishery		0.930		
Image atmosphere		0.786		
Satisfaction			0.697	0.875
Satisfaction management		0.858		
Satisfaction angling		0.892		

Variables not part of the model were dropped due to factor loadings below 0.7.
[a]If you think about your impression of Trysil municipality as a fishing area, to what extent do you agree or disagree about the following statements? Trysil is [variable]. Seven-point scale with 1 = Strongly disagree, 7 = Strongly agree.
[b]The last year you fished in Trysil, how satisfied or unsatisfied were you with [variable]. Seven-point scale with 1 = Extremely dissatisfied, 7 = Extremely satisfied.
[c]To what extent do you agree or disagree to the following statements? Seven-point scale with 1 = Strongly disagree, 7 = Strongly agree.

whereas the second-order latent variables are *Image* and *Satisfaction*. The reason why we specify these two variables as second-order latent variables is that more than only one dimension/aspect of these theoretical concepts can be represented in as well as allowing for parsimonious estimation of the model.

As far as the relationships between the latent variables are concerned (see Figure 1), *Loyalty* is influenced by *Satisfaction* (H1), *Place Attachment* (H2) and Image (H3). *Satisfaction* is predicted by *Image* (H4) and *Place Attachment* (H5). *Place Attachment* is influenced by Image (H6). Moreover, we hypothesize that Image will have an indirect effect on *Loyalty* via *Place Attachment* (H7) and *Satisfaction* (H8). Lastly, we also assume that *Place Attachment* will have an indirect effect on *Loyalty* via *Satisfaction* (H9). An overview of the study model's manifest and latent variables (both first- and second-order) is provided in Table 2.

Measurement model

The measurement model includes both first- and second-order latent variables. We start by assessing the psychometric properties of the two first-order latent variables. We do this by examining the size of the indicator loadings, average variances extracted (AVE) and composite reliabilities of the latent variables as well as their discriminant validity (Liang et al., 2007). As shown in Table 2, all of the standardized loadings are, as suggested elsewhere (Brown, 2006), clearly larger than 0.7 apart from one (0.699), AVE values exceed the recommended level of 0.5 (Fornell & Larcker, 1981), and all the reliability coefficients (D.G. Rho) are above the suggested minimum value of 0.7 as well. These findings support that the two first-order latent variables have necessary reliability and convergent validity. Further, all of the AVE values are larger than the squared correlations among the first-order latent variables in the model, and thus demonstrate discriminant validity (Hair et al., 2006).

Next, we also examine the psychometric properties of the other half of the measurement model including the second-order latent variables. To do so, we assess the level of composite reliability and average variance extracted (see Wetzels et al., 2009). As shown in Table 1, the reliability coefficients of all three of the second-order latent variables are very close to the suggested minimum level of 0.7. Furthermore, the AVE values are clearly above the recommended threshold of 0.5. Moreover, all the loadings between the second-order latent variables and their respective first-order latent indicators are satisfactorily high. Based on these examinations, we can conclude that the measurement model does exhibit evidence of reliability and validity, an assessment of the structural part of the model could thus follow (Henseler et al., 2009).

Results

Basic sample characteristics

Our sample of tourist anglers had an average age of 50 years (SD 12, range 18–77), with 93% being men. Respondents had on average been fishing in Trysil for 10 seasons (SD 12, range 1–79), and had 5 fishing days (SD 7, range 1–90) the last year they fished there. Twenty-five percent of respondents had just one season of fishing in Trysil. On the question of how important the fishing opportunities were in their decision to travel to Trysil on their last trip, respondents scored 5.1 on a seven-point scale (7 = very important). Fifty-three percent were Norwegians, 31% Swedes, 4.0% Germans, 3.4% Danes, 2.6% Dutch, and the remaining 6% from 10 countries.

Descriptive statistics

The destination image consisted of two domains with *Image Atmosphere* (nature, relax, friendly locals) being scored high and higher than the more fishing-specific image attributes of the domain *Image Fishery* (see descriptive in Table 2). The *Satisfaction* score was high and higher for the Fishery domain variables (regulations, information, main area, atmosphere) than for the more Angling specific variables (catch), although the single item that scored highest was satisfaction with the overall fishing experience. The general *Place Attachment* variable "Trysil means a lot to me" scored high, and higher than the two medium scored fishing-specific variables. The *Loyalty* variables were all scored high (around 6) with "I will go fishing in Trysil again" receiving the highest score.

Prior experience and knowledge could impact how respondents score our model domains. We did not include prior trips or other variables that potentially could impact how model items were scored, because we wanted to keep the model relatively simple. Although, we ran analyses (*t*-tests) showing that anglers with more than one fishing season in Trysil scored, compared to the 25% first-season-in-Trysil anglers, higher on the domains of *Place Attachment, Loyalty, Image Fishery, Satisfaction Angling*, and *Satisfaction Fishery*. There was no difference between these two groups on *Image Atmosphere*.

Structural part

The results, shown in Table 3, indicate that all the direct relationships (H1–H6) hypothesized in the conceptual model of the study (Figure 1) are statistically significant at 0.0001 level. More specifically, both *Image* ($\beta = 0.455$) and *Place Attachment* ($\beta = 0.201$) impact *Satisfaction*. It appears however that *Image* has the largest effect on *Satisfaction*. Moreover, *Image* ($\beta = 0.585$) does exert a strong impact on *Place Attachment*. Finally, our target variable, *Loyalty*, is influenced by Image ($\beta = 0.223$), *Satisfaction* ($\beta = 0.383$) and *Place Attachment* ($\beta = 0.243$). We further note that the model explains 50% of the variance in the target variable *Loyalty*, which could be considered a large effect overall.

As far as indirect relationships are concerned, all four of the study's hypotheses (H7–H10) are supported in that the indirect effects are statistically significant at 0.001. Explicitly put, *Image* does have a moderate indirect effect on *Loyalty* via *Place Attachment* ($\beta = 0.142$) and *Satisfaction* ($\beta = 0.174$), whereas *Place Attachment* has got a small indirect effect on *Loyalty* via *Satisfaction* ($\beta = 0.077$). Finally, *Image* had a small indirect effect on *Satisfaction* via *Place Attachment* ($\beta = 0.118$).

Table 3. Structural model with direct, indirect and total effects (standardized coefficients) and R^2 ($n = 343$).

Endogenous variable (DV)	R^2	Exogenous variable (IV)								
		Satisfaction			Place attachment			Image		
		Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Loyalty	0.50	0.38	n/a	0.38	0.24	0.08	0.32	0.22	0.36	0.58
Satisfaction	0.35				0.20	n/a	0.20	0.45	0.12	0.57
Place Attachment	0.34							0.59	n/a	0.59

Note: All of the coefficients are statistically significant at 0.0001 apart from the indirect effects of *Place Attachment* (via *Satisfaction*) on *Loyalty*, which is significant at 0.001.The indirect effect for each path is obtained using Sobel's method (Sobel, 1987).

Image and satisfaction

Tables 2–3, and Figure 1 showed relationships among variables and constructs. We highlight the following findings: (a) the relative strength of the different lower-order factors making up the constructs of *Image*, and *Satisfaction*, and (b) how these first-order factors affected their second-order factors *Image* and *Satisfaction*

The first-order factor *Image Fishery* exerted a larger influence on the *Image* construct than the factor *Image Atmosphere*. *Satisfaction Management* and *Satisfaction Angling* exerted about the same impact on the *Satisfaction* construct.

Discussion

Main findings and contribution to existing knowledge

This study has, unlike most other angling site choice studies that have focused on fishery management relevant aspects (Hunt et al., 2019), investigated the contributions of destination image and place attachment. The modeling confirmed that *Image*, *Satisfaction* and *Place Attachment* directly impacted anglers' loyalty to the fishing we know one of the first studies that investigate the role of destination image and place attachment in a fishing tourism setting, and thereby contributes with new knowledge to the fishing tourism and recreation angling site or destination choice literature.

Satisfaction had the strongest impact on *Loyalty*, supporting the notion that satisfaction is an important antecedent for behaviors in outdoor recreation activities (Hunt et al., 2019; Manning, 2011). In our study, the two first-order factors *Satisfaction Angling* and *Satisfaction Management* reflected about equal strength the construct *Satisfaction*. The factor *Satisfaction Angling* describes satisfaction with catch and the overall experience. Catch satisfaction variables might at first glance be seen as general and not place specific, but are site specific something the influence of *Place Attachment* on *Satisfaction* also show. Although anglers have a general catch orientation level, this and other similar attitudes or norms might be situational and change depending on the site fished, species and company (Beardmore et al., 2015; Stensland et al., 2013).

Fishery managers, tourism actors and destination managers should be aware of that it is not only fish availability in terms of numbers and size that counts, to score high on *Satisfaction Angling*. Although catch is important for angling satisfaction (Arlinghaus, 2006; Beardmore et al., 2015) there is more to it as described by our *Satisfaction Management* factor which also brings in available information, fishing regulations, favorite spot and other anglers (Hunt et al., 2019).

The expectations an angler has for a fishing destination, site or fishing trip is influenced by the prior knowledge and experiences of the place, known as image. After evaluating the outcomes of the trip, a certain satisfaction level is achieved. In our study *Image* had an impact directly on *Loyalty*, but also indirect effects through *Satisfaction* and *Place Attachment*. We note that the fishery-specific image attributes (*Image Fishery*) foremost reflected the *Image* construct. The more general attributes (relaxing area, nature, local people) as expressed in *Image Atmosphere* is also a part of Trysil's image as a fishing destination and is thus influencing *Place Attachment* as seen in our model. Our *Image* construct consisted of both affective and cognitive components, where *Image Atmosphere* is an affective component, and *Image Fishery* a mix with a majority of cognitive variables.

This combination of variables within a component is similar to Andersen et al.'s (2018) study of Norwegian skiing destination image. We do see that the factor *Image Fishery* best expresses the *Image* construct. This is not surprising as our sample consists of many anglers with a long history of fishing in Trysil. There is however variation between angler groups as first-time-in-Trysil anglers scored lower than others on all domains except *Image Atmosphere*. These first timers were less loyal to Trysil, have probably not tied strong bonds to the place and therefore one would assume that the angling experience expressed through *Satisfaction Angling* and *Satisfaction Management* is particularly important for their loyalty.

Several studies show that prior experiences with the destination or activity tend to let the destination images be expressed majorly by the cognitive domain, while the affective domain is more important for those without prior experiences and visits to the destination (Andersen et al., 2018; Sirgy & Su, 2000). In our study, first time anglers to Trysil did not score the affective component *Image Atmosphere* different than other anglers. This might suggest that relevant information about the angling destination were available and actively used by first time angling tourists.

Limitations and future research

Our study investigated some of the key relationships influencing loyalty to an angling destination. As our model analysis shows, due to reliability concerns not all the initial variables in the survey were used in the factors. This concerns the excluded fishing-specific variables measured for the *Image* and *Satisfaction* factors. These variables could however be part of other subdomains of these factors, but due to few similar variables measured these potential domains did not appear in our study. Future studies should try to go beyond our initial study and further explore the fishing-specific variables and factors of image and satisfaction. In our study we only targeted anglers with a history of fishing in Trysil, and future studies should address other anglers' perception of Trysil (or other places not visited) as an angling destination.

Management and business implications

To increase loyalty to an angling destination managers and tourism development actors can foremost influence the image and satisfaction level of anglers. This could be done through information campaigns to anglers combined with improving angling quality. What is perceived as angling quality and which media and messages are better suited to reach anglers, is not uniform across anglers and differences between groups, something also proven in the vicinity to Trysil (Aas et al., 2000). The concept of specialization (Bryan, 1977; Scott & Shafer, 2001) categorizing anglers on a continuum from novices to experts might be useful for a segmentation into relatively uniform angler groups. Anglers never been to or with very little experience of Trysil have probably no strong bonds (place attachment) to Trysil and are more likely to travel to other places than anglers with more experience from Trysil. Therefore it is especially important to support a positive image and achieve high satisfaction levels to attract and keep new customers.

Despite a high *Loyalty* score, fishery managers should note that more general *Image Atmosphere* and *Satisfaction Management* domains scored higher than the more

fishing-specific domains *Image Fishery* and *Satisfaction Angling*. Anglers were least satisfied with the number and size of fish they caught, something managers could influence to a certain degree with fishery regulations (maximum sizes, bag limits) and stock enhancement (e.g. stocking, habitat restoration).

Expert anglers are foremost the ones that would react positively to fishery regulations that could increase the quality of the fishing, either number of fish caught (not implying harvest necessarily) and/or fish size (Aas et al., 2000; Garlock & Lorenzen, 2017; Oh & Ditton, 2006). On a larger area like in Trysil, one should manage for diversity in regulations to avoid marginalizing certain angler groups and create conflicts as has been in the case in some of the Norwegian salmon rivers (Øian et al., 2017).

Like in other studies, people with less prior destination experience scored lower on image, satisfaction, place attachment and loyalty. This tells that regular visitors are more loyal, needless effort to travel to Trysil again, and therefore is the most important customer group to work with, also since they are willing to speak positively/recommend fishing in Trysil to other and potentially new anglers to Trysil.

Conclusion

As far as we know, this is one of the first studies in a fishing tourism setting that investigates and confirms the role of and relationships between destination image, place attachment and satisfaction on destination loyalty. Thereby the study contributes new knowledge to the fishing tourism and recreation angling site/destination choice literature.

The factor *Satisfaction* had the strongest impact on *Loyalty*. The subfactor *Satisfaction Angling* describes satisfaction with catch and the overall experience, and is site specific. Satisfaction is also described by the *Satisfaction Management* factor which brings in available information, fishing regulations, favorite spot and other anglers. To increase loyalty to an angling destination managers and tourism development actors can foremost influence the image and satisfaction level of anglers. This could be done through information campaigns to anglers combined with improving angling quality

Note

1. We were not able to check the representability of our tourist sample (*n* = 379) against total number of permits sold to tourist anglers. The fishing permit register has the angler's residential address and not whether they own a second home in Trysil, making it impossible to distinguish tourist from second-home owners.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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