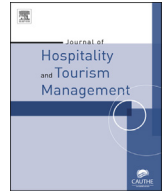




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## The impact of perceived crowding on customer satisfaction



Anita Zehrer\*, Frieda Raich

MCI Management Center Innsbruck, Austria

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### ABSTRACT

*Purpose:* The purpose of this paper is to develop and test an explanatory model of how perceived crowding and coping behavior impacts upon customer satisfaction. The paper contributes to the service management literature by; 1) identifying key factors impacting crowding perception in a winter sport outdoor setting; 2) highlighting its influence on customer satisfaction; and 3) advocating the need for winter destination managers to overcome perceived crowding.

*Design/methodology/approach:* The paper applied a quantitative methodology to explore the relationship between customer demographics, coping mechanisms and customer satisfaction. This data is utilized to highlight management issues to overcome perceived crowding.

*Findings:* The theoretically developed and empirically tested model proves that perceived crowding in winter sport settings is influenced by a number of different factors, such as a customer's demography. Perceived crowding leads to coping behavior that in turn increases the crowding perception of affected people. Perceived crowding and coping behavior both negatively influence customer satisfaction in a winter outdoor setting.

*Research limitations/implications:* The most significant limitation of the paper are the non-random sampling approach, the rather small sample size, the selected factors in the presented model, as well as the nature of the services (outdoor experiences) explored in this paper.

*Originality/value:* The paper is the first to explore the constructs of crowding, coping behavior and visitor satisfaction for a winter sports outdoor setting. Results show that crowding is an important construct for service sector managers to recognize and manage in order to overcome an increase in dissatisfied visitors.

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### 1. Introduction

Perceived crowding is the subjective evaluation of density levels in a specific surrounding (Shelby & Heberlein, 1984) and is usually defined as a negative assessment of visitor density within a given area (Graefe, Vaske, & Kuss, 1984). Loo's (1974) and Shelby's (1980) early studies show that an increase in the amount of encounters influences peoples' perceptions, and in turns their behavior. Research suggests that crowding issues arise when a large number of people are gathered together, and the usage of environmental and/or social resources exceeds the limit by physical environment (Lee & Graefe, 2003). In this case, visitors perceive the density of people in the place as too high and feel the

negative effects of crowding, which might result in a lower level of customer satisfaction (Buckley, 2009; Ryan & Cessford, 2003; Saveriadades, 2000).

Satisfaction can be approached by expectancy theory which suggests previous experiences influence future behavioral outcomes, and this has largely been supported by empirical studies (Lawler, 1973; Oliver, 2010; Parasuraman, Zeithaml, & Berry, 1985; Pizam & Milman, 1993; Yüksel & Yüksel, 2001). In essence, at the core of the theory is the cognitive process of how an individual processes to select a specific behavior option over another on the basis of his/her expectations (Vroom, 1964). According to Oliver's (1980) expectancy–disconfirmation paradigm (EDP) one of three outcomes will occur: a) confirmation, which emerges when the actual experience matches expectations; b) negative disconfirmation, which develops when the actual experience falls short of expectations; and c) positive disconfirmation, which occurs when the actual experience exceeds expectations (Oliver, 1980). The EDP is

\* Corresponding author.  
E-mail address: [anita.zehrer@mci.edu](mailto:anita.zehrer@mci.edu) (A. Zehrer).

one of the most frequently cited frameworks to understand behavioral intentions of consumers (Reimann, Lunemann, & Chase, 2008; Schoefer, 2010; Yüksel & Yüksel, 2001). Service providers rely on positive disconfirmation which usually produces satisfied consumers, as high satisfaction levels greatly correlate with the firm's financial results (Olsen, Witell, & Gustafsson, 2014).

So far research on crowding mainly focused on retail and shopping (Li, Kim, & Lee, 2009), festivals (Kim, Lee, & Sirgy, 2016), urban areas (Popp, 2012; Sun & Budruk, 2015), and tourism sites (Jin & Pearce, 2011). The research reveals mixed results on the effects of crowding on behavioral outcomes (Kim, Cha, Knutson, & Beck, 2011; Li et al., 2009). There is also a body of literature on recreation conflicts that result from crowding in outdoor settings, particularly national parks (Kainzinger, Burns, & Arnberger, 2015; Manning, Lawson, & Valliere, 2009; Moyle & Croy, 2007; Mudiyansele & Rathnayake, 2015), since crowding is considered as the most direct social impact on outdoor recreation (Arnberger & Mann, 2008; Van Riper, Manning, & Reigner, 2010). Conflict occurs when the interaction leads to negative outcomes for at least some of the participants (Owens, 1985).

A number of frameworks have been developed in outdoor recreation literature to guide management of crowding by means of measurable indicators (Manning, 2007). According to Manning (2000), crowding can be mediated by characteristics of respondents or the context of the situation and thus have to be specific to the situation under study by focusing on the respective cause of perceived crowding. Knowledge on outdoor user interaction enhances the positive and ameliorates the negative effects (Carothers, Vaske, & Donnelly, 2001; Wang & Dawson, 2005). Frameworks in outdoor settings include Limits of Acceptable Change (LAC) (Stankey et al., 1985), Visitor Impact Management (VIM) (Graefe, Kuss, & Vaske, 1990), and Visitor Experience and Resource Protection (VERP) (Manning, 2001). All of these frameworks rely on indicators of resource conditions and the quality of the visitor experience (Manning, 2004; 2007). However, we find that the body of literature on outdoor settings is conceptually underdeveloped and there has been no study focusing on a winter sport outdoor setting, such as a ski area.

Although there is no international statistics on mountain tourism, estimates show that mountain tourism is one the major forms of the leisure tourism (Keller, 2014; Minciu, Lefter, Sztruten, & Busuioc, 2009). Major ski resorts are located mostly in the various European countries and offer symbolic physical and non-physical features that may influence the visitor experience (Keller, 2014; Silva, Kastenholz, & Abrantes, 2013). In a winter holiday setting, people may have multiple expectations of outdoor recreational activities, such as solitude, excitement, or adventure (Lee & Graefe, 2003); the fulfillment of these expectations is impacted positively or negatively by crowding effects. However, there has been very little research conducted that explores the relationship between perceived crowding and visitor satisfaction, and how this is mediated through coping behavior in the context of outdoor winter sports settings, which is one of the contributions of the study.

The study aims to reveal the interrelationships among perceived crowding, customer satisfaction and coping mechanisms in an outdoor winter sport setting and poses the following research questions:

**RQ1.** How do age, gender and frequency of travel impact on perceived crowding?

**RQ2.** How does perceived crowding affect customer satisfaction?

**RQ3.** How does coping behavior mediate between perceived crowding and customer satisfaction?

## 2. Literature review and hypothesis development

### 2.1. Disciplines and foundations of crowding

As a theoretical approach to understanding the topic under study, we discuss the *reactance theory* as the main foundation of crowding. The reactance theory describes a motivational reaction of people that threaten specific behavioral freedoms (Brehm, 1966). There are three underlying models of reactance theory that are usually used to understand crowding: Brehm's (1966) *behavioral constraint model* states that there is a basic desire among human beings to maintain their behavioral freedom. According to this model, a certain amount of people will be evaluated as excessive and hence result in the perception of crowding for a setting when one's desired actions are restricted or made impossible because of the presence of other people. The main argument of the *overload model* by Altman (1975) is that crowding results when one's mental ability is unable to deal with all the impinging environmental stimuli. This model argues that crowding is an outcome of one's failure to maintain a desired level of social interactions through means like personal space and territoriality. Manning's (1970) *ecological model* has been used to explain human crowding.

According to literature, the three conceptual models can be subsumed under the concept of control (Averill, 1973). Physical, social, and personal factors can modify an individual's perceived control without any variation in density. A logical conclusion from this argument is that for a fixed density level, perceived crowding can vary between situations and persons (Hui & Bateson, 1990).

### 2.2. Definition and concept of perceived crowding

It has been reported that the concept of perceived crowding is a multiple dimensional construct created from either human or spatial density (Machleit, Kellaris, & Eroglu, 2000). The number of nonhuman elements in an environment and their relationships to each define the extent of spatial crowding perceived by individuals, while the human dimension of crowding concerns the number of individuals as well as the rate and extent of social interaction among individuals in a given environmental setting (Machleit, Eroglu, & Mantel, 2000). This paper focuses on perceived crowding created from human density. *Perceived human crowding* is thus defined as "the maximum number of people who can use a site without an unacceptable alteration in the physical environment and the social, cultural and economic fabric of the destination and without an unacceptable decline in the quality of the experience gained by visitors" (Wall & Mathieson, 2006, p. 33). Further, drawing on expectancy theory, Shelby and Heberlein (1984) define crowding as the individual's perceived evaluation of density levels in a specific physical environment. Crowding issues arise when the usage of social resources in a destination exceeds its norms (Jurado, Damian, & Fernández-Morales, 2013; Lee & Graefe, 2003) and negatively impacts on visitors' experiences (Patterson & Hammitt, 1990; Shelby, Vaske, & Heberlein, 1989). "Perceived crowding combines descriptive information (the density or encounter level experienced by the individual) with evaluative information (the individual's negative evaluation of that density or encounter level)" (Vaske & Donnelly, 2002, p. 256).

The underpinning concept related to perceived crowding is *carrying capacity*, which consists of *natural*, *economic* and *social* carrying capacity (Batta, 2000). *Natural carrying capacity* is described as physical carrying capacity, expressed in number of people per square hectare of land and is reached when all available facilities and infrastructure are overcrowded (Roe, Leader-Williams, & Dalal-Clayton, 1997). However *natural carrying capacity* can also be expressed through the ecological carrying capacity approach, as

the balance between the numbers of tourists an environment can accommodate without causing any harm towards its natural establishment (Coccosis & Mexa, 2004).

*Economic carrying capacity* can be described as the number of tourists a destination can tolerate and absorb before local communities experience economic stress (O'Reilly, 1986; Swarbrooke, 1999). Reaching the thresholds of economic carrying capacity is defined by the destination's dependency upon the tourism industry. Research on tourism in Venice, Italy and Cambridge, UK (Pedrazzini & Akiyama, 2011) has described the 'crowding out' phenomenon, which is the moment when centrally located land becomes too expensive, and congestion and pollution arise due to increased tourism activity, and thus local families and firms are forced to move to the outskirts of the cities (Pedrazzini & Akiyama, 2011). Studies on carrying capacity are still applied in nature and wilderness parks (Prato, 2009), but are also discussed for festivals (Lee & Graefe, 2003), restaurants (Tse, Sin, & Yim, 2002), and in coastal tourism destinations (Jurado et al., 2013; Jurado et al., 2012; Saveriades, 2000; Szuster, Needha, & McClure, 2011; Tarrant & English, 1996). However, the specific context of outdoor ski resorts has not yet been researched.

*Social carrying capacity* aims to assess and trace tourists experiences while visiting an area, as well as the local community's ability to tolerate the consequences caused by tourists' activities (Bhattacharya, 2005; Saveriades, 2000; Shackley, 1996; Wahab & Pigram, 1997). The first studies to evaluate *social carrying capacity* examined nature parks (Stankey & McCool, 1989). Later the concept was applied in behavioral psychology (Manning, Valliere, & Wang, 1999) where it has been defined as a "psychological state characterized by stress and having motivational properties" (Bell, Fisher, Baum, & Greene, 1990, p. 304). Social psychology literature shows that if levels of crowding are perceived as too high, that it has effects on cognitive control, behavior and affective responses in and after those situations (Langer & Saegert, 1977). Negative behavioral consequences in relation to high levels of perceived crowding include people's falling levels of tolerance for frustration (Sherrod, 1974). Also, stress levels are increased when visitors fail to accomplish their intended goals of recreating, relaxing and socializing due to external factors (Baum & Paulus, 1987; Gramann, 1982; Schmidt & Keating, 1979) As a consequence, perceived crowding reduces the quality of a visitor's perceived service experience (Buckley, 2009; Marion & Reid, 2007; Neuts & Nijkamp, 2012; Saveriades, 2000).

### 2.3. Influencing factors on perceived crowding

Age and gender, as well as whether visitors are first timers or repeat visitors, have been determined to influence visitor perceptions of crowding (Absher & Lee, 1981; Eroglu, Machleit, & Barr, 2005; Fleishman, Feitelson, & Salomon, 2004; Jurado et al., 2013). There is some evidence from psychological and social research that different *age groups* have distinct needs for physical space and are a predictor for perceptions of crowding (Cohen, 1992; Golant, 1983). Age, thus has been studied in a variety of studies, and authors agree that older people are less negatively impacted by crowding than younger visitors (Fleishman et al., 2004). Golant (1983) found that younger people generally require more physical space than older people. There is also evidence that the younger generation prefers less developed environments for recreation (Cohen, 1992). Vovsha et al. (2014) investigate crowding behavior of train riders and found that older passengers are more adverse towards crowding than younger riders when the probability of acquiring a seat is low, although their general travel time appreciation is lower when seat availability is high. However, to our knowledge, the factor age on perceived crowding has not yet been studied in a winter sport

outdoor setting.

Other studies showed that there are *gender differences* in crowding perception (Alexander et al., 2015; Eroglu & Machleit, 1990; Eroglu et al., 2005; Freedman, Levy, Buchanan, & Price, 1972; Machleit et al., 2000). The concept of gender-role identification is generally considered to be a major factor in the development of behavioral differences (Putrevu, 2001; Yildirim & Akalin-Baskaya, 2007). For instance, gender differences were found with men reporting higher crowding tolerances than women under high-density conditions (Eroglu & Machleit, 1990; Yildirim & Akalin-Baskaya, 2007). Sinha and Mukherjee (1996) showed that in stores, females had larger personal space requirements and a decreased tolerance for crowding. On the contrary, Stokols, Rall, Pinner, and Schopler, (1973) and Evans, Saegert, and Harris (2001) stated that males perceive crowding more and are affected more negatively than females. Although studies show differing results, altogether, females tend to be more critical than males about crowding. This research studies how gender impacts on perceived crowding in a winter sport outdoor setting.

Further, *repeat visitors* seem to perceive crowding differently, since they know what to expect in contrast to a first time visitor. Following the theoretical model developed by Parasuraman et al. (1985) on the formation of consumer expectations influencing how services are perceived, it can be said that consumer's experiences influence the expectations they form, as well as their post-purchase behavior. For instance, Avila-Foucat, Sánchez Vargas, Frisch Jordan, and Ramírez Flores, (2013) examined the influence of crowding on vessels on the probability of tourists returning for whale watching in Mexico and revealed that crowding negatively affected the probability of repeat visitation. In the field of tourism, Lam and Hsu (2006), Petrick, Morais, and Norman (2001), and earlier Sonmez and Graefe (1998), Mazursky (1989) and Perdue (1985), all demonstrated a positive and significant relationship between the frequency of past visits to the destination and repeat visit behavior. The impact of perceived crowding on repeat visitation of a winter sport destination has not yet been researched.

### 2.4. Coping behavior strategies as a result of perceived crowding and their impact on visitor satisfaction

The growing role of service experiences on *customer satisfaction*, and thus business success, highlights the importance of research that assists managers in describing and improving service experiences. Customer satisfaction can be described as perceived service quality, and results from the comparison of expected and experienced quality (Grönroos, 2007). Whereas, experienced quality is the outcome of technical and functional quality, expected quality arises from factors such as marketing communication, word of mouth, price, customers' prior experiences and customers' needs and values. As Coye states, "consumers of services have expectations about what they will receive from the delivery system. These expectations are beliefs about future events which, when compared with the perceived actual service delivered, are presumed to influence satisfaction and assessments of overall service quality" (2004, p. 54). Hence, customer satisfaction is the basis for any service firm's success (Chung-Herrera, Goldschmidt, & Hoffman, 2004; Coye, 2004; Cronin, Brady, & Hult, 2000; Edvardsson, 1992; Frost & Kumar, 2000; Grönroos, 2007; Hu, Kandampully, & Juwaheer, 2009; Kandampully & Suhartanto, 2000). Negative perceptions of crowding are likely to cause a decline in customer satisfaction (Allderedge, 1972; Morgan & Lok, 2000; Needham, Szuster, & Bell, 2011). In situations of crowding, it is the perceptions of individuals that evoke coping behaviors, bringing forward various strategies in order to avoid the effects of crowding (Andereck & Becker, 1993; Schmidt & Keating, 1979).

*Coping behavior* has been discussed formally in psychology since the 1960s; where it has been regarded as a process, and discussed in relation to finding ways to manage illnesses or long-term stressors and ego processes (Folkman & Lazarus, 1980; Lazarus, 1993) and external events, such as disasters (Anderson, 1977; Norris et al., 2002). Coping behavior encompasses all behavior used to protect one from harm in distressing situations (Pearlin & Schooler, 1978). Folkman and Lazarus (1980, p. 223) define it as “the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them”. In situations of high crowding, coping strategies are usually implemented when visitors do not enjoy the density of people of an area (Altman, 1975). The process of coping starts with the cognitive appraisal of the distressing event (Folkman & Lazarus, 1980). The anticipated outcome is “to regulate emotion, cognition, behavior, physiology and the environment in response to stressful events or circumstances” (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, p. 89).

Most studies distinguish between three approaches to coping mechanisms: emotion focused, problem focused, and appraisal focused (Juneja, 2004). First, *emotion focused* coping behavior takes place when individuals attempt to reduce their emotional distress and to find ways of mitigating or shielding themselves from the source of emotional distress (Lazarus & Folkman, 1984). Second, *problem focused* coping behavior aims at managing the external stressor. Individuals who apply this kind of behavior are likely to find a way of resolving the source of stress (Shelby & Heberlein, 1984). This coping mechanism is often applied when people perceive that the situation or relationships can be changed and improved (Folkman, 1984). Third, *appraisal focused* coping behavior includes the active coping strategies of individuals (Billings & Moos, 1981) that aim to change or adapt their way of thinking in order to cope with what they encounter.

It remains unclear however as to what level coping behavior can actually moderate between perceived crowding and visitor satisfaction. There are indications that recreationists, when feeling crowded, may find a way to enjoy their stay in a given area despite the perceived crowding, by mainly ignoring it and convincing themselves that crowding implies the popularity of a destination (Endler & Parker, 1990). Allderedge (1972) however, states that as the level of use of coping mechanisms in a particular tourist place raises, the visitor's satisfaction declines.

A variety of *coping mechanisms* have been identified as helpful for individuals to manage their process of coping. Lazarus (1993, p. 373) for example offers: “confrontation, getting distance, self-controlling, seeking social support, accepting responsibility, escape and avoid (hope it will go away), playful problem solving and positive reappraisals”. A recent study found that coping techniques such as “problem solving, seeking social support, distancing” (Saha, Huebner, Hills, Malone, & Valois, 2014, p. 243) have been particularly helpful in improving coping behavior. Manning and Valliere's study (2001) found strategies of coping behavior served as a mediator between overcrowded places and visitor satisfaction, with high visitor satisfaction despite high levels of crowding. Crowding coping behavior techniques such as “displacement, product shift and rationalization” (Manning & Valliere, 2001, p. 411) were found to be effective in helping to cope with crowding. Manning and Valliere (2001) describe displacement as a coping mechanism that involves spatial or temporal changes in use in order to respond to crowding. Visitors would move to less busy pockets within the area or stay within the area but use it at less busy times. Empirical examples that have been discussed include, using boats on rivers in Oregon at different times (Shelby, Bregenzer, & Johnson, 1988), and trying to avoid encounters with other visitors in wildland areas (Hammit &

Patterson, 1991). Visitors that are more tolerant of a higher use level will then replace the displaced visitors (Manning & Valliere, 2001).

Coping behavior in relation to *outdoor visitor satisfaction* has been often discussed in the area of leisure studies (i.e., Manning & Valliere, 2001; Manning et al., 1999; Johnson & Dawson, 2004). Some studies found that outdoor visitors show comparably high levels of crowding tolerance (Johnson & Dawson, 2004; Manning, 1999). Johnson and Dawson (2004, p. 281) for example reveal, “wilderness hikers develop complex and variable strategies of coping behavior to maintain multiple satisfactions”. Studies conducted in outdoor leisure settings have showed that those visitors who actively implemented coping behavior strategies, succeeded in sustaining higher levels of satisfaction than those who did not apply any strategies (Schuster & Hammit, 2000).

In summary, the following hypotheses (H1–H6) were developed from the literature review and will be tested in a winter outdoor setting:

- H1.** Demographics such as age, gender and number of visits impact perceived crowding.
- H2.** Demographics such as age, gender and number of visits impact coping behavior.
- H3.** Perceived crowding has a negative impact on customer satisfaction.
- H4.** Perceived crowding has an impact on coping behavior strategies of consumers.
- H5.** Perceived crowding and coping behavior are mutually influencing each other.
- H6.** Coping behavior has a positive impact on customer satisfaction.

The joint consideration of the hypotheses allows creating a model of crowding effects and customer satisfaction displaying potential connections between crucial crowding variables (Fig. 1). Perceived crowding stands in the center of the model and impacts on as well as is influenced by different variables.

The proposed model is intended to capture some important elements of the way perceived crowding and coping behavior can be understood and shows their impacts on customer satisfaction. It thus integrates the identified factors and deepens the insights of crowding effects in the leisure tourism sector; this substantiates the results of earlier studies embracing different crowding aspects in one study.

### 3. Methodology

#### 3.1. Research setting and survey

'Zell Arena Ski Resort' is situated in the Zillertal valley in Tyrol Austria, 40 km northeast of Innsbruck. Zillertal valley represents a combined skiing area consisting of six major ski resorts. The study was undertaken in Zell Arena Ski Resort in the winter season 2013. In order to assess the correlation between perceived crowding and customer satisfaction in Zell Arena ski resort this study applied a quantitative research method using surveying as a tool for assessing the variables and gathering statistical data. A quantitative research appeared to be an adequate approach to find out about interferences between the crowding variables; it was also obvious since the authors could rely on the findings of different studies in this field (Malhotra & Dash, 2011).

The questionnaire focused on the perception of crowdedness on ski slopes and expectations of the number of visitors in the ski resort. Questions related to waiting times at the cable car station,

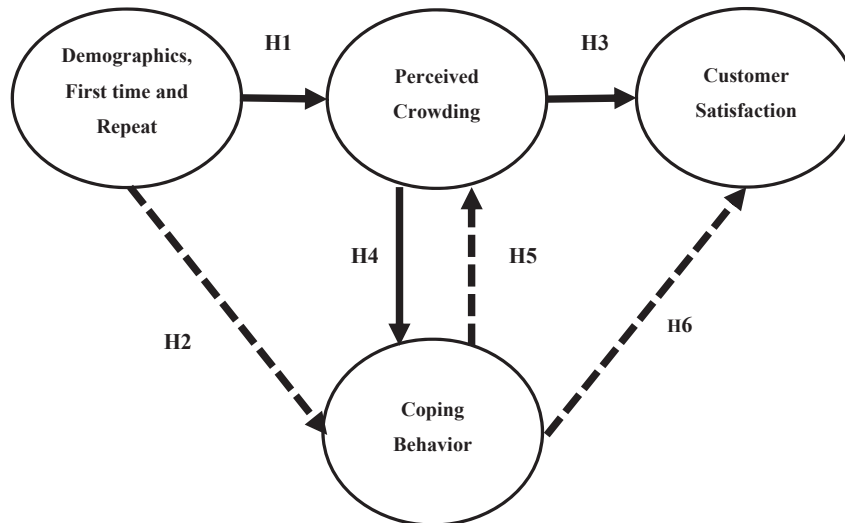


Fig. 1. Model on crowding effects and customer satisfaction.

and perceived levels of comfort and wellbeing on the slopes. Another set of questions targeted perceptions on customer satisfaction, to determine overall satisfaction and particularly satisfaction with skiing facilities. Respondents were also questioned about their future travel behavior, and their intentions to return and to recommend the destination.

The survey was conducted in person and face-to-face and benefitted from the advantages that come with this approach, such as being able to repeat questions, pointing out differences in meaning and helping to overcome language barriers (Berg & Lune, 2004). In total, 285 visitors took part in the survey. The survey was originally developed in English, and then translated into German and Russian versions as well. A survey pre-test was conducted two days prior at the neighboring ski resort Mayrhofen with ten participants. All questions were presented, however participants were informed that the survey was a pre-test. Responses then led to rephrasing of questions to be more precise and accurate, especially within the questionnaires in English and Russian. The survey conducted in German was left as set in the beginning.

Different types of questions were posed to the participants of the research such as dichotomous, multiple choice, semantic differential scale and open-ended. However, the semantic differential scale questions prevailed in the conducted survey and a five-point Likert scale (e.g. 1 = highest perception of crowding to 5 = lowest perception of crowding) was applied in order to measure the core variables.

An application named iSurvey on a tablet device was used to collect data. This technique allowed for a digital approach when interviewing with such advantages as decreasing the amount of printed material, faster proceeding of the recorded data and automatic storage of data to be analyzed later with SPSS. The interviews were conducted at various places within the ski resort, for example, at the entrances of valley, middle and peak station of the gondola lifts. Interviews were conducted throughout the day during the high season of February 2013, with some 20 to 25 participants to be surveyed per day. The interviewing took place at the bottom, middle and top station of the cable car, in the cabins while ascending and descending by the lift, and at the gathering places near mountain restaurants and bus stops. The participants were approached by the interviewees to take part in the surveying with an explanation of its purpose and length. At the end of the interview each participant received a gift provided by the cable car company.

The study applied a random sampling method. Respondents consisted of skiers and snowboarders; of these 47.7% were male and 51.9% female. Most of them belonged to the age groups 31–40 years (35.4%) and 41–50 years (24.9%). The majority came from Germany (40.4%), followed by Russia (17.5%), and the Netherlands (15.4%). The rest was distributed among 12 other countries representing the European Union and Eastern Europe. More than half of the participants visited Zell Arena with families (65.3%), with most of the others visiting with friends (34%).

#### 4. Results

Initial results show that visitors perceived crowding in the ski resort. When asked “how crowded do you perceive the ski slopes?” respondents replied on a 5-point Likert scale (too many, many, neutral, not many, few visitors) with 40.7% saying that they perceive “many” other visitors and 41.4% saying that they perceive “too many” other visitors.

56.7% of the respondents expected the actual number of the visitors they encountered during their stay, 10.9% anticipated fewer or far fewer other visitors, whereas 32.4% expected more or many more other visitors. 42.8% of the respondents perceived crowding as a problem, whereas 44% considered it as a sign of the resort’s popularity. The results show that prior expectation significantly influences the actual perception of crowded skiing (Kruskal-Wallis-Test, sig. 0.000).

Participants were asked “how comfortable do you feel on the slopes?”, with 42.1% of respondents said they felt uncomfortable or very uncomfortable. Only 15.4% felt comfortable or very comfortable. Some visitors confirmed they had coping strategies in place in order to avoid crowded slopes. 39.6% came to the ski slopes earlier or later, further 43.2% postponed or skipped their lunchtime. Some 16.8% of the respondents stated they had no particular coping strategies to avoid crowding, but would just try to enjoy the holiday.

##### 4.1. Influence of visitor demographics on crowding perception and satisfaction

Table 1 shows that crowding variables are significantly influenced through visitor characteristics such as gender, revisit versus first time visitor status, and age. The underlying test is the Mann-Whitney-U Test (non-parametric test).

**Table 1**

Influence of visitors' demographic factors on crowding perception and satisfaction - significance results of Mann-Whitney-U Test.

<b>Influence of gender</b>		
How comfortable do you feel on the slopes with the actual number of visitors?	sig. 0.000	<ul style="list-style-type: none"> <li>• 60.8% of women feel very uncomfortable or uncomfortable</li> <li>• 22.1% of men feel very uncomfortable or uncomfortable</li> </ul>
<b>Influence of first time or repeat visitors</b>		
How crowded do you perceive the ski slopes?	sig. 0.011	<ul style="list-style-type: none"> <li>• 85% of first time visitors perceive the ski slopes to be crowded/very crowded;</li> <li>• Also 78.2% of repeat visitors feel the same way.</li> </ul>
Expectations regarding the number of visitors prior to the arrival	sig. 0.000	<ul style="list-style-type: none"> <li>• First time visitors: <ul style="list-style-type: none"> <li>• 15% of the first time visitors expected fewer or far fewer numbers of other visitors;</li> <li>• For 68.8% expectations are met, in terms of expected visitor numbers.</li> </ul> </li> <li>• Repeat visitors: <ul style="list-style-type: none"> <li>• 4.5% of the repeat visitors expected fewer or far fewer numbers of other visitors;</li> <li>• For 38.2% the situation is just as anticipated;</li> <li>• 57.3% expected more or many more visitors.</li> </ul> </li> </ul>
How satisfied are you with your holidays?	sig. 0.016	<ul style="list-style-type: none"> <li>• 72.2% of first time visitors are satisfied or very satisfied with their holidays;</li> <li>• 81.8% of repeat visitors are satisfied or very satisfied with their holidays;</li> </ul>
How satisfied are you with the quality of the ski facilities?	sig. 0.027	<ul style="list-style-type: none"> <li>• 35.2% of first time visitors are satisfied or very satisfied with the quality of the ski facilities;</li> <li>• 44.6% of repeat visitors are satisfied or very satisfied with the quality of the ski facilities.</li> </ul>
<b>Influence of age</b>		
How crowded do you perceive the ski slopes?	sig. 0.025	<ul style="list-style-type: none"> <li>• 49.3% of the visitors, older than 38 years perceive the ski slopes as crowded;</li> <li>• Only 34% of the visitors younger than 38 years perceive crowding.</li> </ul>
Expectations regarding the number of visitors prior to the arrival	sig. 0.016	<ul style="list-style-type: none"> <li>• 24.5% of visitors younger than 38 years expected more or many more visitors;</li> <li>• 40.6% of visitors older than 38 stated that they would have expected more visitors.</li> </ul>
How do you feel about the waiting time at the cable car station?	sig. 0.012	<ul style="list-style-type: none"> <li>• 47.9% of visitors younger than 38 years perceive waiting times as long or too long;</li> <li>• 32.8% of visitors older than 38 years perceive waiting times as long or too long.</li> </ul>

#### 4.2. Influence of crowding perception on satisfaction

On average respondents were rather satisfied with their holiday (mean = 3.78; 1 = not satisfied at all and 5 = very satisfied). Visitors were overall only moderately satisfied with the quality of the ski facilities (mean = 3.17). The results showed that 18.9% indicated that it is unlikely that they will spend their winter holiday in the area again, 31.9% were indecisive. Further 40% stated that it is likely that they would revisit the place, 8.8% said they already planned to spend another winter holiday at the ski resort.

In terms of their intent to recommend the services they received, 22.1% state that it is unlikely that they would recommend the resort to friends/relatives, 8.4% don't know yet, 54% agreed they would be likely to, and 14.7% said yes. The crowding perceptions of visitors influence their satisfaction values. The Kruskal-Wallis-Test shows the following significant influences of crowding variables to satisfaction (Table 2).

#### 4.3. Influence of coping behavior mechanisms

When asked about coping mechanisms, 82.8% of the respondents stated they follow a coping technique, while 16.7% don't. Gender plays a role when it comes to coping behavior. While 77.9%

of male respondents applied a coping technique, the percentage of female respondents with coping techniques was higher at 87.8% (Pearson Chi-Square: sig. 0.026). The number of visits however, does not have any significant correlation with coping strategies (Pearson Chi-Square: sig. 0.277), neither does age (younger or older than 38 years; Pearson Chi-Square: sig. 0.092).

However, there is a significant correlation between crowding perception and coping behavior mechanisms (Pearson Chi-Square: sig. 0.003). The Mann-Whitney-U-Test shows a significant result (sig. 0.000), which might lead to the conclusion that coping techniques have an impact on crowding perception and intensifies the perception in terms of a reciprocal effect (see Table 3). The Mann-Whitney-U-Test also shows that coping techniques influence the guests' satisfaction, where those guests who do not apply coping techniques show a higher level of satisfaction.

## 5. Discussion

The aim of this paper was to theoretically develop and empirically test an explanatory model of perceived crowding and coping behavior and their impact upon visitor satisfaction. Within the context of a European outdoors winter sport setting, we showed that visitors start to feel uncomfortable and experience crowding

**Table 2**

Influence of crowding perception variables on satisfaction.

<b>How crowded do you perceive the ski slopes today?</b>		
How satisfied are you with your holidays?	sig. 0.000	<ul style="list-style-type: none"> <li>• 33.9% of the respondents who state that there are too many or many visitors on the ski slopes are not satisfied or state "it was ok";</li> <li>• Those who perceive not many visitors on the ski slopes state they are satisfied.</li> </ul>
How satisfied are you with the quality of the ski facilities?	sig. 0.000	<ul style="list-style-type: none"> <li>• 43.2% of the respondents who state that there are too many visitors on the ski slopes, are not satisfied at all or not satisfied;</li> <li>• Only 10% of respondents not perceiving too many visitors on the slopes are not satisfied at all or not satisfied.</li> </ul>
<b>How comfortable do you feel on the slopes with the actual number of visitors?</b>		
How satisfied are you with your holidays?	sig. 0.002	<ul style="list-style-type: none"> <li>• 22.7% of the respondents who state that they feel uncomfortable are not satisfied or state "it was ok";</li> <li>• From the respondents who state that they feel comfortable on the slopes, only 10.5% are not satisfied or state "it was ok".</li> </ul>
How satisfied are you with the quality of the ski facilities?	sig. 0.001	<ul style="list-style-type: none"> <li>• 71.4% of the respondents who state that they feel uncomfortable are not satisfied or state that the quality is ok (they are not satisfied/very satisfied);</li> <li>• This answer (not satisfied or "the quality is ok") is given by 42.1%, which feel comfortable on the slopes with the actual number of visitors. The rest is satisfied/very satisfied.</li> </ul>

**Table 3**  
Influence of coping behavior.

How crowded do you perceive the ski slopes?	sig. 0.000	<ul style="list-style-type: none"> <li>• 85.6% of respondents applying coping behavior techniques say that they perceive too many or many many visitors;</li> <li>• For those respondents without a coping behavior techniques the value amounts to 66.6%;</li> </ul>
How satisfied are you with your holidays?	sig. 0.006	<ul style="list-style-type: none"> <li>• 73.3% of respondents with coping behavior techniques are satisfied or very satisfied;</li> <li>• For those respondents without a coping behavior techniques the value amounts to 89.6%.</li> </ul>
How satisfied are you with the quality of the ski facilities?	sig. 0.000	<ul style="list-style-type: none"> <li>• 32.5% of respondents with coping behavior techniques are not satisfied at all or not satisfied with the quality of the ski facilities;</li> <li>• For those respondents without a coping behavior technique the value amounts to 6.2%.</li> </ul>

when certain levels of density on ski slopes are exceeded. Our study aimed to answer three research questions: How do age, gender and frequency of travel impact on perceived crowding? How does perceived crowding affect customer satisfaction? How does coping behavior mediate between perceived crowding and customer satisfaction? This part discussed the findings in the light of the above research questions.

Altogether, our results confirm [Shelby and Heberlein's \(1984\)](#) prior findings, showing that crowding is perceived subjectively and that perceived crowding is impacted by specific variables. However, there are differences to earlier studies regarding gender, repeat visitation dimension and age.

A visitor's age seems to be a significant predictor for perceptions of crowding ([Fleishman et al., 2004](#); [Jurado et al., 2013](#); [Rasoolimanesh, Jaafar, Marzuki, & Mohamad, 2016](#)). Our data shows, that both younger and older visitors perceive crowding. Prior research indicated that younger people are more susceptible towards crowding ([Fleishman et al., 2004](#); [Golant, 1983](#); [Jurado et al., 2013](#); [Rasoolimanesh et al., 2016](#)), since they require more physical space for their activities. In our case however older guests (38 years and over) significantly perceived the ski runs as crowded. This leads to the conclusion that the type of service offered influences the impact of age on perceptions of crowding.

In terms of gender we found that female visitors are much more uncomfortable with crowding than men, although male visitors do perceive the same levels of crowding. More often, it does not affect them to the same extent, and they still feel very comfortable with the situation. This confirms prior studies that found overall females tend to be more critical than males about crowding ([Alexander et al., 2015](#); [Jin & Pearce, 2011](#); [Sinha & Mukherjee, 1996](#)).

We also demonstrated that *first time visitors* more often perceive higher levels of crowding. The number of first time respondents stating they perceived 'too many' people showed higher values than repeat visitors. This result clearly supports the discussed expectation-disconfirmation theory ([Parasuraman et al., 1985](#)). Repeat visitors know what to expect, whereas new visitors are overwhelmed, as they did not expect such high levels of crowding. Hence, with these results on influencing factors on perceived crowding we support H1, and state that demographics such as age and gender as well as the number of visits impact perceived crowding.

The next research question focused on how coping behavior mediates between perceived crowding and customer satisfaction. In terms of their application of *coping behavior mechanisms* the data revealed that some of the younger visitors do not apply coping strategies at all, whereas older visitors more often try to cope by skipping or postponing lunch. However, a significant difference between the age groups of below or above 38 years could not be found. Both males and females try to accommodate crowding and apply coping behaviors, whereas female guests apply adaptation strategies significantly more often than their male counterparts. Surprisingly, there are no significant differences in terms of coping techniques of first time and repeat visitors. One difference the data showed was that first time visitors would come early in the

morning to avoid the crowds. Consequently, we support H2 partly and state that gender impacts upon coping behavior, whereas age (younger or older than 38 years) and number of visits don't. Further research could reveal if there are differences between other age groups.

As regards the research question on how perceived crowding affects customer satisfaction, our analysis shows that perceived crowding has a significantly negative impact on *visitor's satisfaction* with their holidays in the area, as well as their satisfaction with the quality of the ski facilities. Hypothesis 3 can thus be confirmed. 91.5% of respondents stated that too many people were on the ski runs, and that they thus followed a *coping behavior* technique. 81% of those who stated that they perceived many visitors to be on the ski runs also applied a coping mechanism. Altogether, there is a significant relationship between perceived crowding and coping behavior techniques. Thus, H4 can be confirmed. Vice versa, coping behavior also shows a significant influence on crowding perception ([Table 3](#)), which confirms H5 and underlines a potential mutually reinforcing relationship. The hypothesis according to which coping behavior has a positive impact on customer satisfaction could not be confirmed. Instead, the data revealed that those visitors who apply coping techniques are significantly less satisfied with their holidays in the area, as well as with the quality of the ski facilities (see [Table 3](#)). Thus, H6 cannot be confirmed and has to be rejected.

## 6. Limitations

The paper has certain acknowledged limitations that need to be taken into account when considering the results of the study and its contributions to theory.

The most significant limitation is the use of a non-random sampling approach. Since it was difficult to use a probability technique at the winter sport destination due to accessibility, we used a convenience sample. However, despite the relative cost and time efforts for opportunity sampling, the method suffers from the inherent bias that the sample might not be representative of the population to be studied, which decreases our ability to generalise our findings to the population at large ([Farrokhi & Mahmoudi-Hamidabad, 2012](#)). Nonetheless, gender distribution, age and educational level for the respondents are congruent with previous research (e.g., [Alexander et al., 2015](#); [MacLean & Hamm, 2007](#)).

Second, the sample size was rather small and the responses are not normally distributed; thus non-parametric tests were used. It would have been beneficial to have larger sample sizes at hand.

Third, the selected factors in the presented model were those for which we found empirical evidence as well as analysis available in the literature. Certainly, many other factors could be included and equally justified. For example the discussion about attitudes as an important construct in the context of perception and behavior was not integrated. Nonetheless, the model may advance the discussion to include other explanatory variables that may impact perceived crowding and consumer satisfaction and provide a foundation for future qualitative and quantitative research.

Fourth, the services explored in this paper were experienced in

the outdoors; experiences with crowding indoors (i.e., retail, tourist attractions, museums) could have different impacts on visitor satisfaction and their management.

## 7. Conclusions

The purpose of the study was to develop and test and explanatory model of how perceived crowding impacts on customer satisfaction and what role coping behavior has. Our findings confirmed that crowding perception is very subjective. Older guests (38 years and over) perceive higher crowding than younger visitors; first time visitors perceive more crowding rather than repeat visitors. Moreover, women feel significantly much more uncomfortable on crowded ski slopes than men. Perceived crowding evokes coping mechanisms in some visitors, which in turn increases the crowding perception of affected people. In our case perceived crowding and the application of coping behavior techniques both negatively influence customer satisfaction. With these findings, the paper contributes to the service management literature by: 1) identifying key factors impacting crowding perception, such as age, gender and coping behavior in a winter outdoor setting; 2) highlighting its influence on customer satisfaction; and 3) advocating the need for service managers to pay attention to perceived crowding, a neglected antecedent of customer satisfaction.

This study is the first step toward exploring how crowding impacts on visitor satisfaction in an outdoor winter setting, and implies three different avenues for further research.

First, demographic factors, travel behavior and other contextual factors are likely to influence perceived crowding. This study was conducted within a specific contextual situation; it concentrated on crowding in an outdoor winter sport setting, and respondents came mostly from European countries, as well as Russia. It is likely that with a change in contextual factors, such as indoor settings, respondent origin, and different demographics, results might vary. Hence, further studies could replicate this study in different countries, and/or using specific cohorts, such as Generation Y, or senior travelers, since it would be interesting to see if different age groups show different crowding behavior.

Second, previous research has suggested that coping behavior moderates perceived crowding (Manning & Valliere, 2001). However this finding was not confirmed in this study. Further research could explore the prerequisites under which coping techniques influence customer satisfaction and also under which circumstances this does not hold to be true. Furthermore, research should also explore ways to positively influence coping behavior skills, such as through awareness and incentives. Likewise, it can be of interest to study standards and norms of perceived crowding, social interaction among visitors during a crowding period, or previous experiences with crowding, and integrate those within the concept of satisfaction or its components such as expectation, perception, or experience. This however might rather be done by using a qualitative research method, for example observation or guided interviews, or the combination of both.

Third, future research could focus on the enabler's perspective of services (Zehrer, Muskat, Muskat, 2014). This could include deeper investigation on the role of winter tourism operators, their awareness and management of visitor's perceived crowding and its relation to reduced overall satisfaction, as well as how perceived crowding is embedded in their customer orientation strategies. Questions remain open, for example, how tourism operators manage antecedents and consequences of negative crowding effect. The essential question is 'How to get customer oriented?' (e.g., Olsen et al., 2014). In terms of antecedents, research has showed that waiting times have significant negative influence on perceived

crowding (McGuire, Kimes, Lynn, Pullman, & Lloyd, 2010). Hence, waiting time and resulting perceived crowding while waiting would also be an interesting research avenue in a winter sport outdoor setting.

Future research is needed to address various key issues on crowding, and research avenues could consider the following propositions. Firstly, the replication of the study in different contextual settings, that is, in different countries, in indoor settings, or with different visitor profiles such as Generation Y. Secondly, studies could explore if and how marketing managers might be able to positively influence perceived crowding, for example, through expectation management or the active offering of coping techniques, that is, through price incentives. Thirdly, more theoretical work that explains perceived crowding and carrying capacity in outdoor settings is needed. The expectancy theory needs to be tested further and made use of more effectively in other studies. Finally, more effective and appropriate measurements of perceived crowding need to be developed. A multi-dimension instrument to measure a customer's complex experience may further contribute to our knowledge, given that alternative measurement approaches can result in significantly different estimates.

As regards the practical implications of our research, our results may be of interest from a planning and management perspective, and reveal potential approaches and avenues for outdoor recreation and visitor management. The findings show that perceived crowding and often also copying behavior have a negative impact on customer satisfaction. To remain competitive and successful, service providers therefore have to reduce and cope with perceived crowding, especially those providers which apply a quality strategy and do not want to engage in price reduction discussions. An essential prerequisite to govern perceived crowding is understanding customers and target groups. Although perceived crowding is a subjective feeling, several factors such as age, gender and other particularities of customers exert influence. Understanding these influences on crowding perceptions can help managers plan service capacities and usage time frames depending on the respective target group. Thus, more visitor management is deemed necessary.

Furthermore, perceived crowding needs to be considered along the whole service chain to limit its negative impact on customer satisfaction. A first essential step is thus the targeted influencing of customers' expectations. Wrong expectations may very quickly lead to negative crowding perception, and thus customer dissatisfaction. Service providers need to develop strategies to equalize streams of visitors in a pleasant and comfortable way. Such approaches impair the customers' ability to develop coping techniques him-/herself, which usually are perceived as a quality decrease. If, despite various provisions, crowding is perceived negatively, the service provider has to bring forward complaint measures, mechanisms and instruments to encourage customers to actively complain; only then can service providers react and work to raise customer satisfaction.

In order to counteract the crowding phenomenon, winter sport managers require a certain knowledge level of their different target markets. Hence, those winter sport settings aiming to attract as many visitors as possible to their area, should concentrate on those target markets which have a low crowding perception and behavior. Target groups which feel uncomfortable in cases of high density or crowding, could instead be attracted in the off-peak season. 12% of the visitors were repeat visitors, that is, they were already aware of the high visitor frequency in peak season. Thus, more than 80% were first time visitors, suggesting a role for management to raise awareness of the crowded ski area situation prior to the guests' visit.

The paper suggests that it is of high importance for marketing



managers to convey correct expectations to first time visitors with regards to crowding. Furthermore, management should develop strategies and measures to counteract the crowding perceptions of its visitors; such as construction measures, organizational coordination of actors, time-models, or by offering alternative packages.

Altogether, service providers should continue to monitor visitors' responses to crowding even if low levels of crowding are detected among large numbers of visitors.

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**Dr. Anita Zehrer** is Deputy Head at the School of Tourism and Leisure, MCI Management Center Innsbruck, Austria. Her research examines numerous services and

destination issues and has been accepted for publication in such outlets as the *Services Industries Journal*, *Managing Service Quality*, *Tourism Analysis*, and *Journal of Travel Research*. Recently, Anita's research has focused on the concept of service design and the field of social media. She currently serves on the Editorial Boards of *Journal of Travel Research*, *Journal of Vacation Marketing* and *Tourism Review*.

**Dr. Frieda Raich** has a background in management, marketing and corporate governance and holds a PhD from University of Innsbruck, Austria. Her research is in Destination Governance and Leadership Networks in Tourism Destinations. Frieda is affiliated with MCI Management Center Innsbruck, University of Innsbruck, Free University Bolzano and EURAC Bolzano, Italy.