



Crowding vs. Skiing: When and How Does Crowding Influence Experience Evaluations in a Ski Resort Setting?



Kathrin Jathe

Master's Thesis

International Hotel and Tourism Leadership

Norwegian School of Hotel Management

Stavanger, June 2016



Universitetet
i Stavanger

**FACULTY OF SOCIAL SCIENCES,
NORWEGIAN SCHOOL OF HOTEL MANAGEMENT**

MASTER'S THESIS

STUDY PROGRAM:

International Hotel and Tourism Leadership

THESIS IS WRITTEN IN THE
FOLLOWING
SPECIALIZATION/SUBJECT:

Tourist Experiences

IS THE ASSIGNMENT CONFIDENTIAL? No

TITLE:

Crowding vs. Skiing: When and How Does Crowding Influence Experience Evaluations in a Ski Resort Setting?

AUTHOR

Student number:

223170

Name:

Kathrin Jathe

ADVISOR:

Torvald Øgaard

ACKNOWLEDGE RECEIPT OF 2 BOUND COPIES OF THESIS

Stavanger,/..... 2016

Signature administration:.....

Abstract

Background Although crowding has been recognized as an important indicator of experience quality and its impact on tourists' and locals' experiences and behaviours are important topics for visitor management to understand, there is limited theoretical knowledge existing about crowding within ski resorts. Research conducted at ski resorts indicates that crowding and queuing are topics that matter to the customers of ski resorts. Furthermore a better understanding of the consequences of crowding is not just interesting for the management of ski resorts but also for other tourism settings in Norway, such as outdoor recreation where visitor numbers are growing exponentially during recent years. **Objectives** This study set in a ski resort context aims at a better understanding of the mechanisms at work when visitors evaluate experiences that are likely to be influenced by crowding and specifically looks at whether the crowding-satisfaction relationship is mediated by emotion types and depends on visitors' prior expectations of crowding and tolerance for crowding. Secondary objectives involve the exploration of the effect of crowding on loyalty behavioural intentions (to recommend and revisit) and the exploration of the role of the perceived acceptability of the wait at lifts. **Methods** A study from retail shopping was adapted and extended to fit the special outdoor recreation service setting at a ski resort. Quantitative data was collected via an online survey from a convenience sample of 248 skiers and snowboarders who visited a small-scale ski resort in Norway, and analysed with ordinary least squares regression by means of PROCESS for SPSS. **Results** The crowding-satisfaction relationship is (partially) mediated by the emotions joy and anger, while the effects of crowding and acceptability of wait on loyalty are indicated to be indirect and mediated by satisfaction. The effect of crowding on satisfaction did neither seem to depend prior expectations nor on tolerance for crowding. Nonetheless there are indications that these moderators play a role in the relationship between visitor density and crowding. A discussion of the results is provided;

theoretical, methodological, and management implications as well as suggestions for future research are outlined.

Table of Contents

Foreword	8
1. Introduction	9
1.1. Theoretical Positioning and Problem Statement.....	10
1.2. Paper Structure.....	13
2. Literature Review	13
2.1. The Ski Resort Setting	13
2.2. Visitor Management and Important Frameworks	15
2.3. Conceptualization of Crowding, Normative and Expectancy Theory	17
2.4. Other Important Theories.....	26
2.5. Coping Mechanisms.....	27
2.6. Conceptualizations, Relevant Empirical Findings and Hypotheses	29
3. Method	45
3.1. Design	45
3.2. Sample.....	46
3.3. Data Collection	48
3.4. Data Analyses	56
4. Findings.....	57
4.1. Achieved Sample	57
4.2. Descriptive Statistics and Distribution.....	60
4.3. Validation of Measures	61

4.4. Assumptions.....	66
4.5. Results.....	70
5. Discussion	84
5.1. Crowding and Emotions	85
5.2. Mediation Analyses	89
5.3. Moderation Analyses	91
5.4. Validity, Generalizability and Limitations	97
5.5. Implications.....	102
5.6. Future Research	106
6. Conclusion.....	109
References	112
Appendix A. Area Map of Sirdal Skisenter	126
Appendix B. Invitation and Reminder Emails	127
Appendix C. Alterations According to Expert Review and Pre-test Feedback	130
Appendix D. Online Questionnaire.....	133
Appendix E. Descriptive Statistics, Distribution, Reliability and Convergent Validity	141
Appendix F. Assessing Normality of Distributions	147
Appendix G. Linearity and Homoscedasticity	150
Appendix H. Mediation Model B split into Two Mediation Analysis with One Mediator	156
Appendix I. Simple Moderation Analyses Model D.....	157
Appendix J. Additional Simple Moderation Analyses (mean centered).....	158
Appendix K. Output Johnson-Neyman Technique	159

List of Tables

Table 1 Data Collection and Sample Size.....	50
Table 2 Correlations.....	69
Table 3 Mediation Model A.....	74
Table 4 Mediation Model B.....	75
Table 5 Alternative Mediation Model C.....	77

List of Figures

Figure 1. Overall Model.....	45
Figure 2. Model A.....	73
Figure 3. Model B.....	75
Figure 4. Model C.....	76
Figure 5. Model D.....	79
Figure 6. Additional Moderation Analysis.....	83
Figure 7. Visualization Moderator Prior Expectations of Crowding.....	83
Figure 8. Visualization Moderator Tolerance for Crowding.....	84

Foreword

Even though this Master programme is titled „International Hotel and Tourism Leadership”, my focus has always been more generally on tourism than on hotel management. During my Bachelor’s I specialized in tourism marketing. And just while finishing my Bachelor’s thesis on climate change and aviation, my interest in sustainable tourism increased and eventually lead me to choose a course in nature based tourism during my Master’s. This Master’s Thesis brings the two interests consumer behaviour and outdoor recreation together.

My interest in the crowding concept originates from the increasing interest in Norwegian iconic hiking destinations like the Pulpit Rock, Kjerag and Trolltunga (troll’s tongue) and the related high visitor densities. As an experienced skier, a ski resort seems to be a relevant setting worth investigating to shed light on the questions when and how and under what kind of conditions crowding makes a difference in experience evaluations.

I would like to thank my family and friends for their encouragement and emotional support, Tide Reiser and Sirdal Skisenter for their practical support in conducting the onsite research, and last but not least Lukasz Andrzej Derdowski, May Irene Furunes, Truls Engström, James Higham and especially my supervisor Torvald Øgaard at the Norwegian School of Hotel Management for their inspiration, professional support and advice, encouragement and criticism.

I have learnt so much.

1. Introduction

When I visit my family during winter time, we sometimes take a day trip to one of the regional and small ski resorts which are located within an hour's drive from home if the conditions allow for it. The last trip that I can remember however did not leave me as satisfied and I have doubts that I will return to the resort in the near future. The time it took to get on top of the mountain (also due to queuing at the lift) did not stand in adequate relation to the actual time spent on the slopes. I knew that the slopes were relatively short from previous experiences, so this is not what decreased the quality of the experience for me. I considered it to be a tolerable trade-off for the convenience of a spontaneous day trip. What made the day less enjoyable for me, were the queues at the lift, the high density on the slopes which meant that I could not ski the way that I wanted to, and on top of that, the restaurant facilities that were swamped with people and kept me from talking to my family. During the trip we tried out slopes that were less well prepared to escape from the crowds, but these did not present good alternatives. Overall, the trip may have been worth it in terms of spending time with my family, but it was not worth it for me for the skiing experience that the trip gave me and I will carefully consider how many people I can expect to be there for my next, if I will return to the resort. So, I thought to myself that I could not possibly be the only one with the memory of an experience like this.

There is a luxury ski resort in Lech, Austria, with a lift system that limits the number of day passes sold, to prevent crowding and queuing; when the slopes get to crowded a "resort full" sign is hung out, and an electronic sign on the road advises day trippers to turn back (Marshall, 2010, December; Wood, 2009, November 14; ultimate-ski.com, n.d.). This indicates that crowding and queuing at ski resorts are important topics for visitor management in ski resorts.

Given that most ski resorts in Norway and especially in Fjord Norway are small- and medium-sized enterprises with a small number of lifts and slopes, limited service facilitation (Demiroglu, Dannevig, & Aall, 2012) and rather modest altitudes – does crowding lower the quality of experience for visitors to these resorts? This is particularly interesting as Demiroglu et al. (2012) state that Fjord Norway has a lot of potential to be developed for winter sports tourism.

Crowding as a research topic is not just interesting for the management of ski resorts but also for other tourism settings, such as in outdoor recreation. The most popular activity among foreign tourists in Norway is to experience nature and fjords (Innovation Norway, 2015) and tourist numbers to iconic sites such as the Pulpit Rock, Kjerag and Trolltunga are growing exponentially during recent years (Jøssang, 2014, October 18). On busy days tourists are queuing to take a picture at these sites (Aftenbladet, 2015, October 13). Saturation is likely to have been reached in some places. Moreover, the Norwegian Ministry of Trade and Industry has a growing economic interest in the development of the tourism industry in Norway (Norwegian Ministry of Trade and Industry, 2012).

1.1. Theoretical Positioning and Problem Statement

Research conducted at ski resorts indicates that crowding and queuing are topics that matter to the customers of ski resorts. While the waiting time at lifts is frequently considered to be an important choice determinant for ski resorts (Unbehaun, Pröbstl, & Haider, 2008; Won, Bang, & Shonk, 2008; Won & Hwang, 2009), the topic of crowding is suggested more implicitly by some authors (Fonner & Berrens, 2014; Vassiliadis, Priporas, & Andronikidis, 2013; Walsh, Miller, & Gilliam, 1983; Wyttenbach, Haider, & Pröbstl, 2012, August). While Matzler, Füller, Renzl, Herting, and Späth (2008) measure waiting times at ski lifts and cash desks for the “lift” attribute to overall satisfaction at a ski resort, Alexandris, Kouthouris, and Meligdis (2006)

include an item “lifts are usually crowded” in the physical environment quality dimension in a study about ski resort loyalty.

Although crowding has been recognized as an important indicator of experience quality (Manning, 1999) and its impact on tourists’ and locals’ experiences and behaviours are important topics for visitor management to understand, there is limited theoretical knowledge existing with regard to crowding and queuing within ski resorts. According to Vaske and Shelby (2008) crowding has however been frequently studied within outdoor recreation sites and will continue to be an important topic considering population growth. Furthermore, on the words of Manning (1999) satisfaction as a sole indicator for service quality may not be sensitive enough to detect undesirable changes in site conditions, and the concept of perceived crowding as a subjective negative evaluation of density (Stokols, 1972) may be more useful due to its close association with numbers of visitors and its specificity (Shelby & Heberlein, 1986; as cited in Lee & Graefe, 2003).

Within outdoor recreation, the crowding-satisfaction relationship has been found to be weak or non-existent (Manning, 1999). Therefore, it would be interesting to study the consequences of crowding in more detail, in order to better understand the nature of the relationship and under what kind of conditions crowding does influence experience evaluations.

The theoretical foundation of such a study lies in consumer behaviour research, which suggests that both the physical environment and the social aspect of crowding can influence satisfaction and behaviour (Bitner, 1992; Eroglu & Machleit, 1990; Eroglu, Machleit, & Davis, 2001; Harrell, Hutt, & Anderson, 1980; Hui & Bateson, 1991; Machleit, Eroglu, & Mantel, 2000; Machleit, Kellaris, & Eroglu, 1994).

Particularly interesting research with respect to investigating the crowding-satisfaction relationship has been conducted in retail shopping by Machleit et al. (2000) titled “Perceived retail crowding and shopping satisfaction: what modifies this relationship?”. The findings included partial mediation of the crowding-satisfaction relationship by specific emotion types and found that both prior expectations of crowding and tolerance for crowding moderated the relationship.

Based on normative and expectancy-disconfirmation theory, this study adapts and partially replicates the work by Machleit et al. (2000) in a ski resort setting. The ski resort context seems to be particularly appropriate as it combines typical service and outdoor recreation characteristics. Thus this study may be useful for all sorts of tourism contexts.

Hence the main research question of this study is: “When and how does crowding influence experience evaluations in a ski resort setting?”

Furthermore, on an explorative basis and as a stepping stone to more extensive research into behaviours that may be caused by crowding, the model is extended with loyalty measured in terms of behavioural intentions to revisit and to recommend. As a second more explorative objective, the role of the acceptability of waiting time at lifts as a close associate of perceptions of crowding is assessed due to the apparent salience of queuing at lifts in ski resorts.

Thus the objectives and contributions of this study can be summarized as follows:

The study is set out to better understand the nature of the crowding-satisfaction relationship, first of all by investigating which specific emotion types are evoked by crowding in a ski resort setting and by answering the question whether emotions mediate the relationship. Secondly, the study aims at finding out whether the effect of crowding on satisfaction depends on

visitors' prior expectations of crowding and tolerance for crowding. Finally, the study should investigate the influence of crowding on behavioural intentions and explore the role of the acceptability of the waiting time at lifts.

1.2. Paper Structure

The following chapters present an extensive literature review, a chapter about the methodology used in this study, followed by the presentation of the findings and the discussion thereof. The paper ends with a conclusion setting the contribution of this study into the bigger picture.

2. Literature Review

This chapter starts with a section about the ski resort setting and a review of the most important visitor management concepts. The review then goes over to the conceptualization of the term crowding, and the foundations of normative and expectancy theory and other important theories. The coping mechanisms that play a role in understanding the crowding-satisfaction model are described in the subsequent subchapter. Finally, definitions and (potential) relationships of the remaining constructs (satisfaction, emotions, loyalty and acceptability of wait) in the extended crowding-satisfaction model (see figure 1) will be provided and explained – complemented by relevant existing empirical research and the hypotheses of this study.

2.1. The Ski Resort Setting

The activities of skiing and snowboarding can be qualified as adventure tourism within natural areas (Weaver, 2008) as they encompass the three elements necessary to do so: a high level of physical exertion, an element of risk and the use of specialized skills to be able to successfully and safely participate in the activity (Buckley, 2006). Newsome, Moore, and Dowling (2012) further note that the environment is the place where the activity can take place

rather than the focus of the activity (opposed to appreciating and experiencing wildlife, geology and natural landscapes where the focus is on the natural environment). As Weaver (2008) points out “Steep mountain slopes and white water are valued as venues more for the thrills and challenges that they offer than for the opportunities they provide for studying nature in such specialized settings”(p.20). The ski resort setting in terms of visitation is more comparable to a frontcountry than a backcountry setting in a traditional outdoor recreation sense which also entails that solitude is probably not the primary motivation for participating in the activity, at least it has not been reported as such (Unbehaun et al., 2008). Still, crowding and long lift lines are likely to have an impact on the quality of experience for visitors to a ski resort as indicated by research at ski resorts presented in the following section.

2.1.1. Research at Ski Resorts

With some exceptions, research in ski resort settings has been primarily concerned with choice determinants of ski resorts and market segmentation and service quality as an antecedent of experience evaluations. Besides snow quality/sureness of snow, size of skiable area/variety of slopes, travel time, and cost, waiting time at lifts is mentioned as an important choice factor for recreationists at ski resorts (Unbehaun et al., 2008; Won et al., 2008; Won & Hwang, 2009).

Some studies (implicitly) suggest that crowding in respect to ski resorts could be a relevant and interesting topic to study (Fonner & Berrens, 2014; Walsh et al., 1983; Wyttenbach et al., 2012, August). Matzler et al. (2008) for example, measure waiting times at ski lifts and cash desks for the “lift” attribute to satisfaction at a ski resort. One of the goals of Vassiliadis et al. (2013) was to explore time allocations associated with activities in ski resorts under high density visitor movements as they described visitor flow and behaviour classified into time block during a day at a ski resort through diary analysis. Perdue (2002, p. 15) assessing the effect of

discount programmes on skier behaviour state while summarizing their findings “while declines in destination skier satisfaction with the levels of lift line and slope crowding were also identified, the discounted pass programs do not appear to have directly influenced the destination skiers’ overall satisfaction”. In line with this notion and the apparent salience of waiting lines at lifts as a factor to influence experiences, it is assumed that both waiting times and perceptions of crowding as concept that is closely related to high visitor density and waiting lines, are important topics to study in a ski resort context.

While a ski resort setting where the visitor’s focus is on certain winter sport activities, does not belong to the typical outdoor recreation tourism setting with a main focus on the experience of unspoilt landscapes, crowding and visitor management concepts and much of the theory within tourism originated from the latter context. Research and theory development in outdoor recreation complemented with research from other contexts concerned with crowding and queue management build the theoretical foundation for this thesis and will be presented throughout the next subchapters.

2.2. Visitor Management and Important Frameworks

One of the most important concepts with regard to visitor management is the concept of social carrying capacity as it is closely related to the concept of crowding (Lee & Graefe, 2003). According to Shelby and Heberlein (1984) “carrying capacity can be defined as the level of use beyond which impacts exceed acceptable levels specified by evaluative standards” (p.433). Graefe, Vaske, and Kuss (1984) explain further that there is no absolute value that the capacity is determined on, but that carrying capacity refers to a range of values associated with specific management objectives for an area to sustain a certain level of quality in the recreation experience.

Originally the concept of carrying capacity was more deterministic but evolved to be more based on norms (Manning, 2007). In this line, Newsome et al. (2012) describe the concept of Limits of Acceptable Change (LAC) as grounded in the notion that some change in site conditions is inevitable and accompanying visitor use. LAC and the normative version of carrying capacity proved to be more practical than numerical carrying capacity and rather focuses on the questions what the desirable conditions are and to what extent change is acceptable.

Finally, an essential framework to be considered in any discourse concerning preferences and norms within recreation is the Recreation Opportunity Spectrum (ROS) which can be applied within a single area or a group of areas (Newsome et al., 2012). This framework was developed around the idea that a diversity of opportunities for a natural area needs to be defined, reasoning that people have different preferences and norms for experiences and that experience quality can be assured by enabling visitors to find and choose the experience opportunities that they are seeking (Newsome et al., 2012). It was assumed that the adverse effects of increasing levels of use on the environment and experiences would be mitigated by offering a diverse array of opportunities or zones ranging from high-impact activities at resilient sites to low-impact activities at less resilient sites (Newsome et al., 2012).

Visitor management frameworks that incorporate these ideas usually include three basic elements: the development and management of objectives, indicators and standards for desired conditions, and the monitoring and maintenance of these conditions (Manning, 2007). Mowforth and Munt (2003) point to some possible visitor management techniques like zoning, channeled visitor flows, restricted entry and differential pricing in this regard.

2.3. Conceptualization of Crowding, Normative and Expectancy Theory

This subchapter's focus is on the factors that influence crowding perceptions. It provides an introduction to the subject of crowding, important definitions and describes the ideas and findings from normative and expectancy theory.

On the words of Pearce (2011) there are at least two types of crowding: continuous or constant crowding – representing large and continuous use levels, and fluctuating crowding – that occurs only at certain well-determined times, like weekends or school holidays. The small scale ski resort investigated here is more likely to qualify as a site that experiences fluctuating crowding, also based on snow and weather conditions.

Pearce (2011) also elaborates on the coexistence of the notion that rising visitor numbers are seen as a negative force in the dominant “Western” North American context, an issue that needs to be limited by management, and the notion that increased visitation can also be seen more positively in terms of adding to the atmosphere, reputation of the location and in terms of being co-participants in the experience (Urry, 1990). Pearce (2011) further outlines that those who manage tourist attractions tend to view an increasing number of visitors as positive as long as they can be managed profitably. According to Pearce (2011) these contrasting views imply that visitor management research always has to look beyond actual visitor density.

Stokols (1972) defined the perception of crowding as “a motivational state aroused through the interaction of spatial, social, and personal factors, and directed toward the alleviation of perceived spatial restriction” (p.275) and clearly distinguished the term from the physical condition of density, which he described as a necessary but not sufficient antecedent of crowding.

This notion is supported by Manning (1999) who reviewed numerous studies in outdoor recreation and reports inconclusive results as about half of the studies found moderately strong relationships between density and crowding perceptions whereas the other half reported weak or non-existent relationships. Absher and Lee (1981) called for a reassessment of the notion that crowding is largely dependent upon sheer visitor density.

In line with the definition above, Graefe et al. (1984) note that this distinction has been advanced in the literature and further clarify that “crowding is the negative evaluation of a certain density – a value judgment which specifies that there are too many people” (p.399). Vaske and Shelby (2008) specify that perceived crowding is a combination of descriptive information (density level experienced) and evaluative information (negative evaluation of density) and that when people evaluate a site as crowded, they have already implicitly compared their experience with their perception of a standard, meaning that the experienced conditions exceeded their standards. Hence, it is a complex concept of psychological, subjective and evaluative nature (Lee & Graefe, 2003; Manning, 1999).

Crowding has been frequently studied in outdoor recreation, will continue to be important considering population growth (Vaske & Shelby, 2008), and is a useful concept to study in this respect as it is of normative nature (Manning, 2007) and may be due to its close association with numbers of visitors and specificity, be more useful as an indicator for management than satisfaction (Shelby & Heberlein, 1986; as cited in Lee & Graefe, 2003).

As outlined previously and with respect to visitor management frameworks, crowding and carrying capacity can be managed and monitored by defining specific, measurable variables as indicators of the quality of the visitor experience and standard of quality that determine minimum acceptable conditions of indicators (Manning, Valliere, & Wang, 1999). However setting the

standards can be difficult as they may be based on a variety of sources (e.g. legal and administrative mandates, policies, historic precedent, judgment of experts, politics, and public opinion) (Manning et al., 1999). As stated by Manning et al. (1999) public opinion gained from visitors is especially interesting as the visitors are the ones who are most interested in and affected by management decisions and actions. In this respect, norms are used to evaluate recreation conditions and personal norms (based on individual standards) can be aggregated to test for social norms (based on broader common standards) (Manning, 1999).

Crowding norms are determined by characteristics of visitors, of those encountered and situational variables (Manning, 1999). As Graefe and Vaske (1987) formulate: “In essence, a given use level may enhance the tourist experience for some individuals, produce dissatisfaction for others, and have no effect whatsoever on other tourists” (p. 394). For this study the characteristics of visitors and expectancy theory are of particular interest.

2.3.1. Characteristics of Visitors

On the words of Manning (1999) the variety of personal characteristics of visitors that can be linked to crowding norms include motivations, preferences and expectations for meeting other people, experience level and attitudes with regard to management.

Expectancy theory in recreation. Expectancy theory is based on the notion that people are consciously or subconsciously motivated by a desire to satisfy multiple expectations or reach a variety of psychological states such as excitement, solitude, social interaction, status, stress release when they engage in recreational activities (Lee & Graefe, 2003). Graefe et al. (1984) outline that “most conceptual approaches interpret the mechanisms through which experience evaluations occur as a process in which expectations or norms provide a basis for comparing preferred situations to those actually encountered” (p.398). Literature suggests that expectations

are dependent on individual and circumstantial factors such as the individual's environment, previous experience, personality, situational factors and information that was communicated by others or media (Lee & Graefe, 2003). In consumer research this theory is termed expectancy-disconfirmation theory which will be outlined during the subchapter of satisfaction.

Motivations, preferences and expectations. Motivations, preferences and expectations are personal characteristics that are highly interrelated and have been studied with respect to density and crowding in outdoor recreation (Manning, 1999).

A study by Ditton, Fedler, and Graefe (1983) of river floaters on the Buffalo National River investigated the associations of perceptions of crowding with motivations, expectations and preferences for contacts. The three groups, respondents whose enjoyment was decreased by encounters with other people, neutral floaters, and those whose enjoyment was increased by visitor density, differed in their motivations (floaters who felt crowded reported significantly higher ratings of the motivation "to get away from other people"), expectations (people that saw more people than expected were more likely to report that they felt crowded) and preferences for density (respondents that experience more contacts than preferred were likely to report that they felt crowded).

Other studies come to similar conclusions in terms of motivations as an important factor. For example, backcountry hikers at Yosemite National Park who scored high on the "quietude" motivations were more likely to feel crowded (Absher & Lee, 1981), and river floaters in Dinosaur National Monument who were more sensitive to visitor density were more likely score highly on "stress release/solitude" and "self-awareness" motivations (Roggenbuck & Schreyer, 1977; Schreyer & Roggenbuck, 1978; as cited in Manning, 1999).

Note that research suggests that the motivation of solitude in outdoor recreation probably is more about undisruptive interaction among group members than about actual physical isolation (Manning, 1999).

There are a number of studies that have addressed preferences and expectations with respect to crowding norms in outdoor recreation and that found preferences and expectations to be good predictors of perceptions of crowding in addition to density in different activity settings supporting expectancy theory strongly and consistently (Lee & Graefe, 2003; Manning, 1999). For example, Shelby, Heberlein, Vaske, and Alfano (1983) set out to explore the effects of encounters, expectations and preferences on crowding with data sets from six areas and 3,000 respondents engaged in three different activities and found that the variance explained in crowding increased by 5 to 19% by adding preferences and expectations for contacts to actual contacts. Shelby et al. (1983) suggested for management to provide information to create realistic expectations, so that visitors are empowered to choose the densities that they prefer.

As Manning (1999) notes scholars have suggested that first-time visitors to a site had little or no expectations about conditions and density and hence would accept what they experience as normal, whereas visitors that return to a site would use their past experience to evaluate conditions and that this would explain a lack of relationship between density and satisfaction. However, Manning (1999) argues that this hypothesis, just as the hypothesis of rationalization coping (explained in a following subchapter), is probably most applicable to “once in a lifetime” contexts, and not so much in less extraordinary contexts where first-time visitors only represent a small portion of visitors. Moreover, he argues that most visitors that participated in respective studies were able to report expectations regardless of experience.

Another notion brought up in Manning (1999) is that recreationist select areas and activities according to their preferences and to meet their expectations, also with regard to visitor density, which may mean that visitors tend to be satisfied with their choice, regardless of visitor density. The mostly consistent high levels of satisfaction support this explanation and there is also some empirical evidence from hikers in low density zones that were least tolerant of encounters with others or scored higher on “solitude” as a motivation as others (Manning, 1999). Yet, this seems less logical when there is a lack of choice in terms of low density alternatives, and recreationists seem to make use of site even if they exceed their preferred or expected levels of density, since most studies find some degree of crowding, which may reflect limited low-density opportunities (Manning, 1999).

In the outdoor recreation context, norms have traditionally been measured with a numerical approach asking respondents to evaluate a range of encounters with other groups per day; or in shortened version, asking respondents to report the maximum acceptable number of encounters (Manning et al., 1999). Donnelly, Vaske, Whittaker, and Shelby (2000) used data from 30 studies and 56 evaluation contexts to study encounter norm prevalence (measure in percentage of people that were able to report encounter norms) asking people to indicate the highest number of encounters they would tolerate before the experience changed. They found that norm prevalence varied with type of resource (frontcountry or backcountry), type of encounter (conflict or no conflict), and question response format. Visitors to frontcountry sites were less willing or able to provide a tolerance limit, which may be due to the fact that they expect and tolerate a higher use level (Donnelly et al., 2000). This is one reason why visual methods have been suggested for frontcountry sites (Manning, 2007; Manning & Freimund, 2004; Manning et al., 1999).

Given that theory suggests a mediation of the density-crowding relationship by reported encounters (the number of people visitors recall to have encountered), and that the relationship of reported encounters and crowding is stronger and more consistent than the density-crowding relationship, Vaske and Donnelly (2002) tested and confirmed the theory that when encounters exceed a visitor's norm for seeing others, perceptions of crowding increase. They used 13 different studies including 12 different activities and found that although crowding norms vary across different contexts (settings and activities), the relationship among encounters, norms and crowding was consistent for front- and backcountry resources (when frontcountry visitors were able to report encounter norms), different activities and types of encounter (Vaske & Donnelly, 2002).

Regardless of the particular approach, there are different evaluative dimensions to be used, that differ substantially in meaning to the respondents, including preference, desirability, pleasantness, ideal, favorableness, acceptability, satisfaction, okay, tolerance, and displacement (the point at which people would not choose to revisit)(Manning, 2007; Manning et al., 1999). Furthermore the assumption that they may result in significantly different personal and social norms is supported by several empirical studies that report preferred conditions to be substantially lower than acceptable conditions (Manning et al., 1999).

In line with previous findings, Manning et al. (1999) found a clear hierarchy of crowding norms among the dimensions ranging from low norms to high norms where the norm for absolute tolerance was more than four times higher than the preferred norm: preference (lowest norms), acceptability, acceptability of others, management action (the point at which people would be in support of restrictions), and tolerance (highest norms). These findings imply that evaluate dimension need to be selected with care – standards of quality based on the preference dimension

are likely to result in very high quality experiences but probably restrict access to a great extent, whereas standards based on the tolerance dimension allow access for a high number of visitors but may be related to rather low quality experiences (Manning et al., 1999). Therefore Manning et al. (1999) conclude that the usage of multiple dimension may result in the most informed formulated standards of quality. With regard to this study and the conceptualization of tolerance, this means that tolerance for crowding is the weakest dimension to influence crowding and satisfaction.

Tseng et al. (2009) tested the notion suggested by previous research that day users are generally more tolerant of increased user density and more satisfied than overnight visitors, but did not find significant differences among boaters congruent with other research.

Experience. Experience (general experience in the activity, rate of participation, experience on site) represents the most studied individual characteristic and there is existing empirical evidence that it influences crowding norms through refinement of taste or experience of lower density level during previous visitation, in a way that makes more experienced visitors more sensitive to high visitor density (Arnberger & Brandenburg, 2007; Eder & Arnberger, 2012; Manning, 1999).

Attitudes. To what extent visitors' attitudes conform with wilderness values (wilderness purism) may also affect crowding norms: stronger purists seem to more sensitive to social conditions in terms of satisfaction levels and perceived crowding (Manning, 1999). More recent studies also investigate the effects of place attachment in terms of place dependence and place identity on crowding perceptions and other conditions (Budruk, Stanis, Schneider, & Heisey, 2008; Eder & Arnberger, 2012; Kyle, Graefe, Manning, & Bacon, 2004a, 2004b). Kyle et al. (2004a) and Kyle et al. (2004b) found that visitors with higher levels of place identity were more

likely to be more sensitive to crowding while higher levels of place dependence were more likely to be related to more favourable evaluations. This is contrary to the notion that sites that are more easily accessible and convenient to use, and/or for which there are no substitute sites show higher crowding levels (Shelby, Vaske, & Heberlein, 1989)

Demographics. Only a few studies have addressed the possible influence of demographics and none of them found significant relationships between, gender, age, education and crowding (Manning, 1999).

2.3.2. Characteristics of Others

Manning (1999) summarizes the empirical evidence to support the notion that the characteristics of those encountered in terms of type and size of group (e.g. skiers vs. snowboarders), the behaviour of the group (e.g. noise, yelling, littering, noncompliance with rules), and the degree to which they are perceived to be alike (e.g. shared motives, interest, or skills), might affect the normative definition of crowding.

2.3.3. Situational Variables

Perceptions of crowding may also to some extent vary depending on the environment in which the experiences are set, particular situational variables are the type of recreation area, the location with the area, and environmental quality and design (Manning, 1999). Besides inter-area differences in crowding, intra-area differences have received a lot of attention in the literature suggesting that recreationists are more sensitive to crowding in some areas within a site than in others (Manning, 1999). For example, it may be that visitors to a ski resort are more sensitive to crowding on the slopes than in a restaurant facility. The physical, non-human environment may also influence perceptions of crowding, and the notion has been termed “environmental affordances”, “functional density” or “spatial density” (Kim, Lee, & Sirgy, 2015; Machleit et al.,

2000; Machleit et al., 1994; Manning, 1999). Finally, the perceived quality of the environment may play a role as empirical research suggest that perception of crowding also depends on environmental impacts left by previous visitors (e.g. presence of litter, environmental degradation) maybe even more so than by encounters with others (Manning, 1999).

2.3.4. Providing Information

Providing information can be a good management tool (Kim & Shelby, 2011). In addition to changing visitor use patterns in terms of spatial and temporal distribution that could reduce impacts on site (Manning, 2003), information has also been proven to be useful in determining encounter norms and perceptions of crowding (Kim & Shelby, 2011). The findings of Kim and Shelby (2011) in accordance with previous research imply that information can help to create realistic expectations among users and that it can be useful to enable visitors to select their preferred experiences while reducing conflict and negative experiences.

2.4. Other Important Theories

Perceptions of crowding occur due to social interference – when density interferes with goals, activities or values of visitors (social interference theory) (Lee & Graefe, 2003; Manning, 1999, 2007). When people are somehow compromised by others, overwhelmed by others, when the physical environment stimulates the perception of social density (stimulus overload theory), or when people feel like they lose control (Schmidt & Keating, 1979). As crowding may hinder social interaction regulation, it may be felt as an invasion of personal space that limits behavioural options, and result in a state characterized by physiological stress (elevation of skin conductance, blood pressure, stress hormones) which may be reflected in negative affect, tension, anxiety and nervousness (Steg, van den Berg, & De Groot, 2012). As a result people may want to

reduce discomfort (Bell, Green, Fisher, & Baum, 2001). This is where coping mechanisms described in the next section become important in shaping experiences.

2.5. Coping Mechanisms

High overall satisfaction evaluations despite reports of crowding other unacceptable conditions may be explained by coping behaviours (Johnson & Dawson, 2004; Kearsley & Coughlan, 1999; Kuentzel & Heberlein, 1992; Manning, 1999; Manning & Valliere, 2001). Bonnes, Lee, and Bonaiuto (2003) provide the background for this notion and describe the relationship between an individual and the environment as characterized by “a continuous processing of solutions to the problems created by the coexistence of demands, inner dispositions, incentives, invitations, proposals, warnings and threats coming from the outside” (p.110). The primary types of coping behaviour hypothesized in key literature include problem focused forms of coping in terms of spatial, temporal, and activity displacement, and emotion-focused forms of coping in terms of rationalization and product shift (Hall & Shelby, 2000; Kearsley & Coughlan, 1999; Manning, 1999; Tseng et al., 2009). There is a growing number of studies that partly or fully support the three concepts of coping (Arnberger & Brandenburg, 2007; Arnberger & Eder, 2012; Arnberger & Haider, 2007; Arnberger, Haider, Eder, & Muhar, 2010; Hall & Shelby, 2000; Johnson & Dawson, 2004; Kearsley & Coughlan, 1999; Kuentzel & Heberlein, 1992; Manning & Valliere, 2001).

2.5.1. Displacement and Recreational Succession

To avoid crowding and other undesirable impacts, recreationists may change their patterns of activity and may move to more remote sites, and consequently may be displaced by more tolerant users (Manning, 1999). The notion of displacement is reflected in the assumption of recreational choice and substitutability and displacement requires both, an unacceptable

change in site conditions and substitutable settings which is why displacement may not be as applicable to unique or iconic settings (Kearsley & Coughlan, 1999). Thus a potential lack of relationship between density and perceived crowding may be explained by the notion that less tolerant users have been displaced (Manning, 1999; Manning & Valliere, 2001). On the words of Kearsley and Coughlan (1999) a site that originally was attractive to wilderness and solitude seekers may lose these experiential values but may still produce satisfactory experiences through the displacement process.

This may also involve a certain level of danger as displacement mechanisms may push less tolerant users towards more remote sites, more dangerous seasons and conditions beyond their skill level (Kearsley & Coughlan, 1999). In this respect, Moyle and Croy (2007) demand attention to the notion that crowding is not limited to peak seasons as displaced and sensitive visitors are likely to opt for the off season. It remains to note that displacement is not limited to spatial inter-site displacement (shift from one area to another), it can also occur in terms of spatial intra-site displacement (shifts within an area), temporal displacement (shift from one time to another), and activity displacement (shift from one activity to another) (Hall & Shelby, 2000; Manning, 1999).

2.5.2. Rationalization and Product Shift

The process of rationalization is rooted in the theory of cognitive dissonance which reasons that people order their thoughts to reduce inconsistencies and stress and negative emotions, and may be another explanation why satisfaction is often not associated with density levels, since they then tend to evaluate their experience positively regardless of actual conditions (Manning, 1999; Tseng et al., 2009). This seems reasonable considering that recreational activities are self-selected and may involve substantial investment (e.g. time, money, effort),

especially in extraordinary settings, whereas people with low levels of investment should not hesitate in expressing dissatisfaction (Manning, 1999).

Product shift is a related cognitive coping mechanism that describes the adaption or change of the definition of the recreation opportunity in congruence to what visitors have experienced (in response to higher density experienced than expected or preferred) (Manning, 1999).

2.6. Conceptualizations, Relevant Empirical Findings and Hypotheses

This section provides conceptualizations for all other constructs included in the study; satisfaction (including expectations and zone of tolerance) and emotions for the main analysis, and loyalty and acceptability of wait for the exploration of the extended model. Furthermore, relevant empirical studies with regard to the relations between the constructs are outlined and inform the hypotheses that were formulated based on Machleit et al. (2000) whose study will be introduced within the first subchapter dedicated to the satisfaction construct.

2.6.1. Satisfaction

As stated by (Oliver, 1997, p. 13): “*Satisfaction* is the consumer’s fulfillment response. It is a judgment that a product/service feature, or the product or service itself, provided (or is providing) a *pleasurable* level of consumption-related fulfillment, including levels of under- or overfulfillment”. The evaluation contains both, cognitive and affective elements (Oliver, 1997). As expectancy-disconfirmation theory suggests consumers make satisfaction judgments by comparing their prior expectations with the perceived product or service outcome which represents the cognitive element (Oliver, 1980). The affective element (positive/negative) arising from this cognitive process also contributes to (dis)satisfaction (Oliver, 1993).

Expectations and zone of tolerance by level of desire. According to Oliver (1997) the term expectation as used in consumption refers to more than an anticipation of consequences. The interest of research is more set on the function of expectations within satisfaction response where the standard of comparison (or comparative referent) is a key concept (Oliver, 1997). The concept of performance becomes meaningful when it can be compared to some standards, which for the cause of diagnosticity should be of low ambiguity and high objectivity (Oliver, 1997). As a supplement to the discussion of evaluative dimensions and normative theory in outdoor recreation outlined above, in conventional consumer satisfaction research there are several “expectation referents” that can be categorized by level of desire (Oliver, 1997). Based on the works of several authors Oliver (1997) synthesizes a hierarchy of expectations by desire level from ideal, excellence, desired, deserved, needed, adequate, minimum tolerable, to intolerable with a tolerance zone ranging from ideal to minimum tolerable. According to Oliver (1997) the expected level also falls between the ideal and minimally tolerable, although there is also the possibility that consumers will have tolerate expected levels below their minimum level because there are no other options. The range of the wanted levels form ideal to adequate are the ones that motivate consumers, while predicted levels range from intolerable to desired as consumers most likely want more than they know they will get in an imperfect world (Oliver, 1997).

It has also been suggested that expectations may be revised during service consumptions, and that it is most likely this expectation level that will be used in the satisfaction formation (Oliver, 1997). Assimilation theory and adaptation-level theory are similar to the cognitive coping mechanisms describe above. While assimilation theory describes that consumers may be reluctant to admit discrepancies with their prior expectations and may therefore assimilate observed performance into their prior expectation level, adaptation-level theory assumes that

consumers adapt to a certain performance level (Oliver, 1997). Another relevant theory to mention in this context is contrast theory, which describes the tendencies to exaggerate discrepancies in either direction (better or worse than expected) making poor performances worse and good performance better than they were (Oliver, 1997).

Crowding – satisfaction relationship. Consumer behaviour research suggests that both, the physical environment and the social aspect of crowding can influence consumer satisfaction and behaviour (Bitner, 1992; Eroglu & Machleit, 1990; Eroglu et al., 2001; Harrell et al., 1980; Hui & Bateson, 1991; Machleit et al., 2000; Machleit et al., 1994).

However, the main focus of services marketing has been on service quality and satisfaction with regard to the primary service itself although it may be of particular interest to assess the importance of the physical surroundings on consumer evaluations and behaviour in a leisure service setting (Wakefield & Blodgett, 1994). Wakefield and Blodgett (1994) conducted experiments using videotape recordings of high quality and low quality baseball stadiums and their facilities as well a field study comparing experiences of five different football stadiums and found that servicescape quality and crowding are important in determining customer excitement, satisfaction, enduring involvement and repatronage intentions.

A study that draws on the differences in consumer goals during an extended service encounter (more than 30 minutes) has been conducted by Noone and Mattila (2009) in a casual restaurant setting where both hedonic (focus on consumption experience, reflecting the need for pleasure, fun, excitement) and utilitarian (instrumental, functional nature, e.g. to satisfy hunger in a restaurant) goal achievement are possible. A 2 (crowded or not crowded) x 2 (utilitarian or hedonic) x 2 (bad or good service) factorial between-subjects design was employed and participants were randomly assigned to a written scenario and shown a photograph depicting the

interior of a restaurant. Findings suggest that the effect of perceived crowding on satisfaction depended on consumption goal with significantly lower satisfaction ratings for the utilitarian consumption goal. Noone and Mattila (2009) argue that hedonic goals may be slightly different in an extended service encounter setting than in a retail context, that in a pleasure driven service experience consumers might not be as bothered by crowding as it does not interfere with their consumption goals, whereas in a shopping context consumers are more likely to assume that it is more difficult to achieve their goals when it is crowded. Another explanation for the lower impact on satisfaction ratings for consumers with hedonic goals could be that the actual goal is enjoyment and that as suggested in the outdoor recreation context cognitive coping mechanisms moderate the relationship to reduce the dissonance.

Eroglu, Machleit, and Barr (2005) conducted two studies to test whether retail crowding (human/spatial) affects perceived shopping value (utilitarian/hedonic) and whether shopping values mediate the crowding-satisfaction relationship. The first study found weak effects for the crowding-shopping value relationship that were mediated by tolerance for crowding, time spent shopping, shopping intention, and whether or not the respondents bought something. The second study indicates a mediation of the crowding-shopping value relationship by emotions, while the spatial crowding-satisfaction relationship was mediated by emotions and shopping value. Accounting for these mediating variables, the human crowding-satisfaction relationship was positive which supports the inverted U explanation in the crowding literature meaning that, both extremely crowded and uncrowded situations creating undesirable states of over- and under-arousal (Eroglu et al., 2005).

Of particular interest for this study are the three studies conducted by Machleit et al. (2000) which serve as a basis for the design of this study. The objective was to find out whether

the crowding-satisfaction relationship is mediated by emotions, and moderated by tolerance for crowding, prior expectations of crowding and store type. The first two studies are field studies with convenience samples, one conducted with 722 students and one with 153 non-student respondents. The field studies form the basis for this study, while the third study was a laboratory experiment with 231 students. Information on method and analyses for the field studies will be provided throughout the following chapters of this study. Machleit et al. (2000) indicate that emotions partially mediate the crowding (human/spatial)-satisfaction relationship, that in accordance with normative theory, people vary in their (zone of) tolerance for crowding and that the crowding-satisfaction relationship is moderated by prior expectations of crowding and tolerance for crowding. The results of the third study suggests that in addition the relationship is moderated by store type.

In outdoor recreation, the crowding-satisfaction relationship has been reported to be weak or non-existent (Manning, 1999; Tseng et al., 2009) which may be due to a range of mediating variables that are related to satisfaction, such as the weather, scenery, good conditions, and coping mechanisms, attachment to a place (Manning, 1999; Tseng et al., 2009) . Finally, it needs to be considered, that crowding and the relationship with satisfaction may be highly contextual, and depending on activity, place-specific characteristics, and experiences sought (Wickham & Kerstetter, 2000; as cited in Tseng et al., 2009).

2.6.2. Emotions

While the concept of emotions is not easy to define due to a general lack of consensus in the literature (Lewis, Haviland-Jones, & Barrett, 2008; Oliver, 1997), according to Izard (1977) emotions are the primary motivational system for humans and are important in organizing, motivating, and sustaining behaviour.

As Frijda (2008) elaborates:

The notion of emotion [...] serves to resolve discrepancies between what people do or feel and the events surrounding them; between the immediate cues for why they do what they do and what they actually do; between what they do and what they say; between what they do and what seems most appropriate, most useful, most reasonable, and best organized; and between what they do and what they profess to know they should do. It serves to help our understanding that different people may react in different ways to the same situations, and that one given person may react differently to one given situation on different occasions. (p.69)

Emotions in satisfaction research. The relationship of emotions and satisfaction has been demonstrated in the literature (Oliver, 1993; Oliver, 1997; Westbrook, 1987). As Machleit et al. (2000) argue people must rely on some measure of recall for retrospective satisfaction judgments to influence future choices, that mood states tend to bias evaluations in mood-congruent directions (Carson & Adams, 1980; Isen, Shalcker, Clark, & Karp, 1978; Schwarz & Clore, 1983), and that recall is likely to be biased by the momentary emotion associated with the recalled event or experience (Bower, 1981). They further reason that the emotions felt during the experience are likely to play a role in evaluations, recall and future choices of similar trips (Machleit et al., 2000).

Typology. A classification of 10 emotions developed by Izard (1977) and based on his Differential Emotions Theory has been used in satisfaction research (Oliver, 1993; Westbrook, 1987) and has also been used as a measure of emotions in studies by Machleit et al. (2000) and Eroglu et al. (2005) with crowding as an independent variable. Included in this typology are 7 negative emotion types (sadness, anger, disgust, contempt, fear, shyness, and guilt), 2 positive

dimensions (joy and interest) and one neutral type (surprise) (Izard, 1977). This typology will also be used in this study.

Machleit et al. (2000) find the extend of the negative emotions appealing due to the negative reactions expected from increased perceptions of crowding, while Oliver (1993) argues that a great variety of negative affect can be important due to an innate positive bias on the part of the consumers that generally is thought to maximize positive and minimize negative affect states. Moreover, as Oliver (1993) points out, negative experiences are supposedly more salient, perceived with higher intensity, and demand a greater variety in terms of expression (Derbaix & Pham, 1991). Other studies also rely on more specific emotion types.

In this line, Faullant, Matzler, and Mooradian (2011) argue that more specific emotions should be studied with regard to the impact of emotions on customer satisfaction, as so far emotions have frequently been operationalized on a broad level (positive and negative emotions, pleasure and arousal). Furthermore joy and fear have been identified as core emotions in the mountaineering experience may generalize to adventure tourism activities more generally; it has been confirmed that joy increases satisfaction and that the experience of fear decreases satisfaction (Faullant et al., 2011). Bonnefoy-Claudet and Ghantous (2013) found three emotions, joy, excitement and peacefulness to be of importance for ski resort experiences (surprise was not relevant) and also found overall perceived value to mediate the emotion-satisfaction relationship. This result was based on a short list of 11 positive emotions that were relevant for more than 50% of the respondents.

Crowding and emotions. Machleit et al. (2000) suggested that the nature and extend of emotions activated by perceptions of crowding could play a role in understanding the crowding-

satisfaction relationship, and indeed found mediation of emotions for the latter relationship. Similar results were indicated by Eroglu et al. (2005) as described above.

As stated above perceptions of crowding may be reflected in negative affect, tension, anxiety and nervousness (Steg et al., 2012). Hui and Bateson (1991) demonstrated that crowding decreases feelings of pleasure in a service setting while Tseng et al. (2009) showed with a sample of boaters that crowding partially mediated the relationship between prior expectations for seeing others and enjoyment. When expectations were exceeded, there was a negative impact on enjoyment, implying that crowding had a negative effect on enjoyment. Furthermore, the crowding satisfaction relationship was mediated by enjoyment and safety. There are also indications of increased enjoyment caused by increased density for certain developed settings and events where a lot of visitors are expected (Kim, Lee, & Sirgy, 2016; Mowen, Vogelsong, & Graefe, 2003). Eroglu and Harrell (1986) came up with the term “functional density” for situations when increased density supports motives and is evaluated positively.

Machleit et al. (2000) proposed and supported several hypotheses with regard to the relationships between crowding and the 10 emotion types suggested by Izard (1977) in a retail shopping context. This study bases its hypotheses in respect to crowding and emotions more or less on the same reasoning outlined in the following paragraphs.

It is hypothesized that increased perceptions of crowding are associated with increased negative emotions and decreased positive emotions (Machleit et al., 2000). More specifically and in line with this notion, joy should decrease with increased perceptions of crowding due to the experience of stress associated with crowding (Izard, 1977). Machleit et al. (2000) also propose that environments that are not crowded may result in the opposite, increased feelings of joy, due to the added space. Interest, the other positive emotion type, should also decrease in conforming

to goal inference theory as interest is related to motivations and the attainment of goals (Izard, 1977).

Izard (1977) distinguishes the negative emotions of anger, disgust and contempt from the other negative emotions using the term “hostility triad” to describe these feelings:

One may feel irritable in anger, strong distaste in disgust, and cool and distant in contempt. In day-to-day experiences, however, anger, disgust, and contempt often seem to go together. Situations that elicit one of these emotions often elicit one or both of the others. (p.329)

According to Izard (1977) anger is evoked by feeling physically or psychologically restrained from doing what one wants to do, due to physical barriers, rules, regulations or one’s own incapability. Other common causes include personal insult, everyday frustrations (goal interference), interruption of joy or interest, feeling taken advantage of or forced to do something against one’s own will. In agreement with goal interference theory and Machleit et al. (2000) who argue that density can result in restraint and frustrations considering that people probably have to adapt and move potentially against one’s wishes, it is assumed that feelings of anger will be associated with perceptions of crowding. In a ski context, this can be especially relevant, as recreationists are likely to have to adapt their movements and pace due to the presence of others. Furthermore, waiting longer in line for lifts with increased density may cause feelings of restraints, as it limits the time that can be spend on the slopes, which is supposedly the main goal. Feelings of disgust (wanting to get away from something or someone) can for example be elicited by bad smell, dirty facilities or bad behaviour (another’s or that of oneself) Izard (1977). Given that perceptions of crowding supposedly depend on the likeness and behaviour of others, it seems possible that crowding is related to feelings of disgust. Situations that elicit jealousy,

greed, and rivalry can activate feelings of contempt (feeling of hostility and prejudice) (Izard, 1977). Considering that skiing can be an activity of competitive nature and crowding can interfere with one's goals, the association between crowding and contempt should be tested.

Although Machleit et al. (2000) suggested the strongest relationship to be found between crowding and the hostility triad, they also hypothesized weaker relationships with the other negative emotions, sadness, shyness, guilt, and fear. Sadness can occur with the experience of failure to meet objectives and continuous overstimulation, which can also be related to crowding (Izard, 1977; Machleit et al., 2000). With increased attention to the self, when a decrease in interest or joy occurs, with barriers to positive emotion-eliciting exploration, or with contempt from oneself or others, the feelings of shyness or shame can be activated (Izard, 1977). Guilt feelings are closely related to feelings of shyness and shame, and can be caused by sanctions (external or internal) and can be related to misconduct or violations of social conventions (Izard, 1977; Machleit et al., 2000). These feeling could be associated with cutting the line, blocking the way for others or impoliteness (Machleit et al., 2000). Moreover feelings of guilt and anger can interact in frustrating situations (Izard, 1977). Machleit et al. (2000) proposed that crowding can increase feelings of insecurity while according to Izard (1977) fear is experienced when something threatening occurs. It could also be that fear of failure increases in the presence of others as skiing does require certain skills.

Finally, the neutral emotion of surprise could be related to crowding as it is elicited when something unexpected happens (Izard, 1977). When people experience more crowding than expected this should thus lead to increased feelings of surprise.

2.6.3. Loyalty

In the classical consumer marketing literature customer loyalty is defined as “a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, *despite* situational influences and marketing effort having the potential to cause switching behaviour” (Oliver, 1997, p. 392). According to the conceptualization of Oliver (1997) before consumers become behavioural loyal, they go through three phases: a cognitive phase first, followed by an affective phase and a conative phase.

As stated by Oliver (1999) most business recognize that it is not only profitable to have satisfied but even more so to also gain a loyal customer base. On the words of Ajzen and Driver (1991) and planned behaviour theory, behavioural intentions are direct predictors of actual behaviour. Zeithaml, Berry, and Parasuraman (1996) summarize possible favourable behavioural intentions (conative loyalty) that can be expressed by consumers including to praise the business, to prefer the business over others, to increase purchases, to be willing to pay a higher price, or to indicate directly that they are bonding with the business.

This study extends the crowding-satisfaction model to include visitor (conative) loyalty on an explorative basis with the locus of loyalty on the service provider, the ski resort business and not the destination Sirdal. With an increasing interest in loyalty studies within tourism it is important to determine the locus of loyalty as it can, for example, be related to a particular business, an activity, or place (Pearce & Kang, 2009).

In the context of crowding research within recreation the concept of visitor loyalty seems to be closely related to the studied concept of displacement (Arnberger & Brandenburg, 2007; Arnberger & Eder, 2012; Arnberger & Haider, 2007; Arnberger et al., 2010; Dawson, Havitz, & Scott, 2011). The concept of place attachment (emotional or meanings visitors associate to

places) which has also been linked to crowding (Budruk et al., 2008; Eder & Arnberger, 2012; Kyle et al., 2004a, 2004b) has received growing interest within tourism research as an attitudinal antecedent to visitor loyalty (Kil, Holland, Stein, & Ko, 2012; Lee & Shen, 2013; Prayag & Ryan, 2012; Su, Cheng, & Huang, 2011; Yuksel, Yuksel, & Bilim, 2010).

Although the satisfaction-loyalty relationship has been studied and confirmed repeatedly also in service contexts (Baker & Crompton, 2000; Faullant, Matzler, & Füller, 2008; Lee, Graefe, & Burns, 2004; Su et al., 2011; Tian-Cole, Crompton, & Willson, 2002) and with regard to destination loyalty (Lee, Graefe, & Burns, 2007; Prayag & Ryan, 2012; Rivera & Croes, 2010; Yoon & Uysal, 2005), few attempts have been made to link crowding to behavioural outcomes or intentions.

A basic theory in environmental psychology relevant to crowding and related behavioural changes was proposed by Mehrabian and Russell (1974) and posits that environmental stimuli influence emotional states in terms of three basic domains (pleasure, arousal and dominance), which result in approach (desire to stay, look around, explore, communicate) or avoidance.

A few studies have linked perceptions of crowding to behavioural outcomes. Harrell et al. (1980) found that crowding affected shopping behaviour and customers' feeling about retail outlets and shopping trips. Hui and Bateson (1991) based their experimental study (with a bar and a bank service setting) on the Mehrabian and Russell (1974) approach and found that the density-crowding relationship is mediated by perceived control, and that crowding was negatively associated with the pleasantness of the service experience which in turn was associated as expected with approach-avoidance responses. Noone and Mattila (2009) found that crowding negatively affected positive behaviours such as the desire to spend more money and time at a restaurant. As outlined earlier Wakefield and Blodgett (1994) found that crowding is important in

determining enduring involvement and repatronage intentions in the leisure setting of sports stadiums. Hwang, Yoon, and Bendle (2012) also build on the Mehrabian-Russel Model and found in an experimental virtual reality study simulating conditions a restaurant waiting area, that crowding had significant effects on emotions (arousal and dominance, but not pleasure) and a more direct than indirect impact on approach-avoidance responses.

With regard to changing consumer behaviour in a skiing setting, Dawson et al. (2011) who investigated the effects of changing climatic conditions on substitution behaviours (in terms of spatial, temporal and activity substitution or displacement) and loyalty, found that highly involved skiers were more likely to adapt their skiing behaviour and that less involved skiers were less committed to the service provider.

One particularly interesting study for the context of the present study was conducted by Alexandris et al. (2006) to propose a model for measuring service quality in ski resort setting, including place attachment (place identity and place dependence) and visitor loyalty. Service quality was measured with three dimensions, physical environment quality, including sub-dimension measurements of design, ambient conditions and social conditions and the item “lifts are usually crowded”, interaction quality and outcome quality. The results indicated that both interaction and physical environment quality were associated with place attachment, while both dimensions of place attachment were associated with loyalty. This study suggests that crowding will have an influence on loyalty, at least indirectly.

2.6.4. Acceptability of Wait

Some indications for studying the role of waiting times at lifts in a ski resort setting have already been provided in the first chapter of the literature review (Unbehaun et al., 2008; Won et al., 2008; Won & Hwang, 2009). Besides density (and crowding), one of its supposedly closest

correlate, waiting time and the evaluation of it, seem to be particularly interesting to study in a skiing context as it is a recurring theme for the duration of an experience at a ski resort. The length of the line and waiting time for lifts determine how much time can be spent skiing, and not just once, like for the experience of queuing for tickets, but for each turnaround trip that is taken. This is supposedly particularly interesting in small ski resorts where the variety and length of slopes is limited and queuing and taking the lift take a relatively big percentage of the time in relation to time spent skiing or snowboarding on the slopes. This is probably also one of the reasons why the size of the skiable area is ranked high in importance for choice of ski resort (e.g. Unbehaun et al., 2008).

Graefe and Vaske (1987) write:

Increasing recreational use leads most directly to tangible outcomes like having to wait in line or impacts on the natural environment (e.g., litter). These social and natural impacts lead to a variety of perceptual and behavioral responses by tourists such as reduced satisfaction, increased crowding, or changes in trip plans. (p.392)

Similar to the conceptualization of crowding, the acceptability of waiting time then is a subjective perception and evaluation of the more tangible outcome waiting time that is more directly related to the service performance. Referring to the evaluation dimensions as outlined by Manning et al. (1999) “acceptability” would rank somewhere between preference on the higher end of norms and tolerance on the lower end.

According to Hui and Tse (1996) waiting time is a vital factor in service evaluations and that to reduce negative effects there are two options, either reducing the actual waiting time, or approaching the problem by reducing the negative effects connected to waiting times without

changing the duration of the wait. Based on the effects of uncertainty-reduction (information makes wait more predictable and controllable resulting in more positive affect) and cognitive reappraisal (information facilitates reinterpretation of the wait resulting in perception of more acceptable wait), the authors investigated the impact of two types of waiting information (waiting duration information and queuing information) on customers' reactions and evaluations to waits by means of an experimental study with students (Hui & Tse, 1996). They found an indirect effect of acceptability of wait on service evaluation through affective response which is not surprising with regard to findings in satisfaction studies that find cognitive evaluative responses to be antecedent affective responses (Hui & Tse, 1996; Oliver, 1997). The authors also found a significant mediating effect through both of the latter constructs on the information-evaluation relationship. Hui and Tse (1996) also noted that information does not play a role in short wait conditions, that waiting duration information is most useful in intermediate wait lengths, while queuing information is more appropriate for long waits.

Bielen and Demoulin (2007) conceptualized a construct called waiting time satisfaction with determinants including perceived waiting time, satisfaction with information provided and satisfaction with waiting environment. They found waiting time satisfaction to be an antecedent to satisfaction, a moderator of the satisfaction-loyalty relationship, and a mediator between perceived waiting time and satisfaction.

With respect to the interaction with crowding Mattila and Hanks (2012) found in line with (Machleit et al., 2000) that waiting in crowded environments resulted in negative emotions (frustration, anger, irritation, annoyance, anxiety).

Several psychological considerations in managing consumers' acceptance of waiting time have been proposed by Maister (1984) and several strategies have been suggested with the goal

of reducing negative service evaluations caused by waiting times (Durrande-Moreau, 1999). Kellaris and Kent (1992) for example, found that music can influence the subjective evaluation of waiting time through emotions felt during the wait. Similar ideas were suggested by Baker and Cameron (1996) who see affective responses to the service environment as antecedents to perceptions of waiting time.

An exploratory goal of this study is to assess the role of acceptability of wait as a construct in the crowding-satisfaction-loyalty model.

2.6.5. Hypotheses

Based Machleit et al. (2000) and the theoretical framework presented above, the following hypotheses have been adapted and extended to fit the overall model of this study depicted in figure 1.

H1. Perceived crowding should covary positively with negative and neutral emotions and covary negatively with positive emotions. Specifically:

- a. Anger, disgust, contempt, fear, shyness, guilt, sadness and surprise covary positively with crowding.
- b. Joy and interest covary negatively with crowding.
- c. The highest covariations will be observed for the hostility triad of emotions (anger, disgust, contempt).

H2a. Higher levels of crowding will be associated with lower levels of satisfaction and loyalty.

H2b. The relationship between crowding and satisfaction will be mediated by the emotions associated with the skiing experience.

H2c. The relationships between crowding and loyalty will be mediated by satisfaction.

H3a. Acceptability of wait should covary negatively with perceptions of crowding.

H3b. Higher levels of acceptability of wait will result in higher levels of satisfaction and loyalty.

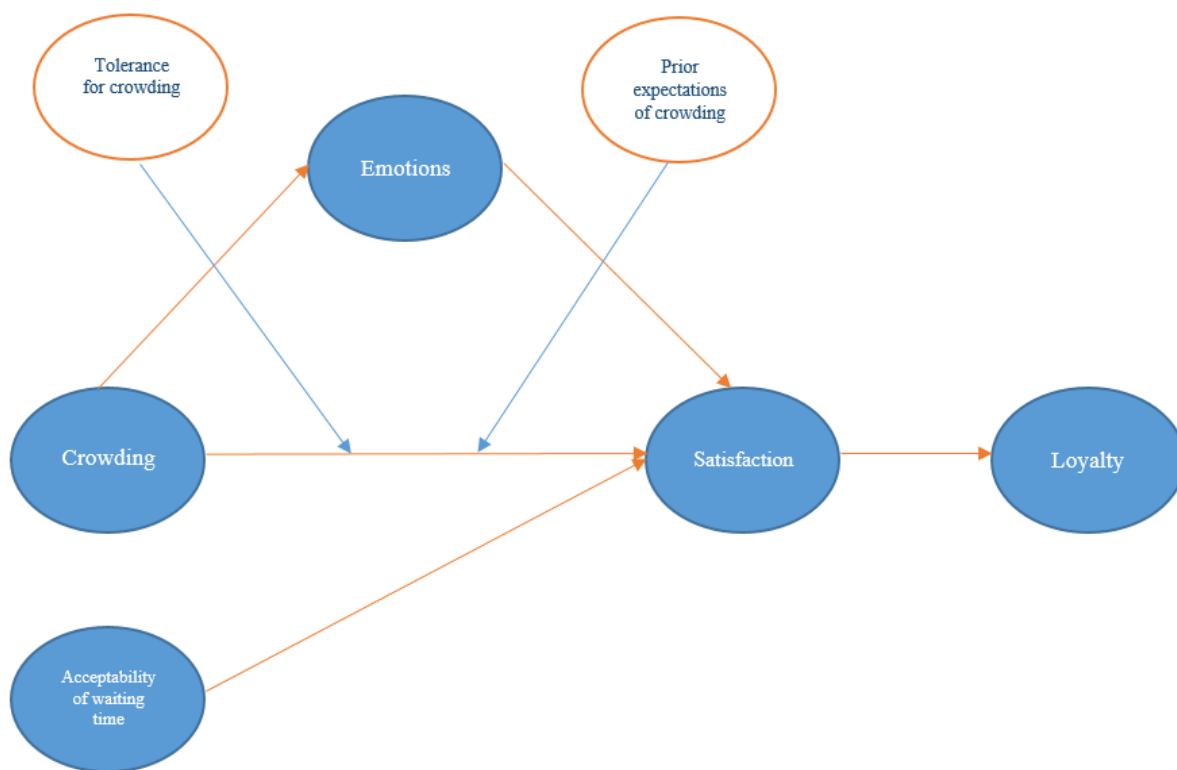
H3c. The relationship between acceptability of wait and loyalty will be mediated by satisfaction.

H4. Prior expectations of crowding moderate the crowding-satisfaction relationship.

H5a. Individuals vary in their ability to tolerate crowding levels.

H5b. The crowding-satisfaction relationship depends on visitors' tolerance for crowding.

Figure 1. Overall Model



3. Method

This section describes how the study was conducted in terms of design, sample, data collection and analyses.

3.1. Design

A descriptive research design with the unit of analysis being the single experience of visitors to a ski resort in Norway was chosen in order to be able to answer the research questions.

In order to be able to compare the results with the original study, the design and method of the study are based on Machleit et al. (2000). Adaptations and extensions with regard to the context, the hypotheses, and the analyses have been made.

Machleit et al. (2000) report two field studies and back up their findings with laboratory experiment. This study comprises just one field study basing the analysis on data coming from a cross-sectional survey, with the inherent advantage of ecological validity as skiers and snowboarders reporting their real experiences, and with the disadvantages of the data being merely correlational in nature and based on retrospective self-reports (Machleit et al., 2000). This means that it is hard to control for many elements of the experience that might influence crowding perceptions, and the causal nature of the relationships remains somewhat unknown (Machleit et al., 2000). The objective measure of visitor density is introduced to improve the validity of this design. Note that the wording may allure to making causal inferences in some parts of the analysis even though causal inferences cannot be made. However the use of words and phrases like “effect” and “influence”, “resulting in/from” help conveying and interpreting the results in a meaningful way.

3.2. Sample

A convenience sample of skiers and snowboarders at Sirdal Skisenter in the southwest of Norway was asked to fill out a retrospective online questionnaire. The resort was chosen due to its proximity to the University of Stavanger, the accessibility by bus from Stavanger to Sirdal, and also due to it relatively bigger size in comparison to other resorts in the Sirdal region. Furthermore Sirdal Skisenter is a small-scale ski resort and it was assumed that the impact of crowding would be bigger in a resort like this, due to a relatively long waiting time at the lifts and a relatively long duration associated with getting to the top of the hills in relation to actual

skiing/snowboarding time. One downside of choosing this resort is that it was assumed that most visitors are already loyal to the resort deeming the outcome variable especially in terms of behavioural intentions to revisit suitable only to a limited extent. Furthermore, if people are regular visitors their expectations of crowding may be rather accurate, this may be a risk of lack of variance in the prior expectations construct. The two former resorts Tjørhomfjellet and Ålsheia became one resort in 2014 with a total of 22 slopes, and nine lifts including the only chair lift in Sirdal which takes visitors up to 928 meters offering relatively long easy, moderate and difficult runs (Sirdal Skisenter, 2016). Each of two areas has restaurant facilities that fit about 150 visitors inside and some outside which makes the resort attractive in terms of data collection. A map of the area can be found in appendix A.

According to the management of the resort, on a normal day the waiting time for the chairlift can be around 15 minutes, whereas on days with lower visitor numbers (up to 1,500 visitors) people do not have to wait more than 2 minutes. As an approximate, on a day with 2,500 guests the average waiting time is about 8 minutes (L. E. Wang, personal communication, April 25, 2016).

The planned sample size of 240 respondents was calculated by multiplying the planned number of items, including the constructs crowding, acceptability of wait, satisfaction, loyalty, prior expectations, tolerance for crowding, and emotions (48 items) by 5 in case all constructs had to be included in the analysis at once at the item-level. According to Pallant (2006) it is adequate to have five cases per item in most cases (for factor analysis). Considering the limited resources and time for this project, the planned sample size was thought to be realistic to achieve. In conforming with the assumptions that the desired power, and expected effect sizes should be considered in planning an adequate sample size another rule of thumb ($n \geq 104 + \text{number of}$

individual predictors) suggested a sample size of 148 (Tabachnick & Fidell, 2013). Again, this would have been appropriate if the entire model had been analysed all at once (for example with SEM). A higher sample size was aspired due to relatively small effect sizes expected (for example especially for crowding as a predictor for loyalty or with regard to some of the emotions), possible measurement error for less established measures, expected skewness for satisfaction and loyalty as outcome variables, and the possible deletion of outliers (Tabachnick & Fidell, 2013).

3.3. Data Collection

Email addresses were collected during the course of four weeks on eleven days from 18 February 2016 to 13 March 2016 from skiers and snowboarders at Sirdal Skisenter. In order to achieve some variance in perceptions of crowding and acceptability of wait, data was collected on week days where less people were expected to visit as well as on weekends and days in the week of the winter holiday (15 -21 February) where more people were expected to visit the resort. Table 1 shows visitor numbers by sold tickets and filled out questionnaires for the days that data was collected. Note that respondents had to indicate the correct day of their visit and if they by false recall noted the wrong date their answers were associated with a false visitor number. Nevertheless the recollection seemed rather accurate as it could be monitored when emails were sent to email addresses collected on certain days and when responses for these days came in. Visitors were approached near the restaurants and ticket offices of the two areas that comprise the ski resort, Tjørhomfjellet and Ålsheia, while the visitors were queuing for tickets, or having a break. The respondents, preferably adults, were approached in English to make sure they would be able to fill out the online questionnaire in English. Me, the single author and researcher for this study, personally approached all respondents, introduced myself with my name and as a

student at the University of Stavanger, and explained that I was interested in finding out more about their skiing experiences on that particular day for the purpose of completing my Master's degree. Then I asked them whether they were willing to sign up for my online questionnaire. I approached the respondents face-to-face with the intention to make it easier for them to relate to me and to my situation, to build their trust and personal investment and ensure high response rates (Neuman, 2011). I further explained that their email addresses would not be used for anything else but the research project, that it would take about ten minutes to fill out the online questionnaire and that I would appreciate their participation. When they agreed to sign up, I mentioned that they are also in a draw for two day ski passes at Sirdal Skisenter to give them another incentive to go through with their intentions to fill out the questionnaire. I avoided giving out this last information before they agreed to sign up to decrease the number of participants with low commitment that would only sign up to have a chance at winning the prize, and that supposedly would complete the survey in a less committed and potentially useless way. As an immediate token of appreciation I offered chocolate and caramels at the end of the encounter.

3.3.1. Online Data Collection

The persons that signed up for the online survey received an email invitation with the link to the online questionnaire either on the same day or on the day after they had signed up, and within a time frame of well below 48 hours after being approached. Two reminder emails were sent out in an interval of two days, encouraging that most respondents would fill out the questionnaire within a week after their experience to avoid respondent recall problems (Neuman, 2011). To ensure anonymity respondents' IP addresses were not saved and thus it was not possible to see who had responded. Therefore all respondents received three emails in total informing them about this inconvenience and giving them the opportunity to unsubscribe. The

online questionnaire was closed after the last respondent answered on 21 March 2016. Appendix B provides the wording of the invitation and reminder emails.

As Machleit et al. (2000) outline and justify, the retrospective survey-based approach may not be ideal in terms of asking respondents to recall and rate their recent experience, but it was considered acceptable given that Barrett (1997) found retrospective ratings of emotion to be quite accurate, that it has been used before, and that respondents completed the online survey within a short period after they had visited the ski resort.

Table 1

Data collection and Sample Size

Dates	Thu 18 Feb	Fri 19 Feb	Sat 20 Feb	Sun 21 Feb	Wed 24 Feb	Thu 25 Feb	Sat 27 Feb	Sun 28 Feb	Sun 06 Mar	Sat 12 Mar	Sun 13 Mar
Visitors	2,00 7	2,23 4	1,61 1	505	624	412	2,78 7	1,73 6	1,11 2	1,64 4	1,34 4
Sample	16	16	27	13	12	19	29	29	29	22	18

3.3.2. Survey Instrument

The outline of the questionnaire by Machleit et al. (2000) was taken as a basis and some extensions and adaptations have been made (including measures for further analysis that are not relevant for this study). The questionnaire was then reviewed in terms of face validity, layout and response format by four staff members of the Norwegian School of Hotel Management and pre-tested by a convenience sample of 20 people that ski and/or snowboard. Participants were asked to voice any concerns they may have (e.g. in terms of intelligibility, logic user friendliness and appropriateness). The sample size was considered sufficient as participants pointed to the same issues and the level of uniqueness of the individual feedback was relatively low. Some changes have been made, a list of these alterations can be found in appendix C.

The final online questionnaire is attached as appendix D. On the first page, the participants were thanked for their time and they were informed about the approximate time that it would take to complete the questionnaire (10 minutes). Then the purpose of the study was described as follows: “I am interested in the feelings and opinions that people have on a skiing day. The results can help to improve the services provided to visitors [...]”. Moreover the respondents were informed that the responses are treated confidentially and anonymously and that the information will not be used for any commercial purposes. After a page break that was put in place in order to reduce the likelihood that the participants would skip the information, the participants were asked to take a few minutes to think about their skiing experience on the day that I approached them and to answer the questions as good as they could, informing them that there were no right or wrong answers. Informing respondents about the anonymity of the answers and that there are no right or wrong answers, may make respondents less likely to edit their answers to be more socially desirable, consistent and the like (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A short clarification note stated that Sirdal Skisenter comprises both former separate resorts, Tjørhomfjellet and Ålsheia. Page three asked for more general questions, starting with the date when I asked them to sign up for the questionnaire, whether they were skiing or snowboarding, how long they travelled from their permanent residence to the resort, the length of stay at the resort in days, how many people they were travelling with including themselves and who they were travelling with, their skill level (concept of specialization) and ending with the question whether it was their first visit to Sirdal Skisenter. If they answered yes, they were directed to page five; respondents that were revisiting the resort continued to page four where they were asked about their experience use history in terms of how many years they had been visiting and how many days they estimate to visit Sirdal Skisenter per season. Page five proceeded with questions related to their particular experience at the resort. In accordance with

Machleit et al. (2000) the questions were arranged in a way to realistically reconstruct the skiing experience in the participants mind. First they were asked about their perceptions of crowding, the acceptability of the wait at the lifts, overall satisfaction, and page six continued with the emotions felt during the experience. Next the respondents were presented with questions concerning their behavioural intentions and the final page included questions about their prior expectations of crowding, crowding tolerance, and demographics. It could be argued that prior expectations of crowding should have preceded perceived crowding questions for a realistic sequence (Oliver, 1997), but since the concept was operationalized as a direct measure of discrepancy and not measuring expectations in a numerical way (see measures section below) this was considered to be of minor relevance. The survey was conducted in English to avoid translation bias with regard to the original measurements in English. Given that most Norwegians have a good command of the English language (Education First, 2015) this was not considered a major issue.

3.3.3. Measures

In accordance with the conceptualizations described in the previous chapter the concepts crowding, emotions, satisfaction, loyalty, acceptability of wait, prior expectations of crowding, and tolerance for crowding have been operationalized as follows:

Crowding. Perceived crowding was measured using an adapted version of the four-items scale of human crowding validated by Machleit et al. (1994) and Machleit et al. (2000). Machleit et al. (2000) used a second dimension named “spatial crowding” which was irrelevant for this study since it refers to spatial crowding in a store and since this study is placed in a variety of settings at the resort but mainly outdoors. They reported that all items loaded as expected on the two dimensions and that the coefficient alpha for human crowding was .90 (Machleit et al.,

2000). The items used in this study were “The ski resort seemed very crowded to me”, “The ski resort was a little too busy”, “There wasn't much traffic at the ski resort during my trip” (reverse coded), and “There were a lot of people at the ski resort”. Respondents had to indicate to what level they agreed with the statements on a 7-point scale from “strongly disagree” to “strongly agree”. As an addition, participants also had to indicate how crowded certain areas in the resort were at the time of their visit (the lifts, the service facilities, the slopes, and the resort overall). This measure is very common in outdoor recreation (Shelby et al., 1989; Vaske & Shelby, 2008), but in this study it merely provides additional information on the relative crowdedness of the areas, is not included in any of the main analyses and marked as “alternative crowding measure” in table E1 in appendix E. Nevertheless a short comparison of the common one item measure frequently used in outdoor recreation (Item C4) and the 4-item measure by Machleit et al. (1994) in terms of relationships to other concepts will be provided. Lee and Graefe (2003) call for a better measurement of perceptions of crowding and suggest that a multiple-item measure may contribute to finding stronger relationships between variables.

Emotions. Machleit et al. (2000) used two different measures of emotions, pleasure and arousal dimensions according to Mehrabian and Russell (1974) and the 10 emotion types by Izard (1977). For simplicity and because the latter scale outperformed the former by offering a richer assessment of experiences (in a shopping context) (Machleit & Eroglu, 2000), this study measures emotions with the Differential Emotions Scale (DES) by Izard (1977) only. The 10 emotions joy, sadness, interest, anger, guilt, shyness, disgust, contempt, surprise, and fear were measured with 27 items (see table E1 in appendix E for the items). Due to the fact that the study was conducted in Norway, to ensure understanding, a translation of the adjectives to Norwegian (bokmål) was added in brackets and Norwegian pre-test participants confirmed the correct

translations. In accordance with Machleit et al. (2000) respondents indicated the extent to which they felt as described by each of the adjectives during the experience at the ski resort on a 5-point scale from “not at all” to “very much so”. Coefficient alpha reliability was reported to range from .71 to .90 for all emotion types (Machleit et al., 2000).

Satisfaction. The satisfaction measure was not adapted from Machleit et al. (2000) for two reasons. First of all, the measure included intention to return and intention to recommend which overlaps with the loyalty measure. In this study, satisfaction and loyalty are treated as two distinct concepts (Oliver, 1999). Second, as Manning (1999) outlined, in outdoor recreation settings, satisfaction is often not sensitive enough to detect changes in site conditions, therefore and because satisfaction ratings are often highly skewed, an 11-point scale was employed to capture the full variance of responses as suggested by Fornell, Johnson, Anderson, Cha, and Bryant (1996) and Chan et al. (2003). The 4-item measure used in this study was adapted from Homburg, Koschate, and Hoyer (2005) and the items were “All in all, I am satisfied with this trip to Sirdal Skisenter”, “This trip to Sirdal Skisenter meets my expectations”, “This trip to Sirdal Skisenter compares to an ideal ski resort experience”, and “Overall, how satisfied are you with the visit to Sirdal Skisenter?”. For the first three items respondents indicated their level of agreement with the statements, and the scale for the last item ranged from “very dissatisfied” to “very satisfied”. Homburg et al. (2005) reported a very high composite reliability of .98.

Loyalty. Loyalty is commonly measured with behavioural intentions referring to conative loyalty in terms of intentions to recommend and to revisit (Moore, Rodger, & Taplin, 2013; Tian-Cole et al., 2002). In this study the measure was adapted from Lee et al. (2007). The wording of the items was changed from “I would” to “I will” to make the statements more straightforward and easy to respond to. The four items were “I will recommend Sirdal Skisenter to people who

seek my advice”, “I will tell other people positive things about Sirdal Skisenter”, “I will recommend Sirdal Skisenter to my friends” and “I will visit Sirdal Skisenter again”. Respondents were asked to indicate their level of agreement with the statements on a 5-point scale. Lee et al. (2007) validated the measure in terms of reliability (Cronbach’s alpha was .91), convergent (factor loadings ranging from .71 for intentions to revisit to .94) and discriminant validity (low correlations with other constructs).

Acceptability of wait. This construct was measured by an adaptation of the two items developed by Hui and Tse (1996): “The duration of the wait was acceptable” and “The waiting time at the lifts was too long”. A third item was added inspired by Mattila and Hanks (2012) to have a minimum of a 3-item measure to be able to make better statements about its validity (Churchill, 1979): “The waiting time at the lifts was reasonable”. All of the items were measured on a 7-point scale and respondents had to indicate to what level they agreed with the statements. Originally it was considered to include an objective measure of waiting as with crowding and the objective measure of density, but it was not possible to attain exact averages of waiting times during those days, also due to the fact that the waiting times vary at different lifts within the resort.

Prior expectations. The 1-item measure for prior expectations of crowding was adapted from Machleit et al. (2000). Respondents were asked to indicate their prior expectations of crowding on a 7-point scale from 1 (“fewer people than were expected”) to 4 (“about as many people as expected”) to 7 (“more people than were expected”). This is a direct measure of discrepancy in accordance with expectancy-disconfirmation theory indicating both, strength and direction (Oliver, 1997, p. 103).

Tolerance for crowding. The 4-item measure was developed by Machleit et al. (2000), originally as “intolerance for crowding”. A confirmatory factor analysis indicated that all items loaded on one factor and the coefficient alpha was .79. The adapted items were “I avoid crowded slopes whenever possible” (reverse coded), “A crowded slope doesn’t really bother me”, “If I see a slope that is crowded, I won’t even go” (reverse coded), and “It’s worth having to deal with a crowded slope if I can save time and money”. The items were measured on a 7-point scale and respondents had to indicate to what level they agreed with the statements.

3.4. Data Analyses

The data was analyzed using IBM SPSS Statistics 21. The mediation and moderation analyses were conducted with PROCESS for SPSS. The latter is considered a more sophisticated method of mediation analysis than the more traditional “causal steps approach” by Baron and Kenny (Hayes, 2013) used in the original paper by Machleit et al. (2000). PROCESS also allows continuous variables for moderation analysis so that it is not necessary to divide prior expectations and tolerance for crowding in different artificial arbitrary categories, as it has been done previously (Machleit et al., 2000), which would result in a loss of information and would not actually test whether the effect of the independent variable on the dependent variable differs as a function of the moderator variable (Hayes, 2013, p. 300).

Alternative methods of analysis, such as structural equation modelling (SEM) and partial least squares SEM have been carefully considered as these methods would have been able to analyze the entire model at once. SEM considers several equations simultaneously and a variable can be seen as a predictor and as an outcome as well as it considers the relationships between the latent constructs and the observable variables in the measurement models (Nachtigall, Kroehne, Funke, & Steyer, 2003). Furthermore SEM takes measurement error into account to provide more

accurate estimates of relationships (Hair, Black, Babin, & Anderson, 2014). However, due to the complexity of the model and the application of SEM (Nachtigall et al., 2003), and the limited resources for this project, PROCESS was preferred in terms of ease of use, and simplicity of interpretation. Besides, Hayes (2013) argues that the use of SEM for complex mediation models in overall terms is neither necessary nor better. The analysis section does not make use of conditional process analysis as the moderation analyses' focus is on the direct relationships between the predictor and dependent variable and moderated mediation was not a hypothesized model to test. The main effects were calculated by means of linear regression analysis conducted in SPSS where they were not provided by the PROCESS macro. For the analyses the overall model depicted in figure 1 is split into different parts which will be determined respectively in the results section of the next chapter.

4. Findings

This chapter presents the analyses and results of this study starting with the description of the sample and the data, the assessment of the normality of the distribution, and the validation of the measurements. Before the results of the main analyses are outlined, a section about the important assumptions is presented.

4.1. Achieved Sample

In total, 387 email addresses were collected, 26 were not usable, resulting in 361 email invitations to participate in the online questionnaire that have been sent out. The response rate was 73% with 263 people participating in the survey. Out of those, 248 questionnaires were completed and usable, meaning that all items for the model had been answered. This equals a completion rate of 68% and indicates that the questionnaire was not too long as only 6% did not

fill out the entire questionnaire. On average participants took 13 minutes to complete the questionnaire.

248 questionnaires were used for the analyses while the range of cases that were used varied from 222 to 243 due to pairwise deletion of cases with missing values (some outlier values were deleted; see below). The larger part consisted of male respondents (62%) while 36% were female. The mean age of the sample is 35 years ($SD=10.70$), while the youngest was 11 and the oldest participant was 75 years old. The preferable approached respondent at the ski resort was over 18 years old because it was reckoned that the positive response rate would be higher among adults. Furthermore, youngsters are not likely to have as much decision power when it comes to the choice of a ski resort which is important when it comes to behavioural intentions resulting from the experience. Nevertheless, 9 respondents under 18 years are included in the sample. This is not representative of the population, as in fact at times, especially during the week of winter holidays, the majority of visitors seemed to be teenagers. 18 nationalities are included in the sample, however, a majority of 84% of the respondents were Norwegian. The achieved sample is fairly well-educated as only 1% did not complete secondary school, 5% completed secondary and 28% high school, 38% held a bachelor's, 27% a master's and 1% a doctorate degree. Regarding the activity performed on the day that they were questioned, 81% of the respondents were skiing whereas 17% were snowboarding. The calculated average of the cognitive dimension of recreation specialization (measure adapted from Won et al. (2008)) was 6.23 ($SD=1.70$) on a scale from 1 to 9, indicating a moderate to high level of self-reported skill and knowledge in the sample. As a side note, with this sample the construct specialization measured did not correlate significantly with crowding as suggested by other empirical research in outdoor recreation (Manning, 1999).

The proximity of the ski resort to the respondents' permanent residence ranged from 5 to 195 minutes resulting in an average travelling time of 92 minutes ($SD=26.75$). As expected the ski resort attracted mainly visitors that have had relatively short journey and that were mostly locals residing in the Stavanger region with Stavanger city being located within an approximate 90 minutes-drive away. The majority of the respondents stayed only for one day (72%) with a mean of 1.68 ($SD=1.48$) for the length of stay in days.

Most people (53%) travelled with children (children up to 6 years 18%; Children from 7 to 12 years 35%) their spouse/domestic partner (42%), friends/colleagues (41%), while 22% stated to travel with teenagers, and 17% specified to travel with adult children or other family. In this question, only 2% of all 248 respondents indicated to travel alone. In another question relating to the size of the travel group, 6% stated to travel with 1 person (including themselves). The average size of the travel group resulting from this question is 3.85 persons ($SD=2.71$) ranging from 1 to 25 people. It can be assumed that some of the respondents skipped the "including yourself" specification in the question and meant that they were travelling together with one other person, which would make the 2% who indicated to travel alone in the previous question more credible.

For the vast majority of individuals it was not the first visit to Sirdal Skisenter (91%). On average visitors that revisited the resort had been coming to Sirdal Skisenter for 12.39 years (ranging from 0 to 55 years: 0-5=39%, 6-10=21%, 11-15=13%, 16-20=9%, ≥ 21 years=19%). Furthermore on average respondents visited the resort 9.16 days ($SD=8.42$) per season ranging from 1 to 60 days. This signifies that most visitors to Sirdal Skisenter are probably very loyal in behavioural terms.

4.2. Descriptive Statistics and Distribution

In this section a general description of the experience that the average questioned visitor had will be given, followed by an assessment of the distribution of the data.

4.2.1. Descriptive Statistics

Using the sample data, this section will describe how a visit to Sirdal Skisenter is experienced on average. Table E1 in appendix E depicts the descriptive statistics on the construct as well as on the item level.

With scores around the mid-point, both on the alternative crowding scale and the crowding scale used for the analyses in this study, on average, people felt slightly to moderately crowded at Sirdal Skisenter, with the highest scores for the service facilities, followed by the lifts and the slopes (see table E1 in appendix E). The estimated waiting time at the lifts that people indicated in the questionnaire ranged from 0-45 minutes and the average was 8 minutes. The median is 5 minutes, which means that about 50% indicated that it was 0-5 minutes and the other half indicated that it was more. 88% indicated that it was within 20 minutes, which seems fairly accurate with some overestimations. The average respondent thought that the waiting time was quite acceptable and was highly satisfied with their experience. This is also reflected in their intentions to recommend the resort as well as in their intentions to return which was even a bit higher. As expected, the visitors are very loyal to Sirdal Skisenter. With regard to the emotions experienced during the trip, as expected, most respondents enjoyed it very much, and experienced a high level of interest. To a lesser extent people were surprised and the average experience of negative emotions was very low with anger scoring highest, followed closely by fear.

4.2.2. Distribution

In preparation for the analyses, data was screened and the distribution of the items and constructs was assessed with the help of histograms, normal Q-Q plots and boxplots in addition to the descriptive statistics to get a visual overview. The distributions of the negative emotions with an exception of fear and anger are very peaked and positively skewed. Sadness, guilt, shyness, disgust and contempt were therefore considered unusable since there was insufficient variance in the answers and excluded from subsequent analyses. For the constructs, satisfaction, loyalty, joy, anger, interest, surprise and fear, a few outlier values have been deleted which resulted in acceptable skewness and kurtosis values and fairly normal distributions also depicted in the normal Q-Q plots in all cases except for the negative emotion anger (see Figure F8 in appendix F). The elimination of further outliers for the anger emotion did not improve the normality of the distribution, neither did it help to transform the composite variable by means of logarithm as suggested for this kind of distribution (Tabachnick & Fidell, 1996). Besides a transformation would have complicated the interpretation of the analyses which is why the only remedy remained the elimination of four outlier values on the construct level. The Shapiro-Wilks test and the Kolmogorov-Smirnov test were significant for all constructs which is not unusual with larger sample sizes (Pallant, 2006) and was not considered an issue that could question the appropriateness of the following analyses.

4.3. Validation of Measures

Before the data can be analyzed it is vital to validate the measures that are supposed to be used, to be able to say with some certainty that the items that were used to measure fit the conceptual definitions of the constructs (Neuman, 2011). The common approach as proposed by Churchill (1979) was followed starting with a reliability analysis that assesses the internal

consistency of the measurement. In addition the construct validity of the measurements in terms of face, convergent, discriminant and nomological validity was evaluated. Face validity mainly played a role in the previous selection and development of the measures and during the review and pre-test phase. Nevertheless, it is important to reassess whether an item “makes sense” in case any peculiarities surface in the validation process. Convergent validity was evaluated by means of a principal component analysis (factor analysis) for each of the constructs; discriminant validity and nomological validity were assessed by reviewing the correlations between constructs.

4.3.1. Reliability

After negatively worded items had been reversed reliability analyses were conducted to ensure the internal consistency of the measures. The psychometric properties of the scales are presented in table E1 in appendix E. For constructs with more than two items Cronbach’s alpha indicated acceptable reliability and scores ranging from .83 to .96 (Nunnally, 1978). An exception is the tolerance for crowding construct with a coefficient alpha of .61. This is most likely an issue of face validity. While items T1- T3 refer to rather intuitive responses, T4 involves the valuation of time and money. Since the measurement was used in this form by Machleit et al. (2000) and the deletion of the T4 item did not improve Cronbach’s alpha to a great extent (.65), nor did it better the linearity of the crowding-tolerance for crowding relationship (discussed below under assumptions), no changes were made. For constructs measured with less than three items, inter-item correlations where large ranged from .52 to .83 (Cohen, 1992) which was considered acceptable in terms of internal consistency.

4.3.2. Convergent Validity

For all constructs measured with more than two items, exploratory factor analysis was conducted to demonstrate convergent validity. The assumptions (also see section about assumptions below) of adequate sample size, inter-item correlations above .3, significance of Bartlett's Test of Sphericity ($p < .05$) and a minimum Kaiser-Meyer-Olkin Measure of Sampling Adequacy value of .6 (Pallant, 2006) were not violated with an exemption of the tolerance construct where correlations of the T4 item with the other items ranged from .12 - .26 (see discussion about face validity in the previous paragraph). The percentages for the explained variance, factor loadings and communalities are reported in table E1 in appendix E. The principal component analysis, as expected, revealed one factor for each of the constructs accounting for a fair proportion of the total variance ranging from 47% (tolerance for crowding) to 93% (specialization). Moreover relatively strong factor loadings and a fair amount of variance captured by the factor communalities demonstrate convergent validity. Some peculiarities are evident with three of the constructs: loyalty, tolerance for crowding and crowding.

Looking at the loyalty construct, the factor loading (.49) and communality value (.24) for the last item, intention to revisit, is much lower than for the intention to recommend items. According to Pallant (2006) communality values below .3 could mean that the item does not fit well with the other items. This is not surprising since it represents another dimension of behavioural intentions. It may indicate, that since visitors are very loyal in terms of returning to the resort, dissatisfaction is expressed in lower intentions to recommend the resort to others, but not in return intentions. Nevertheless, it is a measurement that has been validated and used before (Lee et al., 2007) and the psychometric properties are acceptable, which justifies that no changes were made to improve its convergent validity. The T4 item for tolerance for crowding also loads

relatively weakly on the factor (.45) and has a low communality value (.20). Nevertheless it was kept for the same reasons as for the revisit intention item. With regard to the crowding construct the C7 item loads less strong on the factor (.70) and has a relatively low communality value (.49). This can most likely be attributed to the fact that the item was reverse coded. According to Podsakoff et al. (2003) the use of positively and negatively worded items may cause common method bias, meaning variance that can be attributed to the measurement method and not the construct(s) of interest. However the properties were still good and it was decided to sustain the item.

4.3.3. Discriminant Validity

Correlations among observed constructs indicated discriminant validity since all correlations were significantly less than 1 (Burnkrant & Page Jr, 1982) meaning that the constructs diverge (Neuman, 2011). Table 2 presents the correlation matrix with the highest correlations among the negative emotion constructs which were excluded from further analyses. Worth mentioning is the fact that the constructs of crowding and acceptability of wait are highly and significantly correlated ($r = -.79, p < .01$). A principal component analysis including all items of these constructs and reversing the acceptability of wait items, suggests that they could be treated as one construct as they load on one factor. However, face validity and the constitutive definitions suggest that they are actually distinct and theory suggests that they influence each other (e.g. Mattila & Hanks, 2012). This might be another matter of bias caused by common method variance as the measure of acceptability of wait followed the crowding measure in the questionnaire which may have increased inter-construct correlations (Podsakoff et al., 2003). Originally, it was planned to include acceptability of wait as a second independent variable next to perceptions of crowding. Collinearity may weaken the analysis, make it difficult to distinguish

individual effects and solutions are to omit one of the constructs or to create composite scores (Tabachnick & Fidell, 2013). Creating a composite variable of the two constructs was not an option due to their distinct nature in terms of face validity. Acceptability of wait was omitted from the main analysis as Machleit et al. (2000) focus on the crowding-satisfaction relationship. Nevertheless, as an element of exploration in terms of loyalty, a separate mediation analyses as outlined in the hypotheses section was conducted with the acceptability construct as independent variable. Even though the analyses were conducted separately for crowding and acceptability of wait, collinearity implies that there is unique and shared variance and that the coefficients are unstable and must be interpreted with care. A comparison can only result in a conclusion such as one effect is bigger than the other. A common threshold for collinearity is a correlation above .7 (Pallant, 2006; Tabachnick & Fidell, 2013). A violation of the collinearity assumption might also be evident for the relationship between crowding and prior expectations of crowding ($r = .62, p < .01$) which is why the respective moderation analysis should be interpreted with caution.

4.3.4. Nomological Validity

Finally it needed to be assessed whether the constructs behave as expected (as suggested by theory) (Churchill, 1979). A look at the correlation matrix (see table 2) served this purpose. The matter investigated in this research was how the construct crowding relates to other constructs, therefore I demonstrate nomological validity with exactly these correlations. The most decisive relationship may be the one of crowding and the objective measure of visitor density. As expected, a higher visitor density or number is associated with higher perceptions of crowding ($r = .64, p < .01$). Furthermore, as expected, crowding is positively correlated with prior expectations of crowding ($r = .62, p < .01$) and negative emotions (e.g. anger: $r = .37, p < .01$),

and negatively correlated with positive emotions (e.g. joy: $r = -.15, p < .05$), acceptability of wait ($r = -.79, p < .01$), satisfaction ($r = -.30, p < .01$), and loyalty ($r = -.23, p < .01$).

The inclusion of two different crowding measures in the questionnaire allows for comparison between the two in respect to how they behave in relation to other constructs. The correlations concerning the two crowding constructs are depicted in table 2, in columns/rows 3 and 4. It appears that the measures behave in the same way, but that the correlations with the multi-item construct used in this study are slightly stronger in most cases.

4.4. Assumptions

Some assumptions should be met for Ordinary Least Squares (OLS) regression analyses which were used for the mediation and moderation analyses. The assumptions of sample size, normality, linearity, homoscedasticity and independence of residuals are assessed below. With an exemption of the assumption of linearity, these relate to the errors in estimation and whether the assumptions are violated can influence the power and the likelihood of confidence intervals including the true value (Hayes, 2013). The assumption of linearity is important because linear regression is based on a linear association (Pearson's r) (Hayes, 2013).

4.4.1. Sample Size

The sample size for each of the analyses was considered appropriate in terms of desired power and generalizability and the ratio of cases to independent variables is appropriate for all analyses (Hair et al., 2014; Tabachnick & Fidell, 2013).

4.4.2. Normality

Regression analyses are very sensitive to outliers (Pallant, 2006), therefore extreme outliers have been deleted within the assessment of the normality of the distribution (see above).

Some sort of violation of the assumption of normality was detected for the anger construct, the distribution of all other constructs seems to be acceptable (see appendix F for normal Q-Q plots). According to Hayes (2013) the assumption of normality is one of the least important in linear regression analysis and only the most severe violations substantially affect the validity of statistical inferences from a regression analysis.

4.4.3. Collinearity

Problems associated with collinearity and singularity have not been found with an exception of the relationship of prior expectations of crowding and crowding; for acceptability of wait and crowding, a separate analyses were conducted (see section about discriminant validity above).

4.4.4. Linearity, Homoscedasticity, and Independence of Residuals

The assumption of linear relationships and homoscedasticity has been checked for all relevant combinations of constructs by inspecting normal P-P plots and scatterplots (see appendix G). Some violations of the assumptions can be assumed for the for the following relationships: crowding and loyalty (Figure G2), crowding and joy (Figure G3), crowding and anger (Figure G4), acceptability of wait and loyalty (Figure G9), tolerance for crowding and crowding (Figure G10), visitor density and prior expectations (Figure G16) and visitor density and tolerance for crowding (Figure G17). These violations could also be attributed to violations with regard to the normality of the distributions (e.g. anger construct) (Tabachnick & Fidell, 2013). Therefore the interpretation of the respective analyses should be treated with caution. The PROCESS software it is possible to make use of a heteroscedasticity-consistent standard error estimator called HC3 which reduces the effect of heteroscedasticity on inference (Hayes, 2013) and will be used in all

analyses. According to Hayes (2013) non-independence cannot be completely eliminated but minimized by design.

Table 2
Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Prior Expectations	1																		
2. Tolerance	-.07	1																	
3. Alternative Crowding	.55**	-.01	1																
4. Crowding	.62**	.01	.79**	1															
5. Acceptability of Wait	-.57**	.10	-.65**	-.79**	1														
6. Satisfaction	-.28**	.17**	-.21**	-.30**	.44**	1													
7. Loyalty	-.19**	.06	-.20**	-.23**	.30**	.66**	1												
8. Joy	-.20**	.12	-.10	-.15*	.25**	.52**	.48**	1											
9. Anger	.34**	.04	.29**	.37**	-.42**	-.36**	-.41**	-.36**	1										
10. Surprise	.17**	.06	.17**	.16*	-.16*	-.02	-.00	-.01	.19**	1									
11. Interest	-.09	.01	-.03	-.10	.21**	.29**	.24**	.45**	-.25**	-.08	1								
12. Fear	.13*	-.00	.14*	.14*	-.11	-.04	-.03	-.10	.25**	.37**	-.10	1							
13. Sadness	.21**	.03	.15*	.16*	-.20**	-.25**	-.38**	-.37**	.64**	.28**	-.25**	.29**	1						
14. Guilt	.24**	-.01	.18**	.22**	-.22**	-.24**	-.35**	-.36**	.52**	.31**	-.17**	.32**	.66**	1					
15. Shyness	.25**	.05	.17**	.20**	-.22**	-.11	-.27**	-.23**	.43**	.38**	-.19**	.52**	.65**	.77**	1				
16. Contempt	.18**	.07	.14*	.19**	-.23**	-.14*	-.29**	-.25**	.47**	.40**	-.23**	.46**	.68**	.75**	.82**	1			
17. Disgust	.17**	.01	.16*	.15*	-.20**	-.18**	-.32**	-.29**	.46**	.29**	-.17**	.38**	.58**	.72**	.71**	.71**	1		
18. Visitor Density	.41**	.01	.58**	.64**	-.61**	-.23**	-.07	-.12	.27**	.02	-.06	.03	.02	.05	-.03	-.01	-.02	1	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

4.5. Results

This section presents the analyses for this study including the mediation and moderation analyses conducted with the PROCESS macro for SPSS. The presentation of the results is divided into three main sections referring to the hypotheses to be tested: correlation analysis, mediation analyses, and moderation analyses. For the main analyses the overall model (see figure 1) was divided into four parts. Model A (see figure 2) refers to investigations concerning the crowding-satisfaction relationship, model B (see figure 3) investigates the crowding-loyalty relationship mediated by satisfaction and model C (see figure 4) refers to the additional mediation analysis with acceptability of wait as an independent, satisfaction as mediator and loyalty as outcome variable. Model D (see figure 5) concerns the analysis for the interaction effects of prior expectations of crowding and tolerance for crowding on the crowding-satisfaction relationship. An additional moderation analysis tests the same interaction effects on the visitor density-crowding relationship (see figure 6). For the mediation and moderation analyses a 95% bias-corrected bootstrap confidence interval based on 10,000 bootstrap samples as well as the heteroscedasticity-consistent standard error estimator HC3 were used, and as Hayes (2013) suggests unstandardized coefficients are reported. The main effects of crowding on loyalty, acceptability of wait on loyalty and density on crowding were calculated with linear regression analyses in SPSS.

4.5.1. Correlation Analyses

In order to be able to directly compare the results for model A with Machleit et al. (2000), to test hypothesis 1, and to test which constructs fit the model before employing linear regression analyses, correlations between the constructs were assessed (see table 2). Crowding was correlated with the positive emotion dimension and, as expected, a negative, relative small and

significant relationship was found for joy ($r = -.15, p < .05$) but for the emotional type interest the correlation was not significant ($r = -.10$) which is why it was excluded from further analyses. For the negative emotion dimension, significant positive correlations were found between crowding and all negative emotion types: anger ($r = .37, p < .01$), fear ($r = .14, p < .05$), sadness ($r = .16, p < .05$), guilt ($r = .22, p < .01$), shyness ($r = .20, p < .01$), contempt ($r = .19, p < .01$) and disgust ($r = .15, p < .05$). Thus anger has as predicted the strongest correlation with crowding with a medium-sized coefficient but contempt and disgust do not belong among the set of highest correlations. In fact, all other coefficients for negative emotions mark rather weak relationships (Cohen, 1992). Note that the negative emotions except for fear and anger were not included in further analyses due to the violation of the assumption of normality and a lack of variance (see above). Crowding and surprise were weakly, but positively and significantly correlated ($r = .16, p < .05$).

Next the emotion types were correlated with satisfaction. All negative emotions except for fear and shyness were significantly correlated with satisfaction. Since there were no significant correlations between satisfaction and the emotion constructs surprise and fear, these types of emotions were also excluded from further analyses. The remaining emotions to be tested in the mediation analysis were joy ($r = .52, p < .01$) and anger ($r = -.36, p < .01$).

Finally, as illustrated in table 2, the constructs acceptability of wait and especially loyalty seem to correlate relatively strongly (stronger than crowding) with the emotion types. The strongest correlations can be found for joy and anger. It is possible that these emotions are directly and indirectly related to the loyalty construct.

4.5.2. Mediation Analyses

As explained above three mediation analyses will be presented in this section: Model A, Model B, and Model C.

Model A. For Model A (see figure 2 below) the two mediator constructs joy and anger were included in a parallel multiple mediation analysis. The results are presented in table 3. Crowding directly and indirectly influences satisfaction through its effect on joy and anger. Visitors that felt more crowded experienced less joy ($a_1 = -.06$) and more anger ($a_2 = .14$) which resulted in lower levels of satisfaction ($b_1 = 1.21$; $b_2 = -.34$). The 95% bias-corrected bootstrap confidence intervals for the specific indirect effects through joy ($a_1b_1 = -.07$) and anger ($a_2b_2 = -.05$) based on 10,000 bootstrap samples were entirely below zero (-.15 to -.01 for joy; -.10 to -.003 for anger) as was the bootstrap for the total indirect effect ($a_1b_1 + a_2b_2 = -.12$) that was ranging from -.22 to -.04. A comparison between the specific indirect effects showed that the effects were not significantly different as the 95% bias-corrected bootstrap confidence interval straddled zero (-.04 to .12) while the point estimate for the difference was .03. There was also evidence for a direct effect ($c' = -.21$, $p < .01$) with a 95% bootstrap confidence interval ranging from -.35 to -.07. The total effect of crowding on satisfaction ($c = -.33$) was significant at the .001 level. The same conclusions can be derived from simple single mediation analyses which rules out problems associated with including both positive (joy) and negative (anger) emotion laden mediators in one analysis but since they are not really semantic differential concepts this was not considered a problem anyways. See appendix H for tables presenting the unstandardized coefficients of simple mediation analyses for the two emotions. This “piecemeal” approach, as Hayes (2013) calls it, describing different components of a larger model, is quite useful in order to understand the data.

While Machleit et al. (2000) report to have found partial mediation, Hayes (2013) argue for the abandonment of the partial and full mediation concepts due to their dependence on sample size and lack of theoretical meaning, and hence I simply conclude that I have found indirect effects through both proposed mediator constructs. Nevertheless, for reasons of comparison, on the basis of the findings presented above, partial mediation would also be the more traditional conclusion, in accordance with Machleit et al. (2000).

Figure 2. Model A

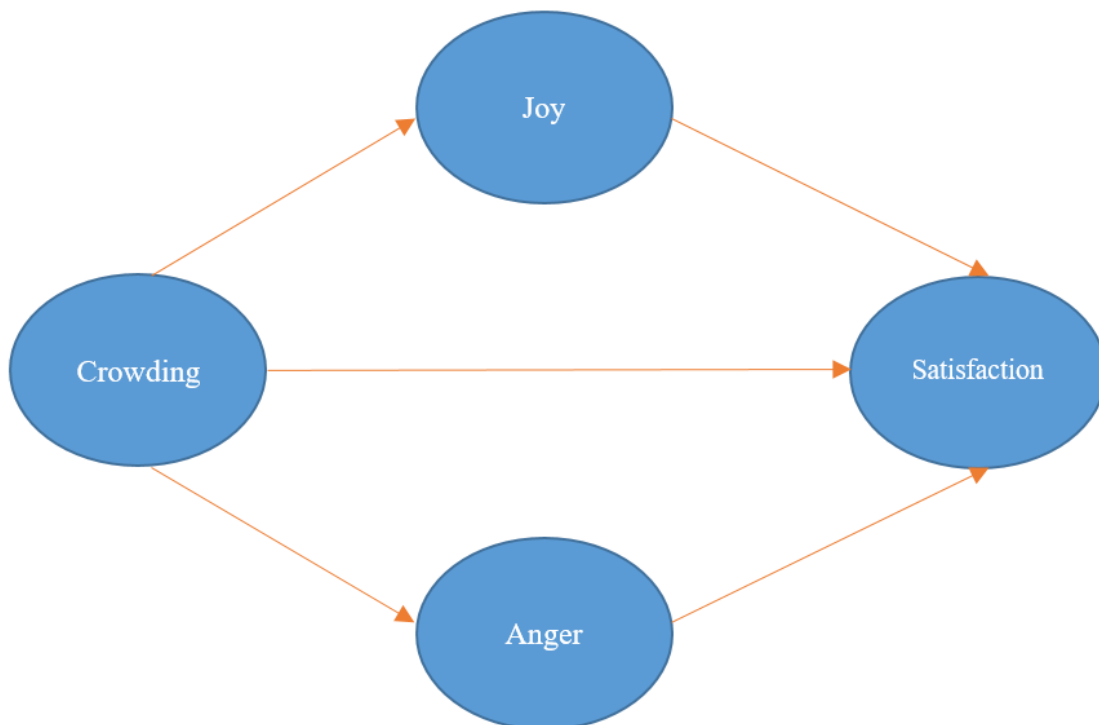


Table 3

Mediation Model A

Antecedent	Consequent											
	Joy			Anger			Satisfaction					
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>			
Crowding	a_1	-.06	.03	< .05	a_2	.14	.03	< .001	c'	-.21	.07	< .01
Joy		---	---	---		---	---	---	b_1	1.21	.18	< .001
Anger		---	---	---		---	---	---	b_2	-.34	.17	< .05
Constant	i_{M1}	4.37	.11	< .001	i_{M2}	.91	.09	< .001	i_Y	4.20	.90	< .001
		$R^2 = .02$				$R^2 = .11$				$R^2 = .32$		
		$F(1,236) = 4.94,$				$F(1,236) = 27.17,$				$F(3,234) = 34.40,$		
		$p < .05$				$p < .001$				$p < .001$		

^a $n = 238$

Model B. Model B (see figure 3 below) was analyzed with a simple mediation analysis, but the analysis procedure remained the same. Crowding indirectly influences loyalty through its effect on satisfaction and the main effect explains about 5% of the variance in loyalty. Table 4 shows the unstandardized coefficients. People that felt less crowded were more satisfied with their experience ($a = -.35$) and more satisfied people indicated higher levels of intentions to recommend and revisit ($b = .25$). A 95% bias-corrected bootstrap confidence interval for the indirect effect ($ab = -.09$) based on 10,000 bootstrap samples did not cross zero (-.13 to -.05) which means that the effect was statistically different from zero and that mediation occurred (Hayes, 2013). The normal theory-based Sobel test results in the same inference ($Z = -4.52, p < .001$) although the bootstrap is the recommended and more trustworthy test considering that it respects the non-normality of distribution. The size of the indirect effect was about 22% ($\kappa^2 = .22$) of its maximum possible value (Hayes, 2013). There was no evidence for a direct effect ($c' = .02, p = .73$) with a 95% bootstrap confidence interval ranging from -.06 to .04. The total effect of crowding on loyalty ($c = .03$) was significant at the .01 level.

Figure 3. Model B

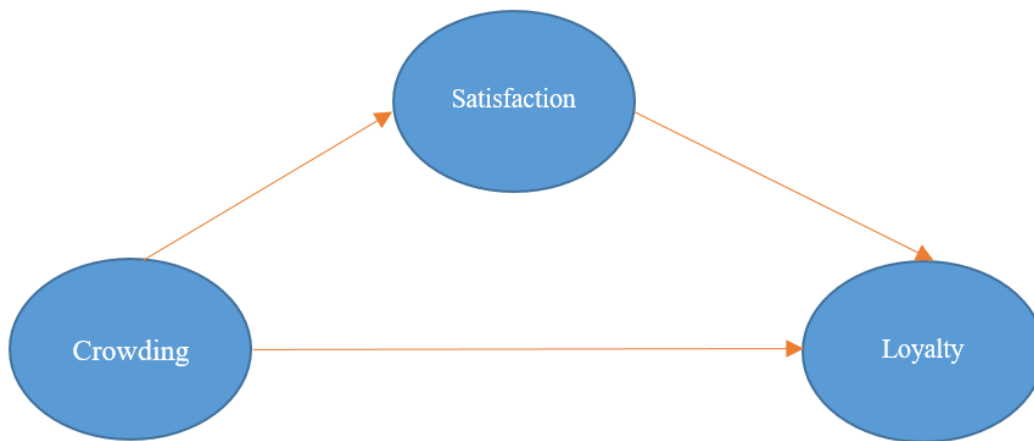


Table 4
Mediation Model B

Antecedent	Consequent							
	Satisfaction			Loyalty				
	Coeff.	SE	p	Coeff.	SE	p		
Crowding	<i>a</i>	-.35	.07	< .001	<i>c'</i>	-.01	.02	.73
Satisfaction	---	---	---	<i>b</i>	.25	.02	< .001	
Constant	<i>i</i> ₁	9.21	.28	< .001	<i>i</i> ₂	2.22	.22	< .001
		<i>R</i> ² = .10 <i>F</i> (1,240) = 24.09, <i>p</i> < .001				<i>R</i> ² = .43 <i>F</i> (2,239) = 73.33, <i>p</i> < .001		

^a*n* = 242

Model C. Alternative Model C (see figure 4 below) was analyzed in exactly the same way as model 2 and not surprisingly, acceptability of wait indirectly influences loyalty through satisfaction (see table 5) while acceptability of wait explains about 9% of the variance in loyalty which is also a rather small effect (Cohen, 1992). The respondents that evaluated the waiting time as acceptable were more satisfied (*a* = .45) and higher satisfaction was associated with a higher level of loyalty (*b* = .26). The 95% bias-corrected bootstrap interval for the indirect effect (*ab* = .12) was entirely above zero (.08 to .15), again the Sobel test agreed (*Z* = 6.22, *p* < .001) and the

size of the effect was about 30% ($\kappa^2 = .30$) of its maximum value. No significant direct effect was detected ($c' = .00, p = .99$) with a 95% bootstrap confidence interval ranging from $-.05$ to $.05$ and the total effect of acceptability of wait on loyalty ($c = .03$) was significant at the $.001$ level.

As crowding and acceptability of wait are both measured on a 7-point scale a comparison between the unstandardized coefficients is possible in terms of explanatory power of the independent variable. It turns out that the total variance explained for the models is indifferent as both of the models explain about 43% of the variance in loyalty (see tables 4 and 5).

Nevertheless, the coefficient for acceptability of wait (.45) with satisfaction as the dependent construct is a bit stronger than the coefficient for crowding (.35) and more of the variance in satisfaction is explained by acceptability of wait (20%) than by crowding (10%). According to Cohen (1992) the main effect of crowding on satisfaction can be interpreted as small, while the effect of acceptability of wait on satisfaction is of medium size.

Figure 4. Model C

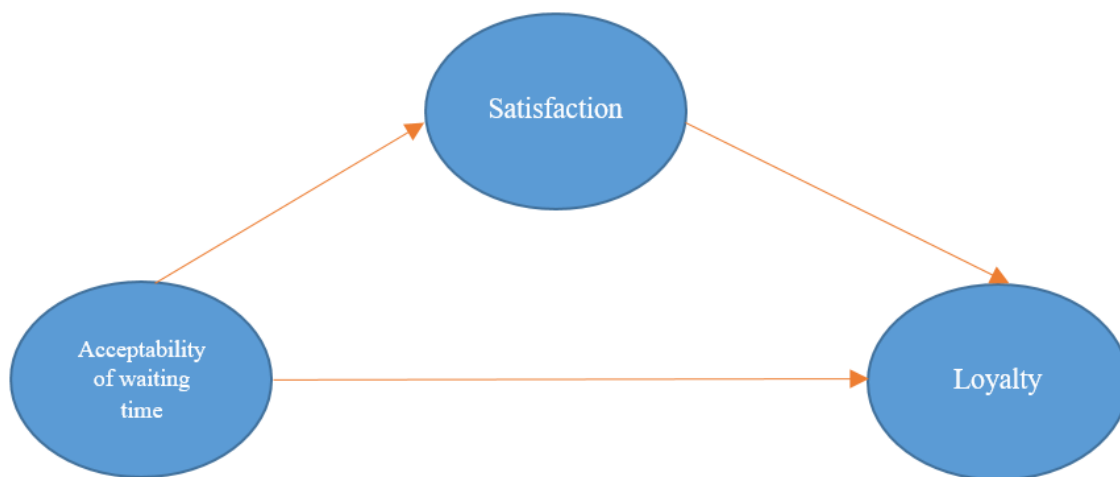


Table 5

Alternative Mediation Model C

Antecedent	Consequent							
	Satisfaction			Loyalty				
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>		
Acceptability of Wait	<i>a</i>	.45	.06	< .001	<i>c'</i>	.00	.02	.99
Satisfaction		---	---	---	<i>b</i>	.26	.02	< .001
Constant	<i>i</i> ₁	5.59	.33	< .001	<i>i</i> ₂	2.17	.19	< .001
$R^2 = .20$				$R^2 = .43$				
$F(1,240) = 54.17, p < .001$				$F(2,239) = 75.42, p < .001$				

^a*n* = 242**4.5.3. Moderation Analyses**

This section comprises two moderation analyses, one referring to part of the main model model D (see figure 5 below) and one additional analysis with the objective measure of visitor density as independent variable, crowding as dependent variable and again, prior expectations and tolerance for crowding as moderators (see figure 6 below). To conduct a moderation analysis with two moderators on a single direct relationship, PROCESS offers two options: first of all both moderator variables can be entered and the interactions effects and can be analysed simultaneously as depicted in figure 5 and 6; a second option is to conduct two simple moderation analyses for each moderator separately. While being aware that as the number of post-hoc analyses increases, so does the probability that significant results will be found if the level of significance is not adjusted (Tabachnick & Fidell, 2013), to be able to rule out to some extent that results are dependent on different test procedures, both of the options were used for the two moderation models and results were compared as suggested by (Hayes, 2013). Before starting with the moderation analyses, as hypothesized for the moderator construct tolerance for crowding, people did vary in their tolerance as scores covered the entire range from 1 to 7 with a

mean of 3.52, and a standard deviation of 1.13. Moreover tolerance for crowding was weakly but significantly correlated with satisfaction ($r = .17, p < .01$) explaining about 3% of the variance in satisfaction, but not with crowding ($r = .01$). The variance in prior expectations was also good with scores from 1 to 7, and a mean of 3.62 ($SD = 1.60$). Around 40% of the respondents had quite accurate expectations and experienced about as many people as expected opting for the median and mode score of 4. While the following analyses focus on prior expectations as a moderator, significant correlations exist between prior expectations and crowding ($r = .62, p < .01$) satisfaction ($r = -.28, p < .01$) and loyalty ($r = -.19, p < .01$). In fact prior expectations explained about 38% of the variance in crowding which is a large effect and about 8% of the variance in satisfaction which is a rather small effect size. Meaning that if people see more people than expected, they perceive a situation to be more crowded, are less satisfied with the experience and less loyal in terms of behavioural intentions. Whether the crowding-satisfaction relationship depends on the two potential moderators will be answered in the following paragraphs.

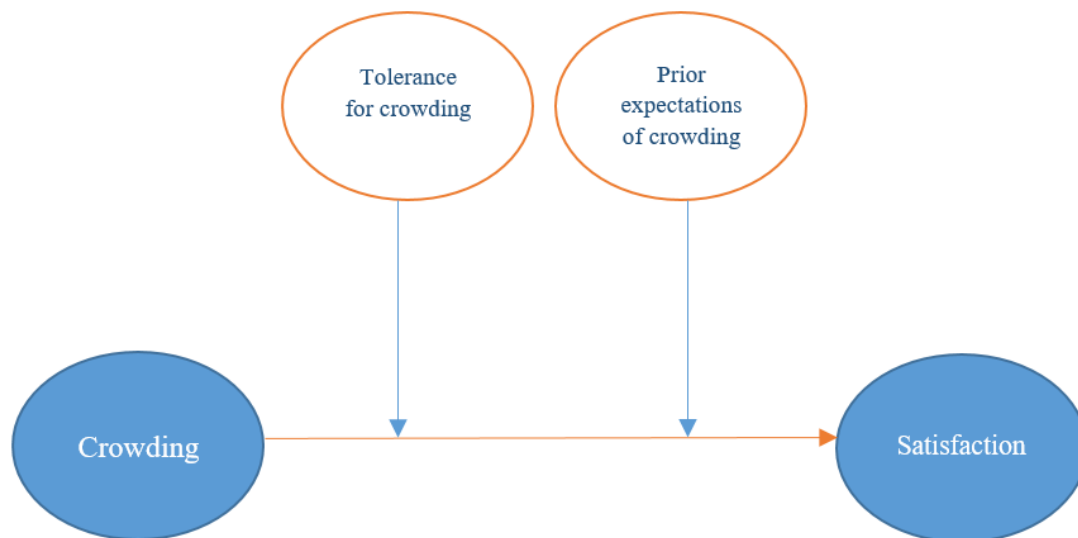
Model D. When entering both moderator variables into the analysis for model D, both, prior expectations of crowding and tolerance for crowding did not influence the effect of crowding on satisfaction (for product of crowding and prior expectations $b = -.05, t(237) = -1.29, p = .20$; for product of crowding and tolerance $b = .01, t(237) = .10, p = .92$).

The second step was to confirm this result and rule out possible effects connected to entering both of the moderators simultaneously (e.g. problems with multicollinearity with regard to the prior expectations and crowding constructs which would result in unstable coefficients) by conducting separate simple moderation analyses. The results of the separate moderation analyses were consistent with the previous findings above (for product of crowding and prior expectations $b_3 = -.06, t(239) = -1.65, p = .10$; for product of crowding and tolerance $b_3 = .02, t(239) = .33, p = .74$). Surprisingly, the crowding-satisfaction relationship does not seem to be dependent on the

two moderators demonstrated by the insignificance of the interaction effects. The results for the simple moderation analyses are summarized in table I1 and I2 in appendix I.

The product variables crowding, prior expectations and tolerance were mean centered to make the coefficients meaningful to interpret as suggested by Hayes (2013). Note that according to Hayes (2013) mean centering is not necessary to reduce multicollinearity issues and does not affect significance levels.

Figure 5. Model D



Additional Analysis. An additional moderation analysis was performed investigating the visitor density-crowding relationship. An initial linear regression analysis conducted with SPSS indicated that density explained about 41% of the variance in crowding which is a rather large effect on its own (Cohen, 1992). Furthermore, the relationship between density and satisfaction seems to be weak but fairly linear (see table 2).

Employing the same method as above, it was tested whether the effects of visitor density on crowding are moderated by prior expectations of crowding and tolerance for crowding (see

figure 6). With regard to the existing theory that suggests that both constructs affect perceptions of crowding (Manning, 1999) and as crowding is a negative evaluation in itself, it seems interesting to test the moderating effects of prior expectations of crowding and tolerance for crowding with crowding as the dependent variable.

As in the previous analysis, first both moderators were analyzed simultaneously and indicated very weak positive interaction effects for prior expectations of crowding and crowding but no significant interaction effects for tolerance of crowding and crowding (for product of visitor density and prior expectations $b = .0001$, $t(224) = 2.21$, $p < .05$; for product of visitor density and tolerance $b = -.0001$, $t(224) = -1.33$, $p = .18$).

To probe these results and possible impacts of correlations between the independent variables (for example, related to the size of correlations between the moderators which was almost not existent ($r = -.07$)), again simple moderation analyses were conducted and the results are also reported in tables J1 and J2 in appendix J. Surprisingly the results were slightly different signalling that the effects are partly dependent on the test procedure.

Prior expectations. Starting with prior expectations as moderator variable, the effect of the product of visitor density and prior expectations was very small as it accounted for only about 1% of the variance in crowding (Cohen, 1992), positive and significant ($b_3 = .0002$, $t(226) = 2.70$, $p < .01$) with a 95% confidence interval based on 10,000 bootstrap samples entirely above zero and ranging from .0000 to .0003. With regard to the positive effect that has been found, this means that the more people than expected the sample experienced, the more crowded visitors perceived different levels of visitor density to be. Prior expectations of crowding were measured on a scale from 1 to 7; 1 was labelled “fewer people than were expected”, 4 was marked as “about as many people as expected” and 7 was marked as “more people than were expected”.

The conditional effect of visitor density on crowding at one standard deviation below the mean of prior expectations (at 2.00: $b = .0007$, $t(226) = 4.81$, $p < .001$) is weaker than at the mean (at 3.57: $b = .0010$, $t(226) = 8.68$, $p < .001$) and one standard deviation above the mean (at 5.15: $b = .0012$, $t(226) = 8.77$, $p < .001$) suggesting that the strength of the effect is increasing with the experienced level of crowding in relation to their expectations. The Johnson-Neyman technique does not indicate statistical significance transition points suggesting that the effect is significant at all values of prior expectations. The Johnson-Neyman technique should be the preferred technique to probe the interaction as it does not pick the points arbitrarily and indicates more accurately where the region of significance for continuous moderators lies (Hayes, 2013). The moderation of prior expectations of crowding is depicted in figure 7. Note that the visualization is based on values 1 standard deviation above/below the mean.

Tolerance for crowding. The simple analysis for the moderator tolerance for crowding indicated that the effect of visitor density on crowding does depend on how tolerant people are with regard to crowding to a marginal extent. The effect of the product of visitor density and tolerance for crowding was very weak as it accounted for only about 2% of the variance in crowding, and negative but significant ($b_3 = -.0003$, $t(226) = -3.09$, $p < .01$) with a 95% confidence interval based on 10,000 bootstrap samples entirely below zero and ranging from $-.0005$ to $-.0001$. The negative effect of the interaction indicates that the more tolerance for crowding people signaled to have, the more negative the effect of visitor density on crowding becomes, meaning that the less crowded visitors evaluated certain levels of visitor density to be.

The region of significance as identified by the Johnson-Neyman technique for the interaction of tolerance for crowding and visitor density was for values of tolerance for crowding (measured on a 7-point scale) ≤ 6.30 ($b = .46$, $t(206) = 1.97$, $p = .05$) meaning that tolerance for

crowding did not play an important role in determining people's perception of crowding for people that had a very high tolerance for crowding. However, 99.57 % of the cases were below this value indicating that there might not have been enough cases that indicated to be very highly tolerant to find significant moderating effects. At the value 1 of tolerance for crowding the effect size was the largest ($b = .0022$, $t(226) = 8.19$, $p < .001$), however the t-value seems to be largest around 3,40 ($b = .0015$, $t(226) = 14.79$, $p < .001$). This seems to be a point from where the t value decreases at lower and higher values of tolerance for crowding (find the output from PROCESS for the Johnson-Neyman technique in appendix K). Figure 8 shows a visualization of the interaction of tolerance for crowding and visitor density on crowding based on values one standard deviation above/below the mean. It seems that when a medium level of visitors is reached (at about 1,500 visitors) people who indicated to have a low tolerance for crowding perceived the visitor density level more crowded than visitors who indicated to have a medium or medium to high level of tolerance for crowding. At low visitor numbers it seems that visitors who indicated a low tolerance for crowding seemed to perceive the visitor density as less crowded than visitors with a higher tolerance for crowding. Nevertheless, these differences seem to be very small and it is not known whether they are significant.

Summarizing the results, there are some indications for moderations of both moderator variables but the changes in R^2 are very small so they can be only marginally significant considering the rather large sample size. Furthermore the effect of tolerance on the visitor density-crowding relationship is partly depending on the test procedure as demonstrated here.

Figure 6. Additional Moderation Analysis

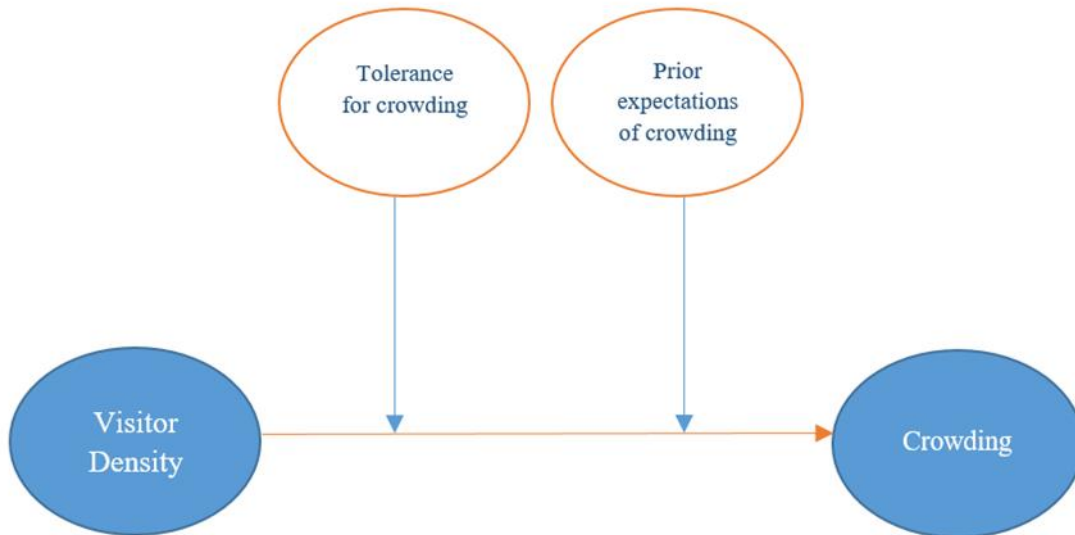


Figure 7. Visualization Moderator Prior Expectations of Crowding

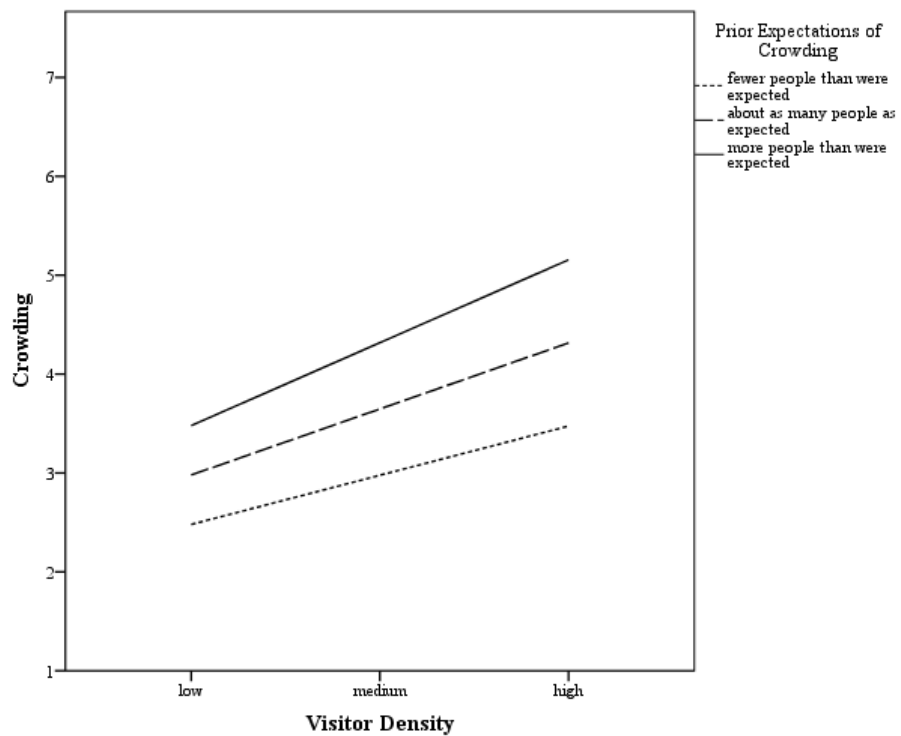
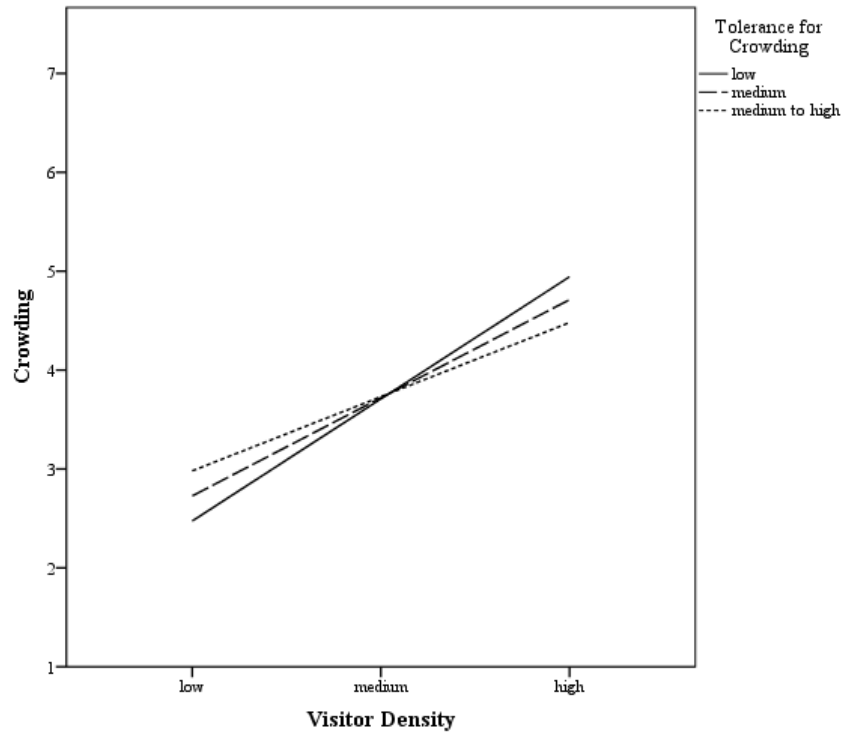


Figure 8. Visualization Moderator Tolerance for Crowding



5. Discussion

The research questions for this study were “when and how does crowding influence experience evaluations?” These cannot ultimately not be answered fully and unambiguously but the study contributes to a better understanding of the relationships between density, crowding and loyalty.

A set of hypotheses focused the research on the correlations between crowding and different types of emotions, on the questions whether emotions mediate the crowding satisfaction relationship, whether the crowding-loyalty relationship is mediated by satisfaction and whether prior expectations of crowding and tolerance for crowding moderate the crowding-satisfaction relationship. Furthermore the acceptability of wait-loyalty relationship was explored. Some additional analyses provided further valuable information framing the results.

The results found in this study partly differ from the hypothesized findings. This chapter starts with a review and discussion of the findings in the light of existing theory, Machleit et al. (2000) and other relevant previous empirical findings, and is divided into three sections: crowding and emotions, mediation analyses, and moderation analyses.

Following the discussion three subchapters elaborate respectively on the overall validity and generalizability of the findings considering the study's limitations, possible theoretical, methodological and management implications, and future areas of research.

5.1. Crowding and Emotions

Following the order of the hypotheses, the relationships between crowding and the different emotion types were assessed. Anger, disgust, contempt, fear, shyness, guilt, sadness and surprise were positively associated with perceptions of crowding, while joy and interest were negatively correlated with crowding. This supports hypotheses H1a and b. However, hypothesis H1c is not entirely supported as the highest correlations with crowding were not observed for the hostility triad of emotions as a whole. Disgust and contempt were not among the highest correlations. In fact and surprisingly, guilt and shyness correlated more strongly with crowding. Nevertheless, the anger construct did have the strongest correlations with crowding. Surprise was not important in determining satisfaction, similar, to Machleit et al. (2000) who did not find a significant correlation with crowding in study two, and Bonnefoy-Claudet and Ghantous (2013) who did not find the emotion type surprise to be important in the ski resort context.

5.1.1. Positive Emotions

Comparing these results to studies one and two by Machleit et al. (2000), contrary to the latter studies and findings by Hwang et al. (2012), in this study a negative and significant effect between (human) crowding and joy could be observed in compliance with Hui and Bateson

(1991) and Tseng et al. (2009), whereas the relationship of crowding and interest was also not significant, consistent with Machleit et al. (2000).

Maybe this can be attributed to the notion that the experience was set in a recreation environment of hedonic nature where the experience of joy is supposedly more essential than during a shopping experience. This would support findings of Eroglu et al. (2005) and Noone and Mattila (2009) whose findings indicated that the difference between hedonic/utilitarian values or goals does matter in determining the strength of the crowding-satisfaction relationship. Nevertheless, shopping is not necessarily of mere utilitarian nature but can also involve hedonic motivations.

The strong correlations for joy also conform with Faullant et al. (2011) who propose that joy is one of the primary emotions felt during mountaineering experiences standing in close relation to satisfaction ratings.

5.1.2. Negative Emotions

With regard to the negative emotions, while Machleit et al. (2000) found significant correlations between crowding and all negative emotions in study one, and significant correlations with anger and fear in study two, in this study crowding also correlates significantly with all negative emotion type constructs. This is also conforming with Steg et al. (2012) who proposed that crowding is mirrored in negative emotions, tension, anxiety and nervousness and Mattila and Hanks (2012) who found feelings of frustration, anger, irritation, annoyance and anxiety to be related to crowded environments.

Hostility triad. As to why the disgust and contempt constructs did not covary as strongly with perceptions of crowding, it is easy to assume that these hostility triad emotion types seem

quite strong for a supposedly pleasant and enjoyable experience such as skiing and anger has been described as the most subtle of the three (Machleit et al., 2000). Furthermore cognitive coping mechanisms may prevent extremely deep and negative feelings from spoiling the overall goal of an enjoyable recreational experience, also considering that some sort of investment is involved in the skiing activity (Manning, 1999).

Shyness, guilt, sadness and fear. The remaining emotions (shyness, guilt, sadness and fear) are relatively strongly correlated with crowding in comparison with Machleit et al. (2000) and also correlate more strongly than expected in contrast to the negative emotions.

These emotions seem to be more “individual-oriented” (Machleit et al., 2000) and the result may be attributed to the notion that, in a ski resort setting, coping behaviourally with crowding also depends on the individual performance and skills as a skier or snowboarder in accordance with the classification of adventure tourism (Buckley, 2006), and supposedly to a greater extent than in a retail context. Visitors have to watch out for each other on the slopes as well as when queuing and take care not to block the passages for others and not to slow down processes especially when taking a lift.

Depending on the individual experience and confidence-level regarding the activity, possible challenges such as taking the lift or skiing in a crowded environment may increase attention to the self, function as barriers to positive emotion-evoking exploration, reduce interest and enjoyment and result in feelings of shyness or shame (Izard, 1977; Machleit et al., 2000). As feelings of guilt are very closely associated with feelings of shyness and shame, and may occur when people get sanctioned for some sort of misconduct or violations of social conventions (Izard, 1977; Machleit et al., 2000) these feelings may also be attributed to situations in crowded spaces where people are blocking the way for others, do not act quickly enough, cut the line or

act impolitely (Machleit et al., 2000). Furthermore as outlined previously these feelings may interact with feelings of anger in frustrating contexts (Izard, 1977).

The correlation with sadness may be stronger than in a retail context for the same reason. Attention to self and the individual performance may be increased and resulting in higher risk of failure (Izard, 1977; Machleit et al., 2000). Furthermore, crowding may block goals which can also typically increase feelings of sadness (Brehm, 1966; as cited in Machleit et al., 2000).

Finally, an obvious explanation for the stronger experience of the fear emotion, may be that the activity (skiing or snowboarding) is simply more threatening than to go shopping and evidently crowding enforces these feelings of fear (Izard, 1977; Machleit et al., 2000). This is actually not too surprising considering that fear has been said to be a primary emotion in mountaineering experiences (Faullant et al., 2011) and that an element of risk defines adventure tourism (Buckley, 2006).

The individual-oriented negative emotions may also be felt more strongly in other sportive recreation contexts such as hiking in crowded environments, or in any sportive setting where reaching goals may partly depend on others' actions, performance and pace.

Pre-test participants anticipated that most of the negative emotions would not be very relevant to the skiing context, nevertheless they were kept with regard to the comparability with Machleit et al. (2000) and for reasons of exploration.

Out of the negative emotions all except for fear and shyness were significantly correlated with satisfaction. It could be speculated that these individual-oriented emotions were not taken into account when evaluating the overall experience since they did not seemingly have as much to do with the experience elements that could more objectively attributed to the service provider

but more with subjective emotions felt during the experience. This is somewhat contrary to Faillant et al. (2011) who found that feelings of fear are related to experience evaluations and suggested that increasing security information could decrease the effect on satisfaction ratings.

Another very reasonable explanation for the insignificant relationship with satisfaction may be that there was just a lack of variance in these emotion types as demonstrated previously in this paper.

5.2. Mediation Analyses

The mediation analyses were conducted to find out how crowding influences experience evaluations. The correlation analysis demonstrated that higher levels of crowding result in lower levels of satisfaction, conforming with Machleit et al. (2000) and other previous research (e.g. Eroglu et al., 2005; Noone & Mattila, 2009) and loyalty confirming hypothesis H2a and supporting findings of similar previous studies (Alexandris et al., 2006; Hui & Bateson, 1991; Hwang et al., 2012; Noone & Mattila, 2009; Wakefield & Blodgett, 1994). Due to the lack of variance in many of the emotion types, and partly due to the lack of correlation with either crowding or satisfaction, only two emotion types were kept for the mediation analysis: anger and joy.

Based on correlation analyses, the relationship between crowding and satisfaction was of medium size ($r = -.30$) and slightly stronger than in the retail setting, where the correlation coefficient were small in both field studies ($r = -.16$ in study one; $r = -.22$) (Machleit et al., 2000).

Nevertheless there is a number of factors that could have produced these differences, including the different measure of satisfaction. Machleit et al. (2000) measured satisfaction with behavioural intentions, which may have weakened the relationship, as satisfaction mediates the crowding-loyalty relationship.

The crowding-satisfaction relationship was (partially) mediated by anger and joy and direct effects of crowding on satisfaction remained significant consistent with study one by Machleit et al. (2000). Study two found full mediation through emotions (Machleit et al., 2000). Therefore, hypothesis H2b can be supported in terms of these emotions mediating the relationship, but not in terms of all emotions mediating the relationship. Similar results were found by Eroglu et al. (2005).

Hypotheses H2c, H3a, b and c, are supported as both, higher levels of crowding and lower levels of acceptability of wait correlate negatively with satisfaction and loyalty, while satisfaction acts as a mediator between the two independent variables and loyalty behavioural intentions (analysed in two separate analyses due to an issue of collinearity). This means that the crowding-loyalty relationship is indicated as an indirect one that also potentially depends on moderators influencing the crowding-satisfaction relationship. With regard to the acceptability of wait-loyalty relationship the result confirms previous studies in terms of seeing subjective evaluations of waiting time to be antecedent the satisfaction construct (Bielen & Demoulin, 2007; Hui & Tse, 1996).

On the basis of the separate analyses conducted here, it may be argued that acceptability of wait, in situations where waiting times are resulting from higher visitor density, may be a slightly better predictor of satisfaction levels (explaining about 20% of the variance in satisfaction) than perceptions of crowding (explaining about 10% of the variance in satisfaction). Waiting time may be, as argued, more tangible than density (Graefe & Vaske, 1987) which may make it a more immediate predictor of satisfaction as it is more directly associated with the service performance. Both mediation models, however explain about 43% of the variance in

loyalty. The issue of multicollinearity nevertheless still makes it difficult to distinguish the individual effects since the constructs still share variance.

As a side note, and based on the strong correlations between emotions and the loyalty construct it could be possible that besides satisfaction, the emotion types also mediate the acceptability of wait/crowding-loyalty relationship. However this needs further investigation.

5.3. Moderation Analyses

The moderation analyses were supposed to contribute to an understanding of when or under which conditions crowding influences experience evaluations. Even though people did vary in their tolerance for crowding in support of hypothesis H5a and as also verified by Machleit et al. (2000), neither did the relationship of crowding and satisfaction seem to depend on prior expectations of crowding nor on tolerance for crowding rejecting hypotheses H4 and H5b.

There was also a good variance in prior expectations of crowding despite the fact that most visitors had previous experience with the resort making it appropriate to conduct moderation analyses with this construct. Both moderators were however weakly and significantly correlated to satisfaction.

It is worth to mention that the interaction of prior expectations of crowding and crowding was not significant with the sample in this study, however it could be speculated that with a little bigger sample size it would have become significant as it was not very far from the 95% level of significance in the simple moderation analysis ($b_3 = -.06$, $t(239) = -1.65$, $p = .10$). Nevertheless, the significance level should not be the only criteria to be taken into account. It is important to consider the practical importance with the effect size, the quality of research design, and the validity of the measures (Tabachnick & Fidell, 2013) and the effect size for one is very marginal

indicating and supporting the finding that prior expectations did not play a role in determining the crowding-satisfaction relationship.

Machleit et al. (2000) did find moderating effects on the crowding-satisfaction relationship for both constructs even though in study two they only found moderation by tolerance for crowding.

In addition to the different context, the method of analysis may also partly account for the different findings. Therefore, to improve the appropriateness of comparison with Machleit et al. (2000), the continuous moderator prior expectations of crowding was categorized into three groups and a simple analysis of variance was conducted with the satisfaction construct as dependent variable. Employing the alternative procedure for prior expectations of crowding, consistent with study one by Machleit et al. (2000) satisfaction levels did not differ significantly for people that experienced about as many people as expected or less people than expected. However, satisfaction levels were significantly lower when visitors experienced more people than expected. Note that no adjustments were made for the post-hoc comparison and therefore it may be more likely that differences are found (Tabachnick & Fidell, 2013).

Even though the analysis of variance found significant differences for the situation when people experienced more people than expected, as outlined previously the moderation analyses in this study using continuous moderators are considered superior to an analysis of variance and should be trusted more. A taste of doubt remains with regard to the collinearity of crowding and prior expectations of crowding weakening the power of the analysis. However the sample size was reasonably large and should be sufficient to show even small effects (Tabachnick & Fidell, 2013).

For tolerance for crowding, Machleit et al. (2000, p. 36) divided the continuous construct into two groups (high and low) and report that only for people with low tolerance for crowding, crowding is negatively correlated with satisfaction and that “the z transformations show a significant moderating effect for human crowding”. Considering the clear results of this study it was not regarded as a sensible contribution to conduct the analysis with the same procedure that was used by Machleit et al. (2000).

5.3.1. Additional Analyses

This section on the additional moderation analyses is split into two parts, an initial discussion of the nature of the relationships between the variables and the more detailed discussion of the moderation analyses results.

Relationships between variables. The additional moderation analyses conducted for the density-crowding relationship confirmed normative theory in the sense that the relationship was weakly moderated by prior expectations and tolerance for crowding, and with respect to the large linear relationship between prior expectations and crowding (explaining about 38% of the variance). The fact that people did vary in their tolerance for crowding supports the subjectivity in the evaluation of density, even if to a lesser extent than expected.

The results indicate though that prior expectations matters as an antecedent to crowding but not so much as a moderator of the density-crowding relationship. Prior expectations seem to be of much higher importance than the tolerance norms, this is in support of expectancy-disconfirmation theory and previous findings (e.g. Lee & Graefe, 2003; Shelby et al., 1983).

The visitor density-crowding relationship was also large and significant in the ski resort setting which differs from research in outdoor recreation (Manning, 1999). This may be attributed

to the fact that the ski resort's visitors indicated to be fairly loyal and supposedly know what to expect due to their previous experiences with the resort (40% of the respondents expected about as many people as experienced). They seem to agree on what kind of conditions are crowded and seem to have developed the same norms during prior visits. Individual characteristics, like preference and tolerance for crowding do not seem to be very important which is also in support of the findings of the moderation analyses.

This notion is also reflected in existing theory, according to which visitors are more likely to evaluate an experience based on their expectations rather than taking their idealistic preferences into account (Shelby et al., 1983). Furthermore, for visitors with less accurate expectations, cognitive coping mechanisms may adapt expectations and tolerance levels to the situation (Oliver, 1997) and extremely intolerant visitors may have been displaced already (Manning, 1999) which could explain why the effects of tolerance for crowding are relatively small.

Another factor that might have influenced the importance of prior expectations over tolerance for crowding may be that prior expectations were measured with direct reference to the experience, whereas tolerance for crowding was measured on a more general level referring to skiing experiences in general.

The fact that perceptions of crowding were largely correlated to visitor density, is contrary to the notion that in pleasure-driven (hedonic) extended service encounter contexts, consumer may be less sensitive to crowding as it does not interfere with their consumption goals (Noone & Mattila, 2009). The ski resort could be special in this sense as it can be considered a pleasure-driven extended service encounter, but one primary goal is supposedly to get on top of

the slope in order to be able to ski/board down, and an interference with this goal is caused by crowding and waiting lines at the lifts.

Note that the density-satisfaction relationship was small, linear and significant which speaks against a U-shaped density-satisfaction relationship; low density ski resorts do not seem to be undesirable as suggested by Eroglu et al. (2005) for a retail setting.

Moderation analyses. With regard to the additional moderation analyses, marginal interaction effects of the products of visitor density and prior expectations as well as visitor density and tolerance for crowding were found for the visitor density-crowding relationship. Finding an interaction effect of the latter is even more interesting since an association of tolerance for crowding with crowding was practically not existent ($r = .01$). Yet, the interaction effects were very small and the significance of the interaction product of tolerance for crowding and density dependent on the test procedure.

Nevertheless, this indicates that prior expectations, and tolerance for crowding play a slightly bigger role in determining the visitor density-crowding relationship or in other words in how crowded people perceive a situation to be in the first place. This is not surprising with respect to normative theory and the conceptualization of crowding as a subjective negative evaluation in itself.

The strongest interaction effect for the product of prior expectations and visitor density on crowding occurred when people experienced more people than expected and significant interactions were found for all values of prior expectations. This is consistent with existing theory as far as the differing analyses can be compared (Ditton et al., 1983; Machleit et al., 2000).

For the product of tolerance for crowding and visitor density, the nature of the interaction effect on crowding is indicated to be a little more complicated and the analysis with PROCESS has the advantage that it allows us to take a closer look. As illustrated above, surprisingly, respondents with low tolerance for crowding evaluated a certain visitor density as less crowded than people with higher tolerance for crowding for low to medium visitor density, and from a medium turning point of visitor density, respondents with low tolerance for crowding evaluated the site to be more crowded than visitors with higher tolerance for crowding. Whether these differences were significant is however not known.

A possible explanation could be that the low tolerance group appreciates low visitor numbers more than people who are more tolerant and hence does not evaluate low visitor numbers as crowded. People with low tolerance for crowding seem to be the most sensitive to visitor density which is not surprising. They may have chosen the day consciously (being aware of their low tolerance) to avoid the crowds and may feel that they succeeded in that respect and hence evaluate the place as less crowded than other visitors and are happy with their choice. This is similar to the notion stated by Manning (1999) that visitors select activities and sites according to their preference and are satisfied with their choice regardless of density. This twist could also be attributed to assimilation theory, where consumers are reluctant to admit discrepancies, and contrast theory, where good conditions are evaluated as better than good (Oliver, 1997). The interaction was not significant for very high values of tolerance for crowding. Whether this is due to the fact that not enough cases indicated to have a very high tolerance for crowding remains to be tested in follow up studies. However, it does seem to make sense that the density crowding relationship does not depend on tolerance for crowding for people that do indicate to have a very high tolerance.

As to why interaction effects could not be found in the crowding-satisfaction relationship but in the visitor density-relationship, one way of reasoning would be that both suggested moderators are related to the individual characteristics of the visitor, their experiences and norms, which are known to be important in determining perceptions of crowding (Manning, 2007). Furthermore, the effect of density on crowding theoretically precedes the effect of crowding on satisfaction and as crowding is generally defined as being a negative subjective evaluation in itself, it may make more sense to relate the moderating effects to the former relationship. Testing the moderation effects on the density-crowding relationship seems to fit better with the normative definition of crowding (Graefe et al., 1984; Manning, 1999) as it involves the more immediate evaluation of the conditions.

The influence of crowding on satisfaction is suggested to be decreased by coping mechanisms and satisfaction may depend on more objective evaluations like perceived value, service quality, and maybe also on how well crowds are being accommodated by management. The latter is a line of research suggested by Machleit et al. (2000).

5.4. Validity, Generalizability and Limitations

It is crucial to evaluate the validity and generalizability of these findings with respect to the limitations and strengths of this research. The following paragraph elaborates on these aspects.

5.4.1. Design

One of the most important limitations is connected to the design of the study. A cross-sectional survey does not allow to make causal statements due to the lack of temporal order and non-spuriousness (Hayes, 2013) because the data is merely correlational and based on retrospective self-reports it was not possible to appropriately control for possible influences such as weather, snow conditions, and specific locations in the resort.

Furthermore, service quality or different satisfaction attributes related to the service offer should be important factors in determining overall satisfaction (e.g. Alexandris et al., 2006), and were not included in this study. With regard to the locations, the effects of spatial crowding as investigated in Machleit et al. (2000) may also be relevant in outdoor settings. This may affect the internal validity of the study (Neuman, 2011). However, an objective measure of visitor density was included improving the studies validity by not basing all of the analyses on self-reported constructs (Podsakoff et al., 2003) and increasing nomological validity of the measures that have been used.

It may also be a minor limitation that the retrospective survey depended on the recall of the visitors, yet the questionnaire was completed within a short period of time after the experience and research suggests that ratings of emotion can be quite accurate (Barrett, 1997).

Limitations connected to the cross-sectional nature of the survey may include problems associated with common method bias that cannot be ruled out. Common method bias may have influenced the collinearity problem for prior expectations of crowding and crowding and acceptability of wait and crowding. Furthermore they are likely to have influenced the differences of ratings within crowding construct which included one reverse item. However the moderation analyses involving possible collinearity issues with regard to the prior expectations and crowding constructs were interpreted with caution and additional simple moderation analyses ruled out major problems. Concerning the collinearity of acceptability of wait and crowding, separate mediation analyses avoided serious concerns with regard to interpretations. One remedy to avoid editing of answers due to social desirability and consistency implemented in the questionnaire design was to inform participants of the anonymity of the answers and the fact that there were no right or wrong answers (Podsakoff et al., 2003).

5.4.2. Sample

Random sampling was not within the realm of possibility for this project, therefore convenience sampling was used which is likely to diminish generalizability (Neuman, 2011). According to Neuman (2011) this non-probability sampling technique often produces non-representative samples. Although the sample is reasonably large (Tabachnick & Fidell, 2013), the results could be sample-dependent and to be able to confidently generalize the findings, follow-up replications in different contexts (Tsang & Kwan, 1999) and experimental designs and probability sampling techniques would be helpful (Neuman, 2011). Another way of looking at the size of the sample could be that it may actually be too large which may render relationships significant (Tabachnick & Fidell, 2013).

With regard to the choice of the particular resort, a downside might have been that most visitors were already loyal customers, even so, this might be the case for most small-scale regional ski resorts. Due to this characteristic, visitors may not actually evaluate behavioural intentions based on a single experience as intended, but may make judgments based on accumulated experience.

5.4.3. Measures

The measures were chosen with care, still there are some issues worth mentioning. Prior expectations of crowding adopted from Machleit et al. (2000) was measured with one item only which, in general, should be avoided due to their specificity, reduced reliability and increased measurement error (Churchill, 1979). Although one should attempt to measure expectations prior to the experience (Oliver, 1997), this was not within the scope of this project.

Acceptability of wait had not been validated as a three-item measure prior to the study (but validity was demonstrated) and the focus was on waiting times at lifts only since this was

seen as the primary concern for waiting times at a ski resort (Unbehaun et al., 2008; Won et al., 2008; Won & Hwang, 2009).

The inclusion of the revisit intention item together with intentions to recommend items in the loyalty construct reduced convergent validity to a minor degree and the reverse item in crowding did not have a major impact on the validity of the construct.

Tolerance for crowding was measured with a focus on the crowdedness of the “slope”, this word could be exchanged with the word “ski resort”. However, the difference in meaning seems very marginal. Similar to Ditton et al. (1983) who used preference as a norm, tolerance for crowding could also have been operationalized as a direct measure of discrepancy (Oliver, 1997), just as the prior expectations concept. The respondent would then be asked whether they experience fewer, about as many, or more people than tolerated and relate the answer directly to the experience instead of indicating their general tolerance.

One item in tolerance for crowding differed from the others in terms of face validity, and the reliability and convergent validity of the construct was decreased increasing the risk of measurement error with regard to this construct. Nevertheless, the properties were still acceptable.

Finally, loyalty was only measured in terms of conative loyalty and the behavioural intentions used were limited to intentions to recommend and to revisit.

5.4.4. Assumptions

Although the assumption of normality is one of the least important in linear regression (Hayes, 2013) the deviations from normality in relation to the anger construct (lack of variance) may have affected the validity of the statistical inferences. Another limitation could be the

deviations from linearity for some relationships (as mentioned above). It may be that non-linearity might have affected the power of the moderation analyses for tolerance for crowding. Still the results were interpreted with care, and it should not be generalized to other samples before follow-up studies report similar results.

5.4.5. Method of Analysis

The choice of method of analysis could attract criticism as with SEM the entire model could have been analyzed whereas with the use of PROCESS the analysis of the relationships is reduced to the relationships between observed constructs and the model had to be split into different parts and be analysed separately. Nonetheless, for the purpose of this study PROCESS served as powerful instrument and the arguments for simplicity of use and interpretation of PROCESS outweighed potential benefits that would have come along with a range of complex issues associated with SEM (Nachtigall et al., 2003) and according to Hayes (2013) it might not be necessary or better to use SEM for mediation analysis.

As a side note, it was consciously decided not to control for differences in the population (e.g. age, gender, activity, specialization), as these demographic variables were of no particular interest and as the inclusion of control variables does not necessarily yield more accurate estimates of relationships (Spector & Brannick, 2011). Moreover the differences within the groups were expected to be larger than the differences between the groups, and it was of greater interest to estimate the relationships with the given sample.

5.4.6. Generalizability

As a final remark on the generalizability, although the design and method of the study followed a rigorous approach, follow up studies should be conducted to validate and/or challenge the findings in different contexts.

5.5. Implications

The next sections summarize the main implications of this study for theory, methodology and for the management of ski resorts and potentially other recreational sites.

5.5.1. Theoretical Implications

The results indicate that both, joy and anger, (partially) mediate the crowding-satisfaction relationship in this setting of hedonic nature, even though a direct effect of crowding on satisfaction remains. The other two negative emotions in the hostility triad, contempt and disgust, were not as important as in a retail shopping context. Furthermore, the ski resort setting evoked feelings of guilt, fear, sadness and shyness more so than in the shopping setting.

Keeping the specificity of the setting in a small-scale ski resort in mind, this study suggests that the crowding-loyalty relationship is mediated by satisfaction. Moreover, how acceptable a wait is, is closely related to perceptions of crowding and visitor density levels and the construct acceptability of wait seems to be a slightly more powerful predictor for satisfaction than crowding, at sites where waiting times can occur. Furthermore emotions seem to be strongly related to acceptability of wait and conative loyalty.

The findings of the moderation analyses challenge the findings of Machleit et al. (2000) in terms of how important prior expectations of crowding and tolerance for crowding are as moderators of the crowding-satisfaction relationship. The results of this study suggest that they only play a marginal role when people evaluate how crowded they perceive a site to be based on certain visitor density levels. Nevertheless these results do not challenge the general ideas of normative, expectancy-disconfirmation theory as people did vary in their tolerance for crowding and as prior expectations explained a large part of the variance in crowding and a smaller part of the variance in satisfaction. Particularly interesting was the finding that at low levels of visitor

density, visitors who indicated a low tolerance for crowding in the skiing context, experienced the site as less crowded than visitors with a higher tolerance for crowding. This could imply that at low levels of visitor density, people with low tolerance for crowding, may experience a site more positively than others. The indications of these finding and potential implications for theory need to be confirmed by replications.

5.5.2. Methodological Implications

Some methodological issues should be considered for similar studies. To improve the validity of the tolerance for crowding measure, the T4 item could be left out or be rephrased to improve face validity. Furthermore, with regard to the loyalty construct, it needs to be assessed how appropriate it may be to create a composite variable out of intentions to recommend and intentions to revisit. As mentioned earlier, intentions to revisit, may not always be applicable depending on the context. In this study, as people were already loyal repeat visitors, dissatisfaction was expressed with lower intentions to recommend, but not in lower intentions to revisit. This study suggests that due to collinearity issues it could be problematic to include the two constructs perceptions of crowding and acceptability of wait in one model. The emotion types as defined by Izard (1977) seemed to be fitting the context only to a limited extent, further studies should show whether using alternative scales or a shortened adaption of the scale is more appropriate. Finally, the most important methodological implication would be that the superior method of moderation analysis with the continuous variable prior expectations of crowding with PROCESS for SPSS resulted in different findings than a simple ANOVA with a categorized version of the same construct. Although the different findings, cannot entirely be attributed to the method of analysis, this may motivate researchers to challenge existing findings with more

rigorous methods which may paint more accurate pictures in terms of mediation and moderation analyses.

5.5.3. Management Implications

Even though the focus of this study was more on the theoretical development of the crowding model in a recreational context, some management conclusions can still be derived from the findings.

Both, prior expectations and tolerance for crowding were significantly correlated with satisfaction. In addition prior expectations were also significantly correlated with crowding supporting previous research (Shelby et al., 1983) and loyalty. Furthermore, both prior expectations and tolerance for crowding moderated how strongly certain visitor density levels were related to perceived levels of crowding, even if the effects were very weak. For one, it still makes sense to prepare visitors especially on high density days and to create realistic expectations of visitor density, for example through the use of the website or apps designed for this purpose (Shelby et al., 1983). In this way managers could also encourage temporal or intra-site shifts to reduce crowding (Tseng et al., 2009).

The negative impacts of crowding and waiting times were indicated in this study. It could be considered to reduce the negative effects of crowding and queuing, for example by providing adequate information during the visit as suggested by Hui and Tse (1996), Manning (2003) and Kim and Shelby (2011). The management of Sirdal Skisenter already uses music at the bottom of the lifts to reduce the negative effect of waiting times through an the affective response as suggested by Kellaris and Kent (1992).

Managers of ski resorts should look beyond the profitability in short-term financial terms and manage fluctuating crowding. As common in visitor management, objectives should be set with regard to the experience that the resort wishes to offer (Manning, 2007). A good flow is important even in low density situations as people vary in their zone of tolerance and some visitors may prefer lower tolerance levels than experienced but did not have an opportunity to substitute the resort or the timing of the visit (Manning, 1999). In the context of a ski resort, visitors may see good weather and free-time at the weekend as a valid trade-offs for high density levels. With regard to tolerance for crowding, there may be an indication that low density days are evaluated even more positively by people with a low tolerance for crowding. Hence low visitor days could be important to sustain these customers. This is also in line with Moyle and Croy (2007) who suggest that visitors displaced from the high density days, are likely to opt for days with low density. This is also important to consider with regard to the potential danger arising from visitor who displace to conditions that are beyond their skill level (Kearsley & Coughlan, 1999).

Visitors to the resort were identified to be quite loyal and experienced in behavioural terms. As argued in the literature, previous experience can also make people more sensitive to crowding (Arnberger & Brandenburg, 2007; Eder & Arnberger, 2012; Manning, 1999).

If the management of the resort were to find out more about the norms of its customers, using tolerance for crowding as a norm would be the lowest in the hierarchies presented by Manning et al. (1999) and Oliver (1997) and used as a standard will generate the highest norms. Therefore, as suggested by Manning et al. (1999) the norm dimensions should be selected with care.

The visitor management techniques stated by Mowforth and Munt (2003), zoning, channeled visitor flows, restricted entry and differential pricing, could of course also be applied to a ski resort setting, yet this demands for further research. Ski resorts and potentially similar other sites should sustain and develop good systems of channeled visitor flows to accommodate the crowds and to make it easy for visitors to act in a way that does not increase tension. For example when a lot of people wait for the lifts or are on a slope, this may make some people self-conscious and create feelings of guilt, shyness, fear and sadness in relation to the pressure of not holding up the queuing process or being in the way for other people which may irritate other people.

In this respect, and with regard to the spectrum of recreational opportunities framework as outlined in the literature review, offering different areas and slopes (zones) for different skill levels and density preferences seems helpful.

As the crowding-satisfaction relationship was direct and moderately strong, and as crowding did influence behavioural intentions at least indirectly, inter-resort zoning may also be considered in an area that serves a group of ski resorts. Restricting access and differential pricing may be considered for some skiing areas (having the success of the luxury resort in Lech, Austria and crowding-free slopes in mind).

5.6. Future Research

Based on the literature review, the discussion of the findings and implications of this study, some avenues for future research have emerged.

As a next step it could be interesting to see what moderates this mediation by emotions, and in general what other factors moderate the crowding-satisfaction relationship either

specifically for a ski resort context or in a tourism/recreation context in general. Possible moderators to test could be cognitive and behavioural coping mechanisms employed by visitors as also suggested by Tseng et al. (2009), to what extent people feel that they are in control, ski resort type, information that is being provided or as suggested by Machleit et al. (2000) to what extent people think that the management makes an effort to accommodate increased visitor density. In a skiing context it probably matters whether there is enough staff in place to accommodate the crowds, whether parallel lifts are opened even if it is only slightly crowded, whether enough space is available to accommodate people for lunch, and so on.

Machleit et al. (2000) also investigated the effects of spatial crowding in their study and found stronger negative effects for this dimension of crowding. It may be interesting to investigate in the non-human elements and their relationships with social dimension of crowding in an environment, also for a recreational context, maybe even for nature-based tourism. For example, the pulpit rock seems accommodate a quite large number of people on the spacious plateau at the same time, but crowding may have a bigger influence on some of the narrower trails. A crowded restaurant is likely to seem more crowded when it is also perceived as spatially crowded and respondents in this study did indicate that they felt most crowded in the service facilities. Machleit et al. (2000) argue that when a store is spatially crowded, these spatial elements are less flexible and more permanent and shoppers have less opportunities to change the environment, whereas human crowding perceptions are likely to be altered within a given space and time. This brings me to another area of research.

One of the contributions of this study was to test and confirm the indirect crowding-loyalty relationship mediated by satisfaction in an outdoor recreation setting. It would be interesting to extend the behavioural intentions measured in this study to behavioural changes

that recreationists can make to avoid crowding and connected undesirable changes in site conditions. The concepts of destination loyalty and displacement seem to be closely related in this context. Maybe a decrease in the quality of the experience is not necessarily reflected in decreased satisfaction ratings due to cognitive and behavioural coping mechanisms that may moderate the crowding satisfaction relationship. For example, to what extent do less tolerant visitors choose low density days or different slopes to avoid crowds? Do they take less secure routes as a trade-off for solitude? Are they willing to pay more for less crowded slopes? Coping may also be reflected in intentions to recommend. People may still be happy with their experience but ideally would have preferred other conditions. For example, do visitors that felt crowded recommend their friends to visit a particular site at a supposedly less crowded time, or to take a less crowded slope or trail within the site? These alternatives refer to the concepts of temporal and spatial displacement respectively and it would be interesting to extend the model that has been studied here in this way.

Future studies could also look more directly into how visitor behaviour changes in crowded conditions, for example, through time block diary analysis as done by Vassiliadis et al. (2013) or with the help of GPS as suggested by Dickson, Terwiel, Waddington, and Trathen (2011), or ski lift technology.

Other promising constructs to be included in the model could be service quality and perceived value. Place attachment seems to be an important attitudinal concept determining behavioural intentions and should be investigated also with respect to the suggestions made above.

The role of specific emotions types with regards to subjective evaluations of waiting times and loyalty represents another potential area of future research. The conceptualization of

satisfaction suggest that cognitive processes precede affective responses (Oliver, 1997) in accordance with the mediation models suggested in this study. However, loyalty also has an affective element (Oliver, 1999), and some authors have suggested that affective responses are antecedents of perceptions of waiting time (Baker & Cameron, 1996; Kellaris & Kent, 1992). This would probably be best to test with structural equation modelling.

Besides testing the model in other ski resort and recreational contexts, experimental designs would be needed to make more informed statements about the causal relationships involved in this model, and structural equation modelling should be applied to estimate the entire model simultaneously. Whether people would be willing to pay more for less or non-crowded slopes and ski resorts remains a topic for future research, in this respect choice modelling could inform visitor management strategies.

Finally, another area of research could be how, both, individual locals and communities cope with crowding of areas that may not have been crowded some years ago and to what extent this depends on benefits and impacts connected to increasing visitor numbers.

6. Conclusion

The results of this study contribute to answering the question how crowding influences experience evaluations – it influences satisfaction (partially) through the emotions anger and joy, and behavioural intentions (fully) through satisfaction in a ski resort setting. With regard to the question when crowding influences experience evaluations, I found evidence of linear relationships between visitor density and crowding, and crowding and satisfaction for the extended service encounter in a ski resort context. However, since prior expectations and tolerance did not seem to be moderating the crowding-satisfaction relationship significantly, further research contributing to answering the question under which conditions, or “when” is still

needed, not only with respect to the crowding-satisfaction relationship, but also investigating the indirect crowding-loyalty relationship mediated by satisfaction. As another important contribution of the study the emotion evoked by perceptions of crowding in a ski resort context have been assessed which enables managers to better understand the experiences of their customers.

One of the broader aims of the study was to establish a basis for comparing findings and synthesizing literature in crowding research across disciplines. More specifically this study was set out to see if there were any differences in answering the “how and when” questions for the context of retail shopping and for a recreational context at a ski resort. The idea was to draw from existing literature across disciplines leading to a structured and focused approach guiding crowding research within tourism and recreation in Norway. As a starting point, a ski resort setting seemed to be appropriate, considering that it combines characteristics typical for service environments, and characteristics of an outdoor recreation site. The latter is an important area of research considering that nature tourism in Norway is of growing interest for both tourists and Norwegian economy.

Although there is an extensive body of research that has been conducted on crowding, especially within outdoor recreation, this study was able to find somewhat surprising results also due to superior methods of analyses that have been employed (especially with regard to the moderation analyses). New and more reliable methods can challenge previous findings based on more traditional and outdated methods which should be considered when designing future studies. The importance of replications cannot be overstated in this respect and future research should systematically build on the basic model investigated in this study and an application

across different tourism contexts should better the understanding of the “how and when” conditions.

Finally, it has been stated that satisfaction as a measure of experience quality may not be sensitive enough to detect changes in site conditions such as an increased level of crowding due to coping mechanisms in recreation contexts. Crowding however is commonly seen as a factor that can decrease the quality of experiences, which has been confirmed in this study, and is likely to become a bigger issue for at least some destinations in Norway that are already reporting rapidly increasing visitor numbers over the last years. Therefore, crowding research should investigate impacts beyond overall satisfaction ratings, and move towards other promising concepts such as perceived value, loyalty and displacement and test moderating effects connected to the management of sites to answer the question what managers can do to weaken the effect of crowding on experience quality and loyalty.

References

- Absher, J. D., & Lee, R. G. (1981). Density as an incomplete cause of crowding in backcountry settings. *Leisure Sciences, 4*(3), 231-247.
- Aftenbladet (2015, October 13). Kjerag slår Trolltunga. *Aftenbladet*. Retrieved from <http://www.aftenbladet.no/nyheter/lokalt/ryfylke/Kjerag-slar-Trolltunga-3788991.html>
- Ajzen, I., & Driver, B. L. (1991). Prediction of leisure participation from behavioral, normative, and control beliefs: An application of the theory of planned behavior. *Leisure Sciences, 13*(3), 185-204.
- Alexandris, K., Kouthouris, C., & Meligdis, A. (2006). Increasing customers' loyalty in a skiing resort: The contribution of place attachment and service quality. *International Journal of Contemporary Hospitality Management, 18*(5), 414-425.
- Arnberger, A., & Brandenburg, C. (2007). Past on-site experience, crowding perceptions, and use displacement of visitor groups to a peri-urban national park. *Environmental management, 40*(1), 34-45.
- Arnberger, A., & Eder, R. (2012). Exploring coping behaviours of Sunday and workday visitors due to dense use conditions in an urban forest. *Urban Forestry & Urban Greening, 11*(4), 439-449.
- Arnberger, A., & Haider, W. (2007). Would you displace? It depends! A multivariate visual approach to intended displacement from an urban forest trail. *Journal of Leisure Research, 39*(2), 345.
- Arnberger, A., Haider, W., Eder, R., & Muhar, A. (2010). Modelling visitor groups' intentions to displace from an urban trail: a combined stated preference and video monitoring approach. *Journal of environmental planning and management, 53*(6), 809-825.

- Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioral intentions. *Annals of tourism research*, 27(3), 785-804.
- Baker, J., & Cameron, M. (1996). The effects of the service environment on affect and consumer perception of waiting time: An integrative review and research propositions. *Journal of the Academy of Marketing Science*, 24(4), 338-349.
- Barrett, L. F. (1997). The relationships among momentary emotion experiences, personality descriptions, and retrospective ratings of emotion. *Personality & Social Psychology Bulletin*, 23(10), 1100-1110.
- Bell, P. A., Green, T., Fisher, J. D., & Baum, A. (2001). *Environmental Psychology*. Fort Worth: Harcourt College.
- Bielen, F., & Demoulin, N. (2007). Waiting time influence on the satisfaction-loyalty relationship in services. *Managing Service Quality: An International Journal*, 17(2), 174-193.
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *the Journal of Marketing*, 57-71.
- Bonnefoy-Claudet, L., & Ghantous, N. (2013). Emotions' Impact On Tourists' Satisfaction with Ski Resorts: The Mediating Role of Perceived Value. *Journal of Travel & Tourism Marketing*, 30(6), 624-637.
- Bonnes, M., Lee, T., & Bonaiuto, M. (2003). Psychological theories for environmental issues.
- Bower, G. H. (1981). Mood and memory. *American psychologist*, 36(2), 129.
- Buckley, R. (2006). *Adventure tourism*. Wallingford, UK: Cabi.
- Budruk, M., Stanis, S. A. W., Schneider, I. E., & Heisey, J. J. (2008). Crowding and experience-use history: A study of the moderating effect of place attachment among water-based recreationists. *Environmental management*, 41(4), 528-537.

- Burnkrant, R. E., & Page Jr, T. J. (1982). An examination of the convergent, discriminant, and predictive validity of Fishbein's behavioral intention model. *Journal of Marketing research*, 550-561.
- Carson, T. P., & Adams, H. E. (1980). Activity valence as a function of mood change. *Journal of Abnormal Psychology*, 89(3), 368.
- Chan, L. K., Hui, Y. V., Lo, H. P., Tse, S. K., Tso, G. K., & Wu, M. L. (2003). Consumer satisfaction index: new practice and findings. *European Journal of Marketing*, 37(5/6), 872-909.
- Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing research*, 64-73.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155.
- Dawson, J., Havitz, M., & Scott, D. (2011). Behavioral adaptation of alpine skiers to climate change: Examining activity involvement and place loyalty. *Journal of Travel & Tourism Marketing*, 28(4), 388-404.
- Demiroglu, O. C., Dannevig, H., & Aall, C. (2012). *Climate Change Effects on Alpine Ski Areas in Sogn og Fjordane*. Paper presented at the 2nd Interdisciplinary Tourism Research Conference, Fethiye, Turkey.
- Derbaix, C., & Pham, M. T. (1991). Affective reactions to consumption situations: A pilot investigation. *Journal of Economic Psychology*, 12(2), 325-355.
- Dickson, T. J., Terwiel, F. A., Waddington, G., & Trathen, S. (2011). Evaluation of the use of a GPS data-logging device in a snowsport environment. *Procedia Engineering*, 13, 470-475.
- Ditton, R. B., Fedler, A. J., & Graefe, A. R. (1983). Factors contributing to perceptions of recreational crowding. *Leisure Sciences*, 5(4), 273-288.

- Donnelly, M. P., Vaske, J. J., Whittaker, D., & Shelby, B. (2000). Toward an understanding of norm prevalence: A comparative analysis of 20 years of research. *Environmental management*, 25(4), 403-414.
- Durrande-Moreau, A. (1999). Waiting for service: ten years of empirical research. *International Journal of Service Industry Management*, 10(2), 171-194.
- Eder, R., & Arnberger, A. (2012). The influence of place attachment and experience use history on perceived depreciative visitor behavior and crowding in an urban national park. *Environmental management*, 50(4), 566-580.
- Education First (2015). *EF English Proficiency Index 2015*. Retrieved from <http://www.ef.no/epi/>
- Eroglu, S., & Harrell, G. D. (1986). Retail crowding: Theoretical and strategic implications. *Journal of Retailing*.
- Eroglu, S. A., Machleit, K., & Barr, T. F. (2005). Perceived retail crowding and shopping satisfaction: the role of shopping values. *Journal of business research*, 58(8), 1146-1153.
- Eroglu, S. A., & Machleit, K. A. (1990). An empirical study of retail crowding: antecedents and consequences. *Journal of Retailing*, 66(2), 201.
- Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: a conceptual model and implications. *Journal of business research*, 54(2), 177-184.
- Faullant, R., Matzler, K., & Füller, J. (2008). The impact of satisfaction and image on loyalty: the case of Alpine ski resorts. *Managing Service Quality: An International Journal*, 18(2), 163-178.
- Faullant, R., Matzler, K., & Mooradian, T. A. (2011). Personality, basic emotions, and satisfaction: Primary emotions in the mountaineering experience. *Tourism Management*, 32(6), 1423-1430.

- Fonner, R. C., & Berrens, R. P. (2014). A hedonic pricing model of lift tickets for US alpine ski areas: examining the influence of crowding. *Tourism Economics*, 20(6), 1215-1233.
- Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: nature, purpose, and findings. *the Journal of Marketing*, 7-18.
- Frijda, N. H. (2008). The psychologists' point of view. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (Vol. 3, pp. 68-87). New York: Guilford Press.
- Graefe, A. R., & Vaske, J. J. (1987). A framework for managing quality in the tourist experience. *Annals of tourism research*, 14(3), 390-404.
- Graefe, A. R., Vaske, J. J., & Kuss, F. R. (1984). Social carrying capacity: An integration and synthesis of twenty years of research. *Leisure Sciences*, 6(4), 395-431.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7 ed.). Harlow, UK: Pearson Education Limited.
- Hall, T., & Shelby, B. (2000). Temporal and spatial displacement: Evidence from a high-use reservoir and alternate sites. *Journal of Leisure Research*, 32(4), 435.
- Harrell, G. D., Hutt, M. D., & Anderson, J. C. (1980). Path analysis of buyer behavior under conditions of crowding. *Journal of Marketing research*, 45-51.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*: Guilford Press.
- Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of marketing*, 69(2), 84-96.
- Hui, M. K., & Bateson, J. E. (1991). Perceived control and the effects of crowding and consumer choice on the service experience. *Journal of Consumer research*, 174-184.

- Hui, M. K., & Tse, D. K. (1996). What to tell consumers in waits of different lengths: An integrative model of service evaluation. *the Journal of Marketing*, 81-90.
- Hwang, J., Yoon, S.-Y., & Bendle, L. J. (2012). Desired privacy and the impact of crowding on customer emotions and approach-avoidance responses: Waiting in a virtual reality restaurant. *International Journal of Contemporary Hospitality Management*, 24(2), 224-250.
- Innovation Norway (2015). *Key figures for Norwegian travel and tourism 2014*. Retrieved from http://www.innovasjon Norge.no/Global/Reiseliv/Markedsdata/IN_n%C3%B8kkeltall_eng_WEB_enkel.pdf
- Isen, A. M., Shalcker, T. E., Clark, M., & Karp, L. (1978). Affect, accessibility of material in memory, and behavior: A cognitive loop? *Journal of Personality and Social Psychology*, 36(1), 1.
- Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.
- Johnson, A. K., & Dawson, C. P. (2004). An exploratory study of the complexities of coping behavior in Adirondack wilderness. *Leisure Sciences*, 26(3), 281-293.
- Jøssang, T.I. (2014, October 18). Kjerag svever høyt. *Aftenbladet*. Retrieved from <http://www.aftenbladet.no/nyheter/Kjerag-svever-hoyt-3538243.html>
- Kearsley, G., & Coughlan, D. (1999). Coping with crowding: Tourist displacement in the New Zealand backcountry. *Current Issues in Tourism*, 2(2-3), 197-210.
- Kellaris, J. J., & Kent, R. J. (1992). The influence of music on consumers' temporal perceptions: does time fly when you're having fun? *Journal of Consumer Psychology*, 1(4), 365-376.
- Kil, N., Holland, S. M., Stein, T. V., & Ko, Y. J. (2012). Place attachment as a mediator of the relationship between nature-based recreation benefits and future visit intentions. *Journal of Sustainable Tourism*, 20(4), 603-626.

- Kim, D., Lee, C.-K., & Sirgy, M. J. (2015). Examining the Differential Impact of Human Crowding Versus Spatial Crowding on Visitor Satisfaction at a Festival. *Journal of Travel & Tourism Marketing*(ahead-of-print), 1-20.
- Kim, D., Lee, C.-K., & Sirgy, M. J. (2016). Examining the Differential Impact of Human Crowding Versus Spatial Crowding on Visitor Satisfaction at a Festival. *Journal of Travel & Tourism Marketing*, 33(3), 293-312.
- Kim, S.-O., & Shelby, B. (2011). Effects of information on perceived crowding and encounter norms. *Environmental management*, 47(5), 876-884.
- Kuentzel, W. F., & Heberlein, T. A. (1992). Cognitive and behavioral adaptations to perceived crowding: A panel study of coping and displacement. *Journal of Leisure Research*, 24, 377-377.
- Kyle, G., Graefe, A., Manning, R., & Bacon, J. (2004a). Effect of activity involvement and place attachment on recreationists' perceptions of setting density. *Journal of Leisure Research*, 36(2), 209.
- Kyle, G., Graefe, A., Manning, R., & Bacon, J. (2004b). Effects of place attachment on users' perceptions of social and environmental conditions in a natural setting. *Journal of Environmental Psychology*, 24(2), 213-225.
- Lee, J., & Graefe, A. R. (2003). Crowding at an arts festival: extending crowding models to the frontcountry. *Tourism Management*, 24(1), 1-11.
- Lee, J., Graefe, A. R., & Burns, R. C. (2004). Service quality, satisfaction, and behavioral intention among forest visitors. *Journal of Travel & Tourism Marketing*, 17(1), 73-82.
- Lee, J., Graefe, A. R., & Burns, R. C. (2007). Examining the antecedents of destination loyalty in a forest setting. *Leisure Sciences*, 29(5), 463-481.

- Lee, T. H., & Shen, Y. L. (2013). The influence of leisure involvement and place attachment on destination loyalty: Evidence from recreationists walking their dogs in urban parks. *Journal of Environmental Psychology, 33*, 76-85.
- Lewis, M., Haviland-Jones, J. M., & Barrett, L. F. (2008). *Handbook of emotions*. New York: Guilford Press.
- Machleit, K. A., & Eroglu, S. A. (2000). Describing and measuring emotional response to shopping experience. *Journal of business research, 49*(2), 101-111.
- Machleit, K. A., Eroglu, S. A., & Mantel, S. P. (2000). Perceived retail crowding and shopping satisfaction: what modifies this relationship? *Journal of Consumer Psychology, 9*(1), 29-42.
- Machleit, K. A., Kellaris, J. J., & Eroglu, S. A. (1994). Human versus spatial dimensions of crowding perceptions in retail environments: a note on their measurement and effect on shopper satisfaction. *Marketing Letters, 5*(2), 183-194.
- Maister, D. H. (1984). *The psychology of waiting lines*: Citeseer.
- Manning, R. E. (1999). *Studies in outdoor recreation*. Corvallis, OR: Oregon State University Press
- Manning, R. E. (2003). Emerging principles for using information/education in wilderness management. *International Journal of Wilderness, 9*(1), 20-27.
- Manning, R. E. (2007). *Parks and carrying capacity: Commons without tragedy*: Island Press.
- Manning, R. E., & Freimund, W. (2004). Use of visual research methods to measure standards of quality for parks and outdoor recreation. *Journal of Leisure Research, 36*(4), 557-579.
- Manning, R. E., & Valliere, W. A. (2001). Coping in outdoor recreation: Causes and consequences of crowding and conflict among community residents. *Journal of Leisure Research, 33*(4), 410-426.

- Manning, R. E., Valliere, W. A., & Wang, B. (1999). Crowding norms: Alternative measurement approaches. *Leisure Sciences, 21*(2), 97-115.
- Marshall, L. (2010, December). Peak of Perfection. *Condé Nast Traveller*. Retrieved from <http://www.cntraveller.com/recommended/ski-holidays/peak-of-perfection/page/peak-of-perfection-part-4>
- Mattila, A. S., & Hanks, L. (2012). Time styles and waiting in crowded service environments. *Journal of Travel & Tourism Marketing, 29*(4), 327-334.
- Matzler, K., Füller, J., Renzl, B., Herting, S., & Späth, S. (2008). Customer satisfaction with Alpine ski areas: the moderating effects of personal, situational, and product factors. *Journal of Travel Research*.
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*: the MIT Press.
- Moore, S. A., Rodger, K., & Taplin, R. (2013). Moving beyond visitor satisfaction to loyalty in nature-based tourism: A review and research agenda. *Current Issues in Tourism*(ahead-of-print), 1-17.
- Mowen, A. J., Vogelsong, H. G., & Graefe, A. R. (2003). Perceived crowding and its relationship to crowd management practices at park and recreation events. *Event Management, 8*(2), 63-72.
- Mowforth, M., & Munt, I. (2003). *Tourism and sustainability: Development, globalisation and new tourism in the third world*: Routledge.
- Moyle, B., & Croy, G. (2007). Crowding and Visitor Satisfaction During the Off-season: Port Campbell National Park. *Annals of Leisure Research, 10*(3-4), 518-531.

- Nachtigall, C., Kroehne, U., Funke, F., & Steyer, R. (2003). Pros and Cons of Structural Equation Modeling. *Methods of Psychological Research Online*, 8(2), 1-22.
- Neuman, W. L. (2011). *Social research methods: Quantitative and qualitative approaches*: Allyn and bacon Boston, MA.
- Newsome, D., Moore, S. A., & Dowling, R. K. (2012). *Natural area tourism: Ecology, impacts and management* (Vol. 58): Channel View Publications.
- Noone, B. M., & Mattila, A. S. (2009). Consumer reaction to crowding for extended service encounters. *Managing Service Quality: An International Journal*, 19(1), 31-41.
- Norwegian Ministry of Trade and Industry (2012). *Destination Norway. National strategy for the tourism industry*. Retrieved from https://www.regjeringen.no/contentassets/1ce1d6cdc bac47739b3320a66817a2dd/lenke_til_strategien-engelsk.pdf
- Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing research*, 460-469.
- Oliver, R. L. (1993). Cognitive, affective, and attribute bases of the satisfaction response. *Journal of Consumer research*, 20(3), 418-430.
- Oliver, R. L. (1997). *Satisfaction : a behavioral perspective on the consumer*. Boston: Irwin/McGraw-Hill.
- Oliver, R. L. (1999). Whence consumer loyalty? *the Journal of Marketing*, 33-44.
- Pallant, J. (2006). SPSS survival manual: A step-by-step guide to data analysis using SPSS version 15. *Maidenhead, Berkshire, England: McGraw-Hill Education*.
- Pearce, P. L. (2011). *Tourist behaviour and the contemporary world* (Vol. 51): Channel View Publications.

- Pearce, P. L., & Kang, M.-h. (2009). The effects of prior and recent experience on continuing interest in tourist settings. *Annals of tourism research*, 36(2), 172-190.
- Perdue, R. R. (2002). Perishability, yield management, and cross-product elasticity: a case study of deep discount season passes in the Colorado ski industry. *Journal of Travel Research*, 41(1), 15-22.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Prayag, G., & Ryan, C. (2012). Antecedents of tourists' loyalty to Mauritius The role and influence of destination image, place attachment, personal involvement, and satisfaction. *Journal of Travel Research*, 51(3), 342-356.
- Rivera, M. A., & Croes, R. (2010). Ecotourists' loyalty: will they tell about the destination or will they return? *Journal of Ecotourism*, 9(2), 85-103.
- Schmidt, D. E., & Keating, J. P. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin*, 86(4), 680.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513.
- Shelby, B., & Heberlein, T. A. (1984). A conceptual framework for carrying capacity determination. *Leisure Sciences*, 6(4), 433-451.
- Shelby, B., Heberlein, T. A., Vaske, J. J., & Alfano, G. (1983). Expectations, preferences, and feeling crowded in recreation activities*. *Leisure Sciences*, 6(1), 1-14.
- Shelby, B., Vaske, J. J., & Heberlein, T. A. (1989). Comparative analysis of crowding in multiple locations: Results from fifteen years of research. *Leisure Sciences*, 11(4), 269-291.

- Sirdal Skisenter (2016). *Ski Centre*. Retrieved from <http://sirdal-skisenter.no/en/skicentre/>
- Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods, 14*(2), 287-305.
- Steg, L., van den Berg, A. E., & De Groot, J. I. (2012). *Environmental psychology: An introduction*: John Wiley & Sons.
- Stokols, D. (1972). On the distinction between density and crowding: Some implications for future research. *Psychological review, 79*(3), 275.
- Su, H.-J., Cheng, K.-F., & Huang, H.-H. (2011). Empirical study of destination loyalty and its antecedent: The perspective of place attachment. *The Service Industries Journal, 31*(16), 2721-2739.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: HarperCollins.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Upper Saddle River, NJ: Pearson Education.
- Tian-Cole, S., Crompton, J. L., & Willson, V. L. (2002). An empirical investigation of the relationships between service quality, satisfaction and behavioral intentions among visitors to a wildlife refuge. *Journal of Leisure Research*.
- Tsang, E. W., & Kwan, K.-M. (1999). Replication and theory development in organizational science: A critical realist perspective. *Academy of Management review, 24*(4), 759-780.
- Tseng, Y.-P., Kyle, G. T., Shafer, C. S., Graefe, A. R., Bradle, T. A., & Schuett, M. A. (2009). Exploring the crowding–satisfaction relationship in recreational boating. *Environmental management, 43*(3), 496-507.
- ultimate-ski.com (n.d.). *Lech-Zurs Ski Lifts & Lift Passes*. Retrieved from <http://www.ultimate-ski.com/ski-resorts/austria/vorarlberg/lech-zurs/ski-lifts-lift-passes.aspx>

Unbehaun, W., Pröbstl, U., & Haider, W. (2008). Trends in winter sport tourism: challenges for the future. *Tourism Review*, 63(1), 36-47.

Urry, J. (1990). *The Tourist Gaze: Leisure and travel in contemporary societies, theory, culture & society*. London: Sage.

Vaske, J. J., & Donnelly, M. P. (2002). Generalizing the encounter--norm--crowding relationship. *Leisure Sciences*, 24(3-4), 255-269.

Vaske, J. J., & Shelby, L. B. (2008). Crowding as a descriptive indicator and an evaluative standard: Results from 30 years of research. *Leisure Sciences*, 30(2), 111-126.

Vassiliadis, C. A., Priporas, C.-V., & Andronikidis, A. (2013). An analysis of visitor behaviour using time blocks: A study of ski destinations in Greece. *Tourism Management*, 34, 61-70.

Wakefield, K. L., & Blodgett, J. G. (1994). The importance of servicescapes in leisure service settings. *Journal of Services Marketing*, 8(3), 66-76.

Walsh, R. G., Miller, N. P., & Gilliam, L. O. (1983). Congestion and willingness to pay for expansion of skiing capacity. *Land Economics*, 195-210.

Weaver, D. B. (2008). *Ecotourism*: <http://au.wiley.com/WileyCDA/>.

Westbrook, R. A. (1987). Product/consumption-based affective responses and postpurchase processes. *Journal of Marketing research*, 258-270.

Wood, S. (2009, November 14). Heights of good taste: Why Lech is a must-visit destination for gourmet skiers. Independent. Retrieved from <http://www.independent.co.uk/travel/skiing/heights-of-good-taste-why-lech-is-a-must-visit-destination-for-gourmet-skiers-1820366.html>

- Won, D., Bang, H., & Shonk, D. J. (2008). Relative importance of factors involved in choosing a regional ski destination: Influence of consumption situation and recreation specialization. *Journal of Sport & Tourism, 13*(4), 249-271.
- Won, D., & Hwang, S. (2009). Factors influencing the college skiers and snowboarders' choice of a ski destination in Korea: A conjoint study. *Managing Leisure, 14*(1), 17-27.
- Wytenbach, M., Haider, W., & Pröbstl, U. (2012, August). *Too many people in the mountains in the winter time?* Paper presented at the International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas, Stockholm, Sweden.
- Yoon, Y., & Uysal, M. (2005). An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. *Tourism Management, 26*(1), 45-56.
- Yuksel, A., Yuksel, F., & Bilim, Y. (2010). Destination attachment: Effects on customer satisfaction and cognitive, affective and conative loyalty. *Tourism Management, 31*(2), 274-284.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *the Journal of Marketing, 31*-46.

Appendix B. Invitation and Reminder Emails

1. Subject: Your experience at Sirdal Skisenter/University of Stavanger Research

Message:

Dear Sir or Madam,

Thank you very much for signing up for my online survey.

My name is Kathrin Jathe and I am a student at the Norwegian School of Hotel Management and I need your help to complete my Master's Thesis.

I would appreciate it very much if you could take part in this anonymous study.

EACH PARTICIPANT CAN WIN 2 DAY PASSES FOR SIRDAL SKISENTER.

Please follow this link: [SURVEYLINK]

Thank you very much in advance and feel free to contact me should you have any questions.

Best regards

Kathrin Jathe

Student of International Hotel and Tourism Leadership (Master of Science)

Norwegian School of Hotel Management

University of Stavanger

If you do not want to receive such emails in the future, please click on following link to unsubscribe: LINK

2. Subject: REMINDER: Your experience at Sirdal Skisenter/University of Stavanger Research

Message:

Dear Sir or Madam,

thank you very much for signing up and "TUSEN TAKK" to all of you who have already invested the time to participate in my survey! To all others, this email serves as a REMINDER, in case you considered to participate and to share your experiences with me – it would add immensely to the quality of my work.

As the survey is anonymous, I cannot see who has responded already. Sorry for the inconvenience, this is the first reminder and there will only be one more after this.

My name is Kathrin Jathe and I am a student at the Norwegian School of Hotel Management and I need your help to complete my Master's Thesis. I would appreciate it very much if you could take part in this anonymous study.

EACH PARTICIPANT CAN WIN 2 DAY PASSES FOR SIRDAL SKISENTER.

Please follow this link: [SURVEYLINK]

Thank you very much in advance and feel free to contact me should you have any questions.

Best regards

Kathrin Jathe
Student of International Hotel and Tourism Leadership (Master of Science)

Norwegian School of Hotel Management
University of Stavanger

If you do not want to receive such emails in the future, please click on following link to unsubscribe: LINK

3. Subject: LAST REMINDER: Your experience at Sirdal Skisenter/University of Stavanger Research

Message:

Dear Sir or Madam,

thank you very much for signing up and "TUSEN TAKK" to all of you who have already invested the time to participate in my survey! To all others, this email serves as a REMINDER, in case you considered to participate and to share your experiences with me – it would add immensely to the quality of my work.

As the survey is anonymous, I cannot see who has responded already. Sorry for the inconvenience, this is the last reminder and I won't bother you any more from now on.

My name is Kathrin Jathe and I am a student at the Norwegian School of Hotel Management and I need your help to complete my Master's Thesis.

I would appreciate it very much if you could take part in this anonymous study.

EACH PARTICIPANT CAN WIN 2 DAY PASSES FOR SIRDAL SKISENTER.

Please follow this link: [SURVEYLINK]

Thank you very much in advance and feel free to contact me should you have any questions.

Best regards

Kathrin Jathe

Student of International Hotel and Tourism Leadership (Master of Science)

Norwegian School of Hotel Management

University of Stavanger

If you do not want to receive such emails in the future, please click on following link to unsubscribe: LINK

Appendix C. Alterations According to Expert Review and Pre-test Feedback

Page 1

Text has been shortened.

Completion time changed from 15 minutes to 10 minutes.

Page 2

No changes.

Page 3

Question about the date of experience has been moved from the back of the survey to the start to increase likelihood that people would answer it.

In the pre-test version all questions needed to be answered in order to continue to the next page. The number of required questions (marked with a red asterisk) has been reduced on pages 3 and 7 in order to reduce potential respondent irritation. Pages 5 and 6 included the main constructs for the analyses and maintained the requirement in order to ensure complete and usable cases.

The question about the travel time, was specified with “permanent residence” instead of just using the word “residence” and the time indication was changed to minutes instead of hours in order to get a more accurate picture.

The wording of questions 4 and 5 was changed for clarification.

Question 5 was added.

Question 10 was moved to follow the questions about the respondent’s skill level.

Page 4

Page 4 was added to redirect people that visited the resort before to answer two more questions about their experience use history while first-time visitors were directed to page 5.

Page 5

The scale labelling for question 13, 14, 15, and 16 was improved.

The wording of question 30 was simplified by exchanging the word “granted” with the word “made”.

Page 6

No changes.

Page 7

When asking about the year of birth, a fixed “19” preceding the open answer box was taken away.

An open comment box was added.

Appendix D. Online Questionnaire

Your experience at Sirdal Skisenter

Page 1

Contact: Kathrin Jathe, Norsk hotellhøgskole, kathrin.jathe@uis.no.



Universitetet
i Stavanger

17 February - 13 March 2016

Dear participant,

Thank you for taking the time to participate in this study about your experiences at Sirdal Skisenter.

It will take about 10 minutes to complete the questionnaire. I am interested in the feelings and opinions that people have on a skiing day. The results can help to improve the services provided to visitors and your responses will be treated strictly confidential and anonymously. The information that you provide will not be used for commercial purposes or solicitations in any manner.

Page 2

Please take a few minutes to think about your skiing experience at Sirdal Skisenter on the day that I approached you and then answer the questions as good as you can. There are no right or wrong answers.

For clarification: Sirdal Skisenter comprises Tjørhomfjellet and Ålsheia.

Page 3

SOME GENERAL QUESTIONS

1. When did you visit Sirdal Skisenter? Meant here is the day that I asked you to sign up for the questionnaire.

This is the day that you should have in mind when answering the questions later on in the questionnaire.

Please indicate the date: 2016

2. Are you a skier or a snowboarder?

If both, please indicate what you were doing on the day that I approached you.

Skier

Snowboarder

3. How long did it take you to travel from your permanent residence to Sirdal Skisenter?

Please indicate the number of minutes (example: 70 minutes): minute(s)

4. For how many days did you go skiing/snowboarding at Sirdal Skisenter?

Please indicate how long you stayed in days (example: 1 day): day(s)

5. How many people were you travelling with (including yourself)?

Please indicate the number of people you are travelling with (example: 3 persons): person(s)

Please indicate to what level you agree with the following statements. *

	strongly disagree 1	2	neutral 3	4	strongly agree 5
29. Overall, I consider that the stay at Sirdal Skisenter was well worth the energy which I dedicated to it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Overall, the stay at Sirdal Skisenter was well worth the sacrifices I made.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Overall, I consider that the stay at this resort was well worth the time and money that I spent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 6

SOME QUESTIONS ABOUT HOW YOU FELT DURING YOUR EXPERIENCE

Please indicate the extent to which you felt as described by each of the following adjectives during the experience at the ski resort. *

	not at all 1	2	neutral 3	4	very much so 5
32. Happy (glad)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Delighted (fornøyd)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Cheerful (munter)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Sad (trist)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Gloomy (dyster)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Depressed (deprimert)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Alert (våken)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Attentive (oppmerksomt)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Mad (sur)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Angry (sint)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Irritated (irritert)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Guilty (skyldig)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Repentant (angrende)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Blameworthy (klanderverdig)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Ashamed (skamful)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Bashful (blyg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Shy (sjenert)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Disgusted (avsky)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Feeling of distaste (avsmak)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Disregard (ignorerer)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Contemptuous (foraktelig)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Scornful (hånlig)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. Defiant (trassig)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. Astonished (forbauset)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Surprised (overrasket)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Fearful (redd)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. Nervous (nervøs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 7

ALMOST DONE! - SOME FINAL QUESTIONS

Please indicate to what level you agree with the following statements. *

	strongly disagree 1	2	3	neutral 4	5	6	strongly agree 7
72. I avoid crowded slopes whenever possible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. A crowded slope doesn't really bother me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. If I see a slope that is crowded, I won't even go.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. It's worth having to deal with a crowded slope if I can save time and money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

76. What is your gender?

- Female
- Male

77. What is your nationality?

78. What is your year of birth?

I was born in .

79.

	Less than secondary school	Secondary school	High school	Bachelor's degree	Master's degree	Doctorate degree
What is the highest level of education you have completed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In case you have any comments or points of improvement for Sirdal Skisenter that you would like to mention feel free to do so here:

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

Contact:
Kathrin Jathe
Norsk hotellhøgskole, Stavanger
kathrin.jathe@uis.no
17 February - 13 March 2016

» [Redirection to final page of eSurvey Creator \(change\)](#)

Appendix E. Descriptive Statistics, Distribution, Reliability and Convergent Validity

Table E1

Descriptive Statistics, Distribution, Reliability and Convergent Validity

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
<i>Visitor Density</i>	230	1	1552	699	.08	-.61					
<i>Specialization (9-point)</i>	248	3	6.23	1.70	-.30	-.51	.96		93%	.98-.95	
Sp1 My confidence level as a skier/snowboarder.			6.23	1.73	-.40	-.32				.97	.94
Sp2 My knowledge/ability of skiing/snowboarding.			6.25	1.73	-.41	-.25				.98	.95
Sp3 My ability to adapt to different skiing/snowboarding situations.			6.11	1.82	-.33	-.53				.95	.90
<i>Alternative Crowding measure (9-point)</i>	248										
C1 The lifts			4.63	2.29	.32	-1.01					
C2 The service facilities			4.87	2.02	.19	-.78					
C3 The slopes			4.14	1.74	.41	-.39					
C4 Sirdal Skisenter (overall)			4.46	1.83	.27	-.76					

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
<i>Crowding (7-point)</i>	248	4	3.76	1.59	.24	-.63	.89		76%	.94-.70	
C5 The ski resort seemed very crowded to me.			3.56	1.83	.34	-.88				.94	.88
C6 The ski resort was a little too busy.			3.33	1.75	.46	-.73				.93	.86
C7 There wasn't much traffic at the ski resort during my trip (reversed).			3.82	1.89	.09	-1.13				.70	.49
C8 There were a lot of people at the ski resort.			3.96	1.89	.14	-1.13				.89	.80
<i>Acceptability of waiting time (7-point)</i>	248	3	5.09	1.77	-.67	-.61	.94		89%	.96-.91	
W1 The waiting time at the lifts was reasonable.			5.14	1.81	-.71	-.60				.96	.92
W2 The duration of the wait was acceptable.			5.12	1.82	-.67	-.70				.96	.92
W3 The waiting time at the lifts was too long (reversed).			3.00	2.01	.68	-.87				.91	.82
<i>Satisfaction (11-point)</i>	243	4	7.92	1.96	-.30	-.38	.86		73%	.88-.79	
Sat1 All in all, I am satisfied with this trip to Sirdal Skisenter.			8.89	1.74	-.80	.52				.88	.78
Sat2 This trip to Sirdal Skisenter meets my expectations.			8.57	2.02	-.88	.35				.86	.73

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
Sat3 This trip to Sirdal Skisenter compares to an ideal ski resort experience.			6.01	2.80	-.02	-.89				.79	.63
Sat4 Overall, how satisfied are you with the visit to Sirdal Skisenter?			8.21	1.86	-.77	.79				.88	.78
<i>Loyalty (5-point)</i>	246	4	4.18	.71	-.62	.08	.87	73%	.95-.49		
L1 I will recommend Sirdal Skisenter to people who seek my advice.			4.03	.89	-.72	.17				.94	.88
L2 I will tell other people positive things about Sirdal Skisenter.			4.04	.88	-.82	.49				.95	.90
L3 I will recommend Sirdal Skisenter to my friends.			4.02	.89	-.76	.26				.95	.90
L4 I will visit Sirdal Skisenter again.			4.61	.63	-1.60	2.18				.49	.24
<i>Prior Expectations</i> (Please indicate your prior expectations of crowding; 7- point)	248	1	3.62	1.60	.10	-.30					

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
<i>Tolerance for Crowding (7-point)</i>	248	4	3.52	1.13	-.11	-.24	.61		47%	.79-.45	
T1 I avoid crowded slopes whenever possible (reversed).			4.94	1.62	-.55	-.27				.77	.59
T2 A crowded slope doesn't really bother me.			3.07	1.71	.52	-.70				.79	.63
T3 If I see a slope that is crowded, I won't even go (reversed).			3.26	1.75	.37	-.93				.67	.45
T4 It's worth having to deal with a crowded slope if I can save time and money.			3.22	1.58	.15	-.84				.45	.20
<i>Joy (5-point)</i>	246	3	4.12	.66	-.23	-.67	.83		75%	.89-.84	
J1 Happy			4.25	.67	-.35	-.80				.89	.80
J2 Delighted			4.12	.79	-.81	1.03				.87	.75
J3 Cheerful			3.99	.82	-.61	.42				.84	.71
<i>Sadness (5-point)</i>	248	248	3	1.27	.62	2.73	7.09	.91	84%	.93-.90	
S1 Sad			1.28	.65	2.52	5.95				.93	.87
S2 Gloomy			1.29	.71	2.42	4.93				.90	.80
S3 Depressed			1.23	.67	3.20	10.15				.93	.86
<i>Interest (5-point)</i>	242	2	3.95	.69	-.03	-.73		.66			
I1 Alert			3.93	.78	-.09	-.84					
I2 Attentive			3.98	.74	-.34	.19					

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
<i>Anger(5-point)</i>	244	3	1.45	.69	1.80	2.97	.83		77%	.92-.80	
A1 Mad			1.39	.83	2.08	3.82				.92	.85
A2 Angry			1.32	.66	2.12	3.74				.91	.82
A3 Irritated			1.65	.95	1.32	.82				.80	.65
<i>Guilt (5-point)</i>	248	3	1.27	.63	2.86	8.74	.86		79%	.91-.85	
G1 Guilty			1.24	.72	3.30	11.14				.85	.72
G2 Repentant			1.29	.71	2.57	6.24				.91	.83
G3 Blameworthy			1.27	.71	2.66	6.55				.91	.82
<i>Shyness (5-point)</i>	248	3	1.24	.55	2.63	6.36	.83		75%	.91-.82	
Shy1 Ashamed			1.20	.63	3.39	11.54				.82	.67
Shy2 Bashful			1.23	.63	2.70	6.40				.91	.83
Shy3 Shy			1.27	.67	2.54	5.78				.87	.75
<i>Disgust (5-point)</i>	248	2	1.17	.55	3.91	16.74		.83			
D1 Disgust			1.15	.54	4.20	19.34					
D2 Distaste			1.19	.61	3.58	13.13					
<i>Contempt(5-point)</i>	248	4	1.17	.52	3.24	9.99	.95		88%	.96-.91	
Con1 Disregard			1.18	.58	3.42	11.20				.91	.83
Con2 Contemptuous			1.19	.59	3.14	8.99				.96	.93
Con3 Scornful			1.17	.54	3.20	9.04				.93	.87
Con4 Defiant			1.16	.52	3.43	11.48				.94	.88
<i>Surprise (5-point)</i>	245	2	1.77	.90	.82	-.57		.52			
Sur1 Astonished			1.50	.95	1.63	1.72					
Sur2 Surprised			2.04	1.17	.65	-.87					

Constructs and items	<i>n</i>	Items	<i>M</i>	<i>SD</i>	Skewness (SE=.16)	Kurtosis (SE=.31)	α	Inter- item <i>r</i>	1 st Factor	Factor loadings	Communalities
<i>Fear (5-point)</i>	234	2	1.43	.67	1.45	1.00		.69			
F1 Fearful			1.36	.66	1.59	1.12					
F2 Nervous			1.50	.80	1.51	1.34					

Appendix F. Assessing Normality of Distributions

Figure F1. *Normal Q-Q Plot of Prior Expectations of Crowding*

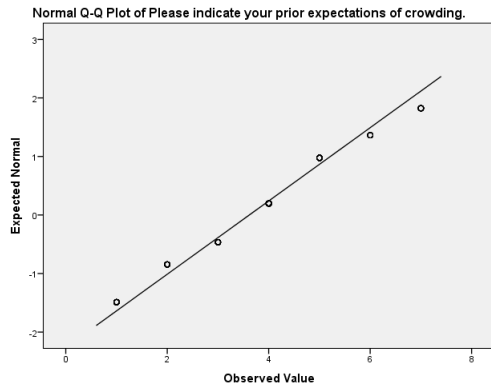


Figure F2. *Normal Q-Q Plot of Tolerance for Crowding*

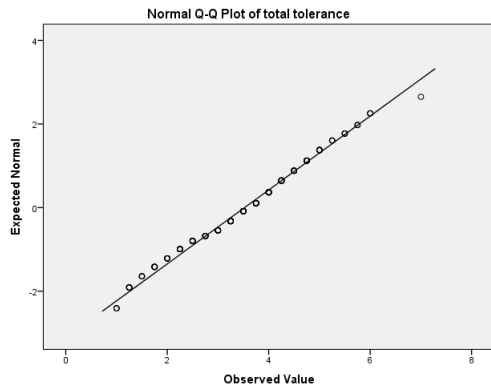


Figure F3. *Normal Q-Q Plot of Crowding*

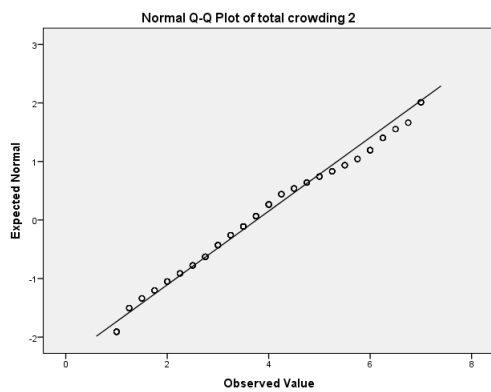


Figure F4. *Normal Q-Q Plot of Acceptability of Wait*

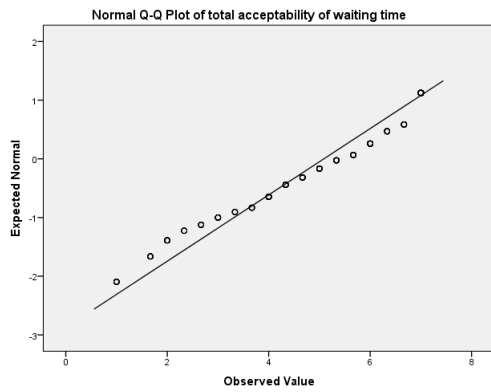


Figure F5. *Normal Q-Q Plot of Satisfaction*

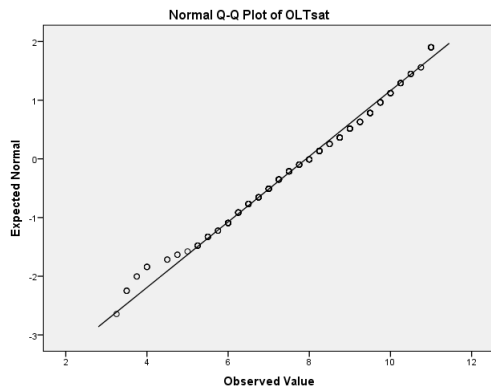


Figure F6. *Normal Q-Q Plot of Loyalty*

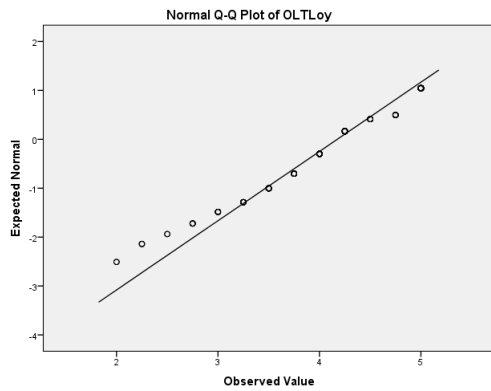


Figure F7. Normal Q-Q Plot of Joy

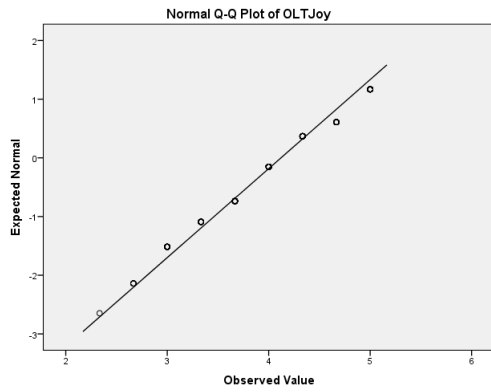


Figure F8. Normal Q-Q Plot, Histogram, Boxplot of Anger

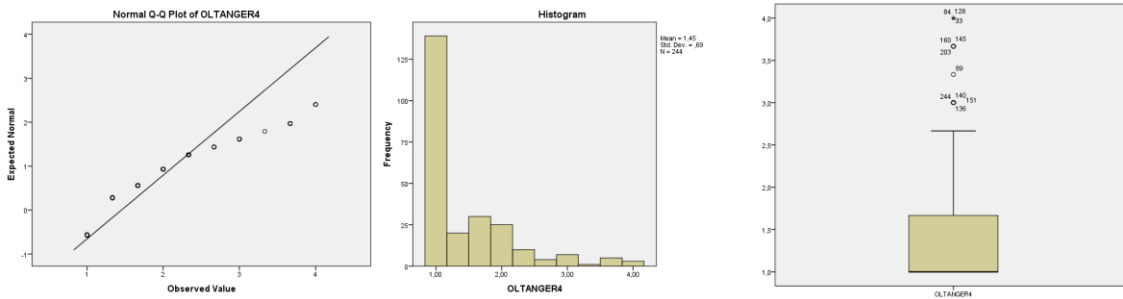
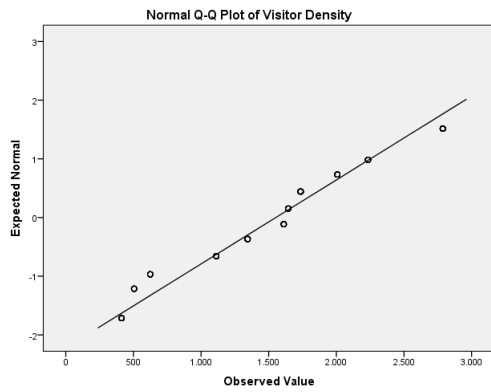


Figure F9. Normal Q-Q Plot of Visitor Density



Appendix G. Linearity and Homoscedasticity

Figure G1. *Normal P-P Plot and Scatterplot of Crowding and Satisfaction*

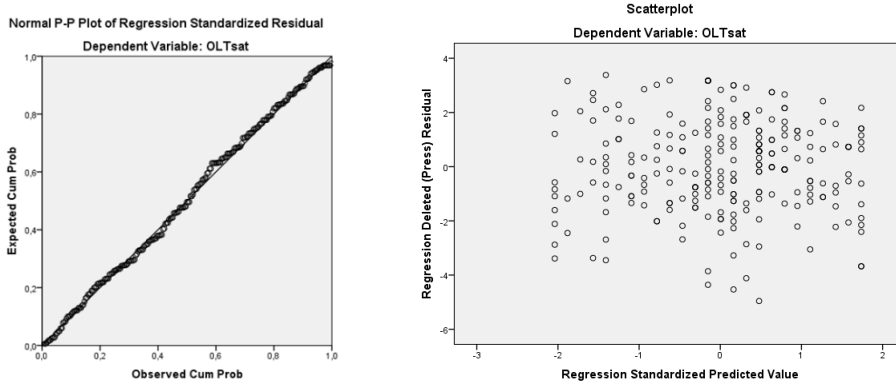


Figure G2. *Normal P-P Plot and Scatterplot of Crowding and Loyalty*

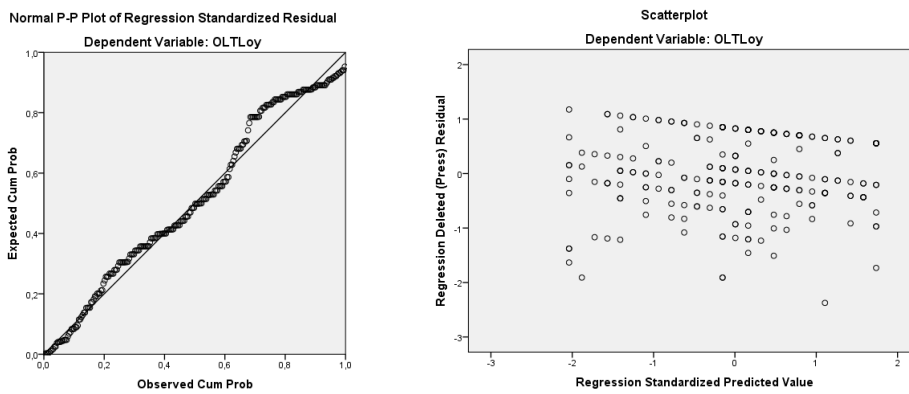


Figure G3. *Normal P-P Plot and Scatterplot of Crowding and Joy*

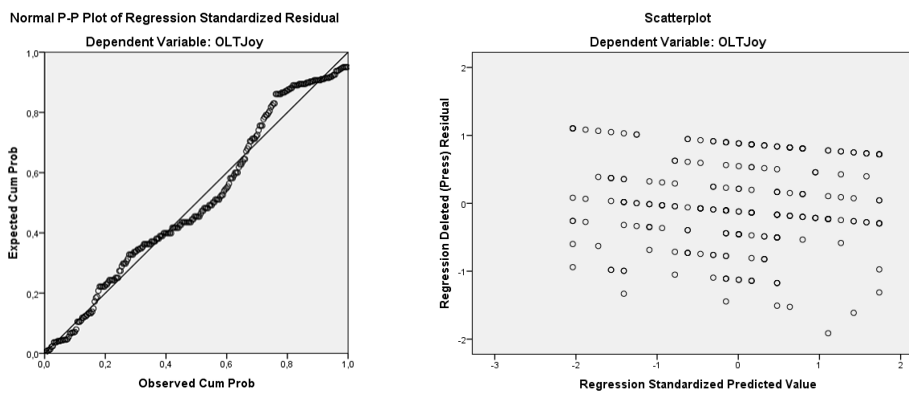


Figure G4. Normal P-P Plot and Scatterplot of Crowding and Anger

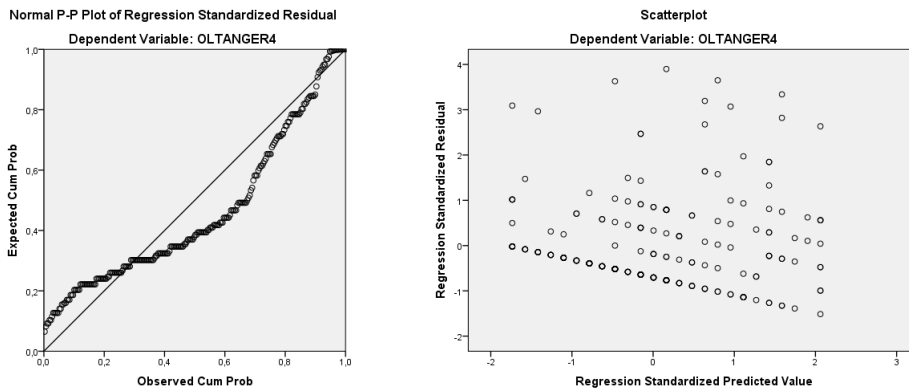


Figure G5. Normal P-P Plot and Scatterplot of Joy and Satisfaction

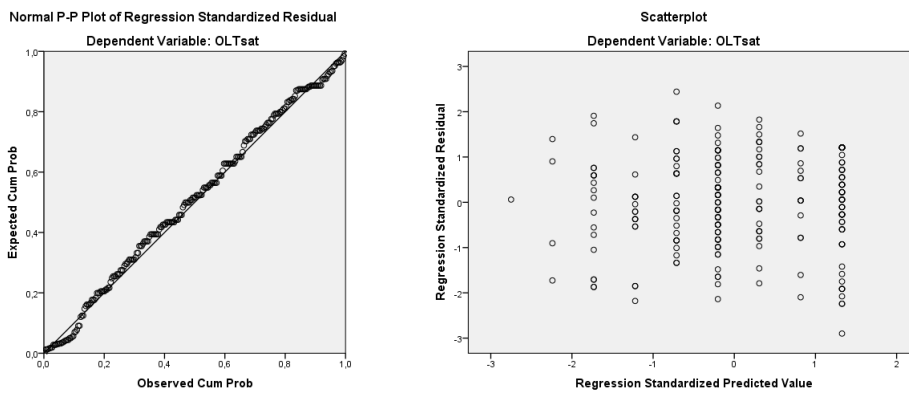


Figure G6. Normal P-P Plot and Scatterplot of Anger and Satisfaction

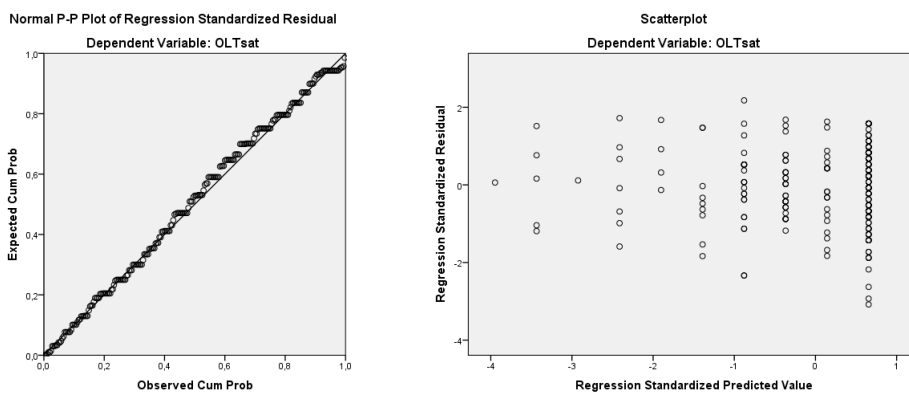


Figure G7. Normal P-P Plot and Scatterplot of Satisfaction and Loyalty

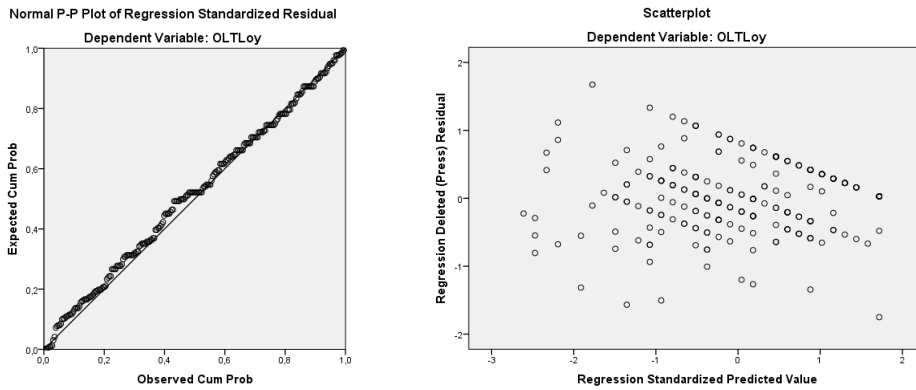


Figure G8. Normal P-P Plot and Scatterplot of Acceptability of Wait and Satisfaction

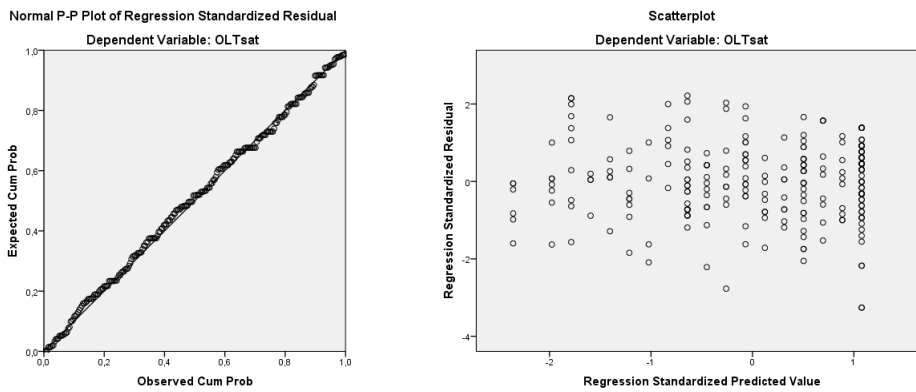


Figure G9. Normal P-P Plot and Scatterplot of Acceptability of Wait and Loyalty

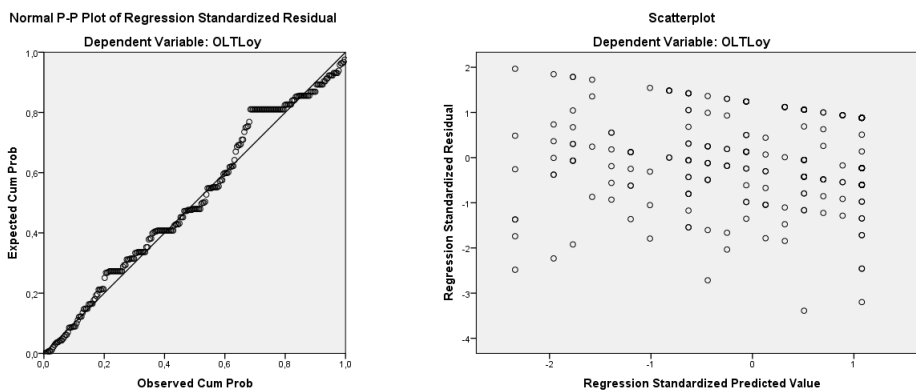


Figure G10. Normal P-P Plot and Scatterplot of Tolerance for Crowding and Crowding

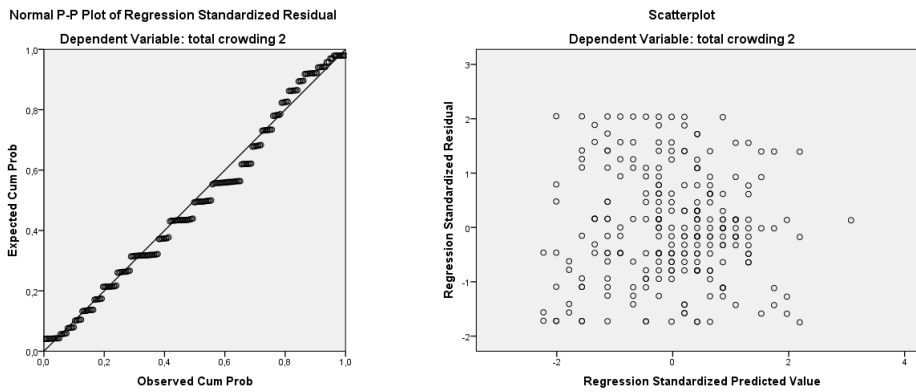


Figure G11. Normal P-P Plot and Scatterplot of Tolerance for Crowding and Satisfaction

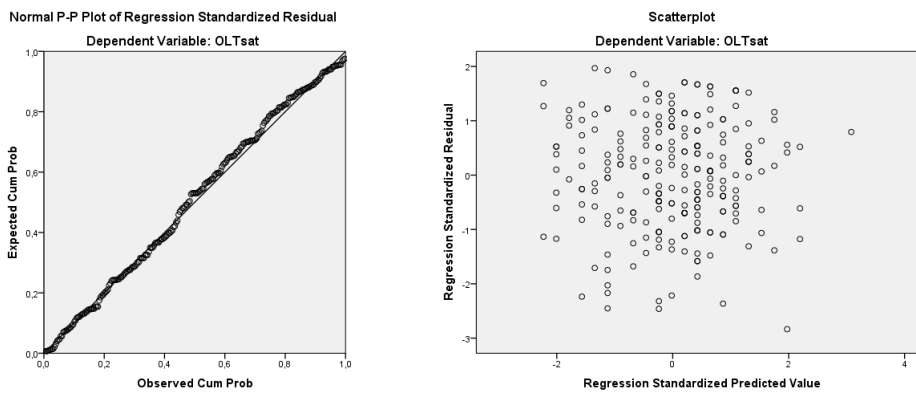


Figure G12. Normal P-P Plot and Scatterplot of Prior Expectations of Crowding and Crowding

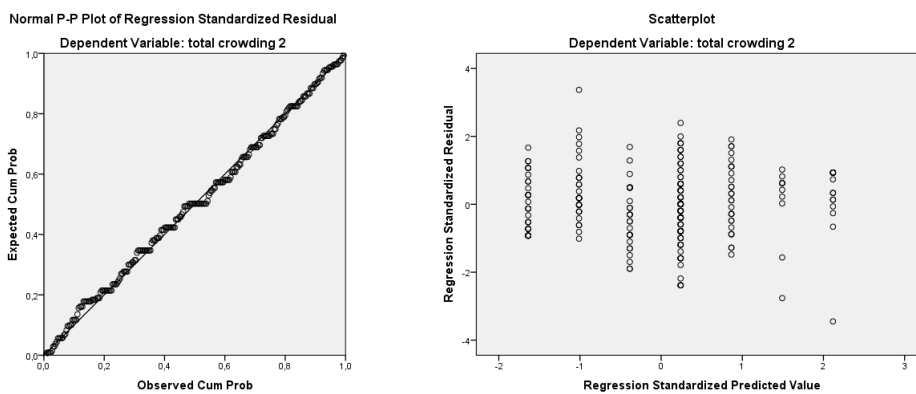


Figure G13. Normal P-P Plot and Scatterplot of Prior Expectations of Crowding and Satisfaction

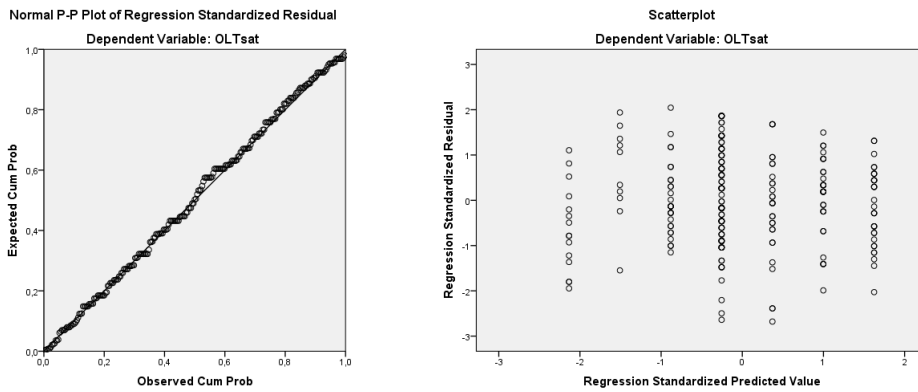


Figure G14. Normal P-P Plot and Scatterplot of Visitor Density and Crowding

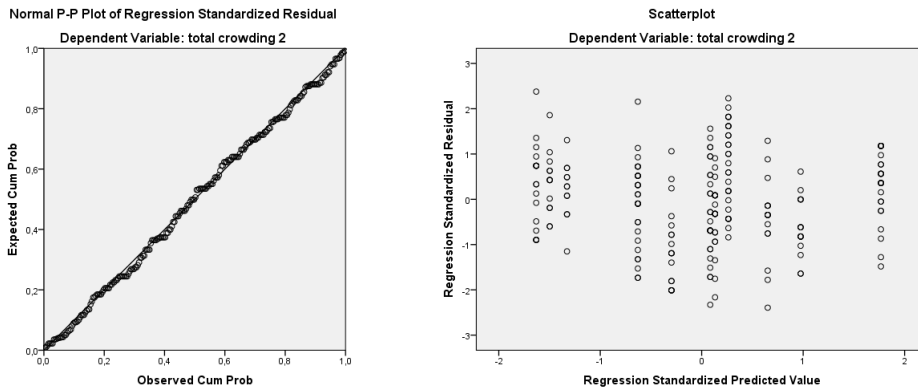


Figure G15. Normal P-P Plot and Scatterplot of Visitor Density and Satisfaction

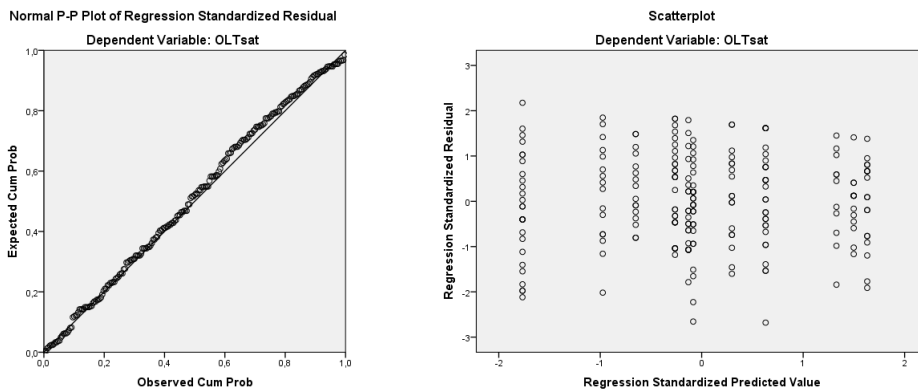


Figure G16. Normal P-P Plot and Scatterplot of Visitor Density and Prior Expectations of Crowding

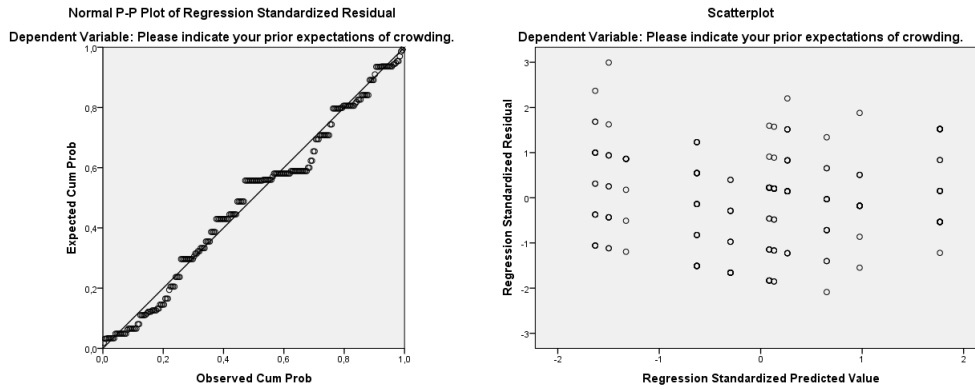
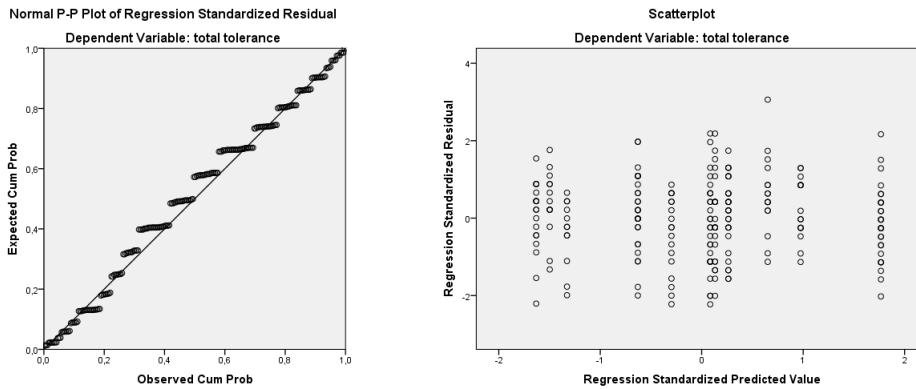


Figure G17. Normal P-P Plot and Scatterplot of Visitor Density and Tolerance for Crowding



Appendix H. Mediation Model B split into Two Mediation Analysis with One Mediator

Table H1

Joy as Mediator

Antecedent		Consequent						
		Joy			Satisfaction			
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	
Crowding	<i>a</i>	-.06	.03	< .05	<i>c'</i>	-.25	.07	< .001
Joy		---	---	---	<i>b</i>	1.32	.16	< .001
Constant	<i>i</i> ₁	4.35	.11	< .001	<i>i</i> ₂	3.41	.76	< .001
$R^2 = .02$ $F(1,240) = 4.28, p < .05$				$R^2 = .32$ $F(2,239) = 51.58, p < .001$				

^a*n* = 242

Table H2

Anger as Mediator

Antecedent		Consequent						
		Anger			Satisfaction			
		Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>	
Crowding	<i>a</i>	.15	.03	< .001	<i>c'</i>	-.23	.07	< .01
Anger		---	---	---	<i>b</i>	-.80	.17	< .001
Constant	<i>i</i> ₁	.88	.10	< .001	<i>i</i> ₂	9.93	.30	< .001
$R^2 = .13$ $F(1,237) = 28.15, p < .001$				$R^2 = .17$ $F(2,236) = 24.01, p < .001$				

^a*n* = 239

Appendix I. Simple Moderation Analyses Model D

Table I1

Model D Prior Expectations as Moderator and Satisfaction as Dependent Variable

		Coeff.	SE	t	p
Intercept	i_1	8.02	.13	63.62	< .001
Crowding	b_1	-.21	.09	-2.46	< .05
Prior Expectations	b_2	-.17	.08	-2.09	< .05
Crowding × Prior Expectations	b_3	-.06	.04	-1.65	.10
$R^2 = .12, MSE = 2.86$					
$F(3,239) = 10.15, p < .001$					

^a $n = 243$

Table I2

Model D Tolerance as Moderator and Satisfaction as Dependent Variable

		Coeff.	SE	t	p
Intercept	i_1	7.92	.11	72.62	< .001
Crowding	b_1	-.34	.07	-4.83	< .001
Tolerance	b_2	.28	.10	2.68	< .01
Crowding × Tolerance	b_3	.02	.05	.33	.77
$R^2 = .12, MSE = 2.85$					
$F(3,239) = 10.75, p < .001$					

^a $n = 222$

Appendix J. Additional Simple Moderation Analyses (mean centered)

Table J1

Additional Analysis: Prior Expectations as Moderator and Crowding as Dependent Variable

		Coeff.	SE	t	p
Intercept	i_1	3.65	.08	47.26	< .001
Visitor Density	b_1	.001	.00	8.68	< .001
Prior Expectations	b_2	.43	.05	8.02	.32
Visitor Density × Prior Expectations	b_3	.0002	.00	2.70	< .01
$R^2 = .58, MSE = 1.02$					
$F(3,226) = 127.49, p < .001$					

^a $n = 230$

Table J2

Model D Tolerance as Moderator and Satisfaction as Dependent Variable

		Coeff.	SE	t	p
Intercept	i_1	3.72	.08	47.58	< .001
Visitor Density	b_1	.001	.00	14.44	< .001
Tolerance	b_2	.01	.08	.13	.90
Visitor Density × Tolerance	b_3	-.0003	.00	-3.09	< .01
$R^2 = .43, MSE = 1.39$					
$F(3,226) = 73.81, p < .001$					

^a $n = 230$

Appendix K. Output Johnson-Neyman Technique

Figure K1. *Johnson-Neyman Technique Interaction of Tolerance for Crowding and Visitor Density*

```

***** JOHNSON-NEYMAN TECHNIQUE *****

Moderator value(s) defining Johnson-Neyman significance region(s)
      Value      % below      % above
      6,3004      99,5652      ,4348

Conditional effect of X on Y at values of the moderator (M)
      TToleran      Effect      se      t      p      LLCI      ULCI
      1,0000      ,0022      ,0003      8,1897      ,0000      ,0017      ,0027
      1,3000      ,0021      ,0002      8,7408      ,0000      ,0016      ,0026
      1,6000      ,0020      ,0002      9,4064      ,0000      ,0016      ,0024
      1,9000      ,0019      ,0002     10,2145      ,0000      ,0016      ,0023
      2,2000      ,0018      ,0002     11,1913      ,0000      ,0015      ,0022
      2,5000      ,0017      ,0001     12,3382      ,0000      ,0015      ,0020
      2,8000      ,0016      ,0001     13,5692      ,0000      ,0014      ,0019
      3,1000      ,0016      ,0001     14,5837      ,0000      ,0013      ,0018
      3,4000      ,0015      ,0001     14,7986      ,0000      ,0013      ,0017
      3,7000      ,0014      ,0001     13,7485      ,0000      ,0012      ,0016
      4,0000      ,0013      ,0001     11,7350      ,0000      ,0011      ,0015
      4,3000      ,0012      ,0001      9,5113      ,0000      ,0009      ,0014
      4,6000      ,0011      ,0001      7,5512      ,0000      ,0008      ,0014
      4,9000      ,0010      ,0002      5,9692      ,0000      ,0007      ,0013
      5,2000      ,0009      ,0002      4,7243      ,0000      ,0005      ,0013
      5,5000      ,0008      ,0002      3,7432      ,0002      ,0004      ,0013
      5,8000      ,0007      ,0002      2,9611      ,0034      ,0002      ,0012
      6,1000      ,0006      ,0003      2,3284      ,0208      ,0001      ,0012
      6,3004      ,0006      ,0003      1,9705      ,0500      ,0000      ,0012
      6,4000      ,0005      ,0003      1,8087      ,0718      ,0000      ,0011
      6,7000      ,0005      ,0003      1,3758      ,1703      -,0002      ,0011
      7,0000      ,0004      ,0004      1,0104      ,3134      -,0003      ,0011

*****
    
```