Crowding and the tourist experience in an urban environment:
a structural equation modeling approach

Jeroen Bryon¹
Bart Neuts²

Abstract:
Carrying capacity is a multidimensional concept built upon the notion of sustainability. While an abundance of research has been conducted in the areas of ecological and economical sustainability, the socio-demographic component has received only minor attention until now. This paper tries to fill a void by examining the impact of other tourists on the tourist experience in the settings of an urban space. In the existing literature, the impact of use-level on experience has mainly been evaluated by use of the concept ‘crowding’, thereby implicitly assuming that the word holds a negative connotation. Crowding is seen as the crossing of a personal norm, automatically leading to negative feelings. This research however holds the position that crowding does not necessarily have to be intertwined with a diminishing tourist experience. First of all the concept of crowding is being related to a framework of variables thought to influence use-level perception by use of a structural equation modeling approach, leading to an improved crowding model. The results confirmed the largely psychological construction of the perception of crowding. The effect of other tourist’s behaviour, the attitude towards other cultures, the reason for travelling and the former travel experience seemed to have a much larger effect on the perceived use-level than the situational characteristics of the site. The influence of these last attributes could be called marginal at best and the number of other visitors on site in fact did not even show any significant impact, leading to the conclusion that quality is far more defining in the judgement of crowding than quantity. The relationship proved to be significantly negative, whereby the situation experienced would be evaluated less positive if a higher crowding level was perceived. However, this correlation could be mainly attributed to a difference between the preferred and the perceived use-level.

KEYWORDS: carrying capacity, crowding, tourist experience, use-level, sustainability

INTRODUCTION

Crowding is a psychological state, characterized by stress (Lee and Graefe 2003). It is usually defined as a negative evaluation of a certain use level (Cole and Steward 2002), which implies it is a typical example of the socio-demographic dimension of the carrying capacity concept. Indeed, carrying capacity can be defined as a certain optimal level above which further development will no longer generate strictly positive outcomes. The Priority Actions Programme/Regional Activity Centre (1997:5) uses the definition of the World Tourism Organization to define carrying capacity as “the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of visitors’ satisfaction”. Despite the latter dimension, few studies have taken into account the importance of crowding on the tourists’ experience. This is somewhat contrasting to the pile of studies focusing on the socio-demographic carrying capacity related to the tolerance level of the host community (see e.g. Bryon 2005; Gursoy and Rutherford 2004). Notable exceptions on the knowledge void on crowding impact are studies on the effects of crowding in wildlife settings (see e.g. Cole and Steward 2002; Patterson and Hammit 1990; Shelby, Vaske and Heberlein 1989; Steward and Cole 2001; Tarrant and English 1996) and, for urban environments, on city parks or special events (see e.g. Arnberger and Haider 2007; Hammit 2002; Lee and Graefe 2003; Westover and Collins 1987). Given the importance of urban tourism and the centrality of public space in the urban tourist experience, there is a need for a deeper understanding on the concept of crowding in urban destinations. To do so, a model of crowding perception will be developed and evaluated by a structural equation modeling approach.

¹ Assistant Professor Urban Tourism, K.U.Leuven (jeroen.bryon@ees.kuleuven.be)
² Doctoral student Flemish Centre for Tourism Policy Studies (bart.neuts@ees.kuleuven.be)
PUTTING CARRYING CAPACITY INTO PRACTICE: NORM THEORY

Norms and the return potential mode

Social and personal norms, as developed in the fields of sociology and social psychology, provide a useful framework for the analysis of acceptable use levels, thereby implying that certain segments of a society share standards to describe the acceptability of a myriad of situations (Donnelly, Vaske, Whittaker and Shelby 2000; Heywood and Murdock 2002; Manning, Valliere, Wang and Jacobi 1999; Patterson and Hammitt 1990; Vaske, Graefe, Shelby and Heberlein 1986). Norms must be seen as shared beliefs about how behaviour and conditions ought to be under specific circumstances (Heywood 1996, based on Parson). Social norms are standards, shared by different members of a social group and used to categorize a behaviour or environment as good or bad. Conversely, personal norms do not get internalized by all group members. Instead, these norms refer to the own expectations of an individual (Donnelly et al 2000).

The structural characteristics of norms can best be identified through use of the return potential model of Jackson (1965 in Vaske et al 1986), also known as the encounter norm curve (Figure 1). The horizontal axis of the curve is the behavioural dimension while the vertical axis stands for the evaluation of that behaviour, ranging from negative to positive. Three structural characteristics can be observed: the range of acceptable behaviour, the intensity of the norm, and the crystallization of the curve. The latter is related to the identification of a social norm based on the combination of personal norm curves and hence being a measure of the dispersion of individuals around the mean (Manning et al 1999). It should be noted that the shape of the encounter norm curve depends on the undertaken activity (Vaske et al 1986). E.g., it is possible that the encounter curve starts out negatively, only to reach a positive level of acceptability after a given number of encounters (Westover 1989).

Crowding can be thought of as the negative evaluation of use density (Patterson and Hammitt 1990). Hence crowding sets in when the minimal acceptable use level condition gets passed, implying a negative connotation of the word ‘crowding’ (Shelby, Vaske and Heberlein 1989): crowding originates when a personal norm gets violated.

Figure 1: Return potential model (Manning et al 1999, p.99)
Factors influencing the personal crowding norm

Three substantial factors play a role in the construction of the personal crowding norm (Kyle, Graefe, Manning and Bacon 2004). Firstly, the situational characteristics of the destination have to be taken into account. Although Shelby et al (1989:270) state that "one cannot simply count visitor numbers to make judgements because crowding is a social-psychological phenomenon that differs greatly from visitor density", Lee and Graefe (2003) and Vaske and Donnelly (2002) emphasize the necessity of use level in understanding the feeling of crowdedness. According to Shelby et al (1989) and Arnberger and Haider (2007) congestion varies with the time and season, the availability, the accessibility, and the type of usage – the latter can be defined in terms of the recreational activities, but also by the difference between excursionists and overnight visitors.3

Secondly, the characteristics of other tourists are relevant. The evaluation of encounters with other tourists depend on different characteristics of these 'others'. Yagi and Pearce (2007) highlight the importance of the nationality, compared to the origin of other tourists, concluding that Asian tourists seem to prefer visiting a place occupied by Western tourists, while Western visitors do not show a clear preference. Apart from origin, the behaviour of other tourists is quintessential. If these behaviours do not coincide with the own norms and values, this might lead to conflicts and irritation (Jacob and Schreyer 1980). Furthermore, the frequency and place of contact between people is possibly of importance4 (Lee and Graefe 2003; Patterson and Hammitt 1990; Vaske, Donnelly and Petruzzi 1996).

Thirdly, personal characteristics must be considered. These include nationality5 (see e.g. Bauer 2003; Gillis, Richard and Hagan 1986) and gender (see e.g. Baum and Paulus 1987). This difference could partially be explained by a difference in expectancies. Expectations are indeed another aspect of the personal characteristics that can influence the perception of crowding (Cole and Steward 2002; Lee and Graefe 2003). Expectations are influenced by past experiences with the destination as well as the frequency of visits to comparable sites. Frequent visitors will base their expectations on more accurate information with regard to use levels on the behaviour of other tourists. Because of this a violation of preferred use level will not necessarily lead to an infringement of the expectations and a feeling of crowdedness. Furthermore, it could be presumed that a more realistic image of the destination will result in a heightened feeling of control and predictability, which has a mediating influence in the perception of crowding (Hui and Bateson 1991; Kearsley and Coughlan 1999). A last aspect of personal characteristics are the motivations, which are also directly linked to the construction of expectations (Gnoth 1997). Knopf (1987) remarks that research pertaining the perception of the natural environment consistently proves that people with different motivations react differently on the same environmental characteristics. Motivation is a broad concept, which can be interpreted in different ways. Approaches of the concept can be as diverse as the experiential dimensions Cohen (1997) uses, compared to the strict definition of tourism as applied by the United Nations Conference on International Travel and Tourism (Dann 1981). Ashworth and Tunbridge (2000) give the possibility of dividing the users of a historical city in different categories, based on a single motive: tourists, shoppers, workers, or residents, each of which can be further subdivided according to a wide range of personal and situational characteristics.

---

3 As Russo (2002) describes in his vicious circle model, a larger number of excursionists can elevate congestion because of their larger sensitivity to the weather and special events on the one hand, and the restrictedness of their time on the other hand. This leads to the concentration of attention on the central locations and most famous attractions, which can be reached through a minimum of information gathering.

4 Vaske and Donnelly (2002) state that the number of contacts is a more important variable than use level in itself. Apart from frequency the place of contact is of importance. When these contacts are limited to public space, they can be seen as less intrusive, compared to contact in more personal spaces. This remark is opposite to the findings Bryon (2005) made about the attitudes of local residents. His research found that contacts in public space where seen as more intrusive due to the coincidence of conflicting values and norms. However, this situation could be reversed in a tourist-tourist relationship, since these contacts mainly take form in public space where tourists get viewed as allies as opposed to the local population (Hottola 2005).

5 It has already been stated that the nationality is also a mediating variable influencing the impact other tourists' origin has on perceived crowding. Here the theory also postulates a direct relationship between nationality and crowding, thereby assuming that the social background plays an important role (Bauer 2003; Gillis, Richard and Hagan 1986).
of demographic, social, or behavioural characteristics. This study will use such a tourist typology viewpoint in defining tourist motivation.

Constructing a model

The above-mentioned factors, expected to influence crowding perception, can be summarized in a crowding perception model, as seen in figure 2. An initial test of the model was done by a consultation of academic tourism experts, who altered the model according to their views and experiences.

Figure 2: Crowding perception model

The situational characteristics relate to the number of tourists, the number of attractions, and the surface of the site. In this view the surface of the destination area and the number of attractions concern the attractions and parts of the tourist-urban surrounding actually being visited, instead of the absolute number. The situational characteristics have been brought together in the variable ‘real congestion’, because congestion in its essence refers to a true state of use level, determined by the number of people on the spot and the surface which accommodates these people, as compared to the perception of crowding which is mainly being formed by psychological constructs.

The characteristics of other tourists included in the model are the origin of other tourists, the behaviour of other tourists, and the place and the intensity of the contact. The influence of behaviour and origin is being mediated by the nationality of the individual. Intensity of the contact replaces the number of encounters in the model, since the former variable seems more appropriate to use in a dense urban setting. The intensity of the contact will to some extend be affected by the number of visitors at the destination.

The personal factors assumed to be of importance are nationality, gender, length of stay, travel expectations, former travel experience, and travel motive. It can be assumed that the length of stay, as a personal characteristic, influences the number of attractions visited and the total surface of used space. Therefore the influence of the length of stay

---

6 Although Suvantola (2002) remarks that existing classifications of travel motives mainly serve commercial interests, leading to nothing more than listing a number of reasons for travelling, this method will suffice here, since this study does not intend to acquire sociological insights in the connection between travel motives and everyday life. It is of greater importance here to compile an indicative list which states the most important factors influencing the travel decision.
is limited to an indirect influence via these variables. Gender, in accordance with Ryan (2002) is presumed to have an effect on travel expectations. These travel expectations are also being influenced by former travel experience and travel motive. It should be noted that travel expectations are not limited to expectations about use level alone. We assume that falling short of expectations about other factors could also heighten the feeling of crowdedness. Former travel experience is considered to have a reversed effect on crowding perception for two reasons: a greater experience could indirectly lead to more realistic travel expectations, and more experienced tourists could have developed some evasive strategies as to lessen the contact with others (Westover 1989). As can be seen in figure 2, motivation has been replaced by the narrower concept of travel motive. This factor, which can also be defined as the reason for travelling, employs a less psychological point of view and is being advocated due to the necessity for a simple measurement tool.

Crowding and the tourist experience

The relationship between crowding at a destination and the tourist experience is of utmost importance, since the socio-demographical carrying capacity under investigation here implicitly takes a minimal tourist experience into account that has to be offered. If the influence of crowding on the visitor experience is higher than an acceptable limit, the destination will not be sustainable on the social level. Steward and Cole (2001) noticed a marginal relationship between the number of encounters and the visitor experience, implying that the number of encounters is a synonym for crowding – which can be discussed. Most research on the relationship between crowding and visitor experience (see e.g. Canestrelli and Costa 1991; Kerstetter, Confer and Graefe 2001; Patterson and Hammitt 1990; Saveriades 2000; Steward and Cole 2001) however assumed an a priori relationship between crowding and the “experience” concept, thereby ignoring the fact that the tourist experience is multidimensional, is influenced by different parties, and is evolving over time (Andereck, Bricker, Kerstetter and Nickerson 2006). Taking these considerations into account, it is worth investigating the influence of crowding on the tourist experience more deeply.

STUDY AREA AND METHODS

Study area

Bruges is by far the most important tourist-historic city of Flanders with an amount of 1,374,800 overnight stays in 2006 and an average stay of 1.81 days (FOD Economie, Algemene Directie Statistiek 2007). Numbers of day visitors are estimated between 3 to 3.4 million tourists (Bryon 2005, WES 2003). Because of its rich cultural heritage, dating from the Middle Ages, the entire inner city is listed as UNESCO world heritage. The most important tourist attractions are concentrated in the southwestern part of the inner city, and other tourism functions mainly developed within this so called Golden Triangle. The tourism concentration has been advocated by the city council in order to alleviate the pressure of tourism on the local population (Bryon 2005). However, given the sizeable visitor number, the limited spatial area of the tourism zone (about 4 square kilometers) and the fact that the main activity of tourists is sightseeing, public space is often overly crowded – specifically on peak days. Therefore Bruges forms an excellent study area.

Data collection method and data manipulation

The model as developed in figure 2 is tested by use of street surveys between October 20th and November 3rd 2007. Since the perception of crowding may depend on the place of measurement (Tarrant 1999), two crowding scales were used: one measuring the
feeling of crowdedness in attractions and one for crowding in public space. In total 422 tourists were interviewed, with a 75%-25% division between primary (Belgium, United Kingdom, France, the Netherlands, Germany and Luxembourg) and secondary tourist markets. Most questions were measured using a 5-point Likert scale.

Since the initial question was to determine to what extent a perception of crowding has an impact on the tourist experience, three questions were incorporated in the questionnaire that can be used to explore this relationship. Firstly, visitors could indicate their feeling of crowdedness on a 9-point crowding scale ranging from 1 (not at all crowded) to 9 (extremely crowded); this scale was based on the crowding scale designed by Shelby et al (1989). Crowding was measured for the tourist attraction and the public space level. Secondly, an extra question was added to ask respondents about the feeling they have concerning the given crowding level. Thirdly, a photographic method was used to evaluate the preference for a certain use level.

Other variables not made operational by Likert scale answers, are number of tourists, other art cities already visited, and surface use. The daily number of tourists was estimated by multiplying the visitors of the tourist office in Bruges by 4.19, a number that had been deducted by using previous information about tourist visits to the information office (Stad Brugge 2005). This method gave reasonable estimates between 15,849 on November 2nd and 5,539 on October 26th. The list of other art cities was drafted based on the UNESCO world heritage list, taking into account the size of the city as to make sure the variation in tourist space between the different destinations would be limited (UNESCO 2007). The total space as used by the respective tourists was approximated by mapping the visited attractions. These were subsequently rescaled to a 5-point scale, giving a value of one to attractions in the middle of the tourist core zone and five to objects outside the main tourist area.

The quantitative analysis was conducted with the statistical software SPSS 15.0 and Amos 16. Firstly, the variable ‘travel motive’, which was constructed by nine 5-point Likert scale questions, was rescaled by the use of a Principal Component Analysis in order to reduce the number of motives. Four motivational dimensions were extracted: non-leisure motives, classical culture tourism motives, consumption-based tourism motives with a preference for food, drinks and shopping, and the romantic motive. Secondly, the country of origin of the tourist was grouped in three clusters, based on the geographical location: Europe, America-Australia, and Asia.

**Statistical analysis: the use of Structural Equation Modeling**

Structural equation modeling (SEM) was used to alter the model. SEM is a multivariate technique that combines factor analysis and path analysis (Ho 2006), which creates the possibility of the simultaneous testing of relations, the inclusion of latent constructs, and the amelioration of statistical estimations by allowing for measurement errors. Assumptions on the independency of the observations and the measurement level of the variables were taken into account during the data collection. Mardia’s coefficient (182.906) and the squared Mahalanobis distance however proved a violation of the normality assumption (Sharma 1996). Also the assumption of linearity, tested by the Spearman rank order correlation, was not met. Therefore, the SEM approach was the Bayesian estimation method, which does not assume multivariate normality and is also more appropriate if relations between dependent and independent variables are not linear (Arbuckle 2007; Nokelainen and Tirri 2004).

Two important issues are the reliability and validity of the latent constructs. Reliability was tested by the reliability test which is inherently part of SEM and by the calculation of the Cronbach’s alpha, which is a measure of the interitem consistency. The validity of the measurement model is indicated by the factor loadings between the observed variables
and the latent construct. According to Kline (1998) this loading has to be at least 0.7 for the variable to be a valid estimate. Using this method a few items were subsequently left out of the model. The remaining items were found sufficiently reliable, valid, and theoretically important to keep in the analysis and a path model was developed, build upon the conceptual model of figure 2 and altered slightly for practical purposes (figure 3).

The fourth travel motive, romanticism, does not show in the model, because this motive consists of one measurement variable (coded ‘RM7’). The variable ‘nationality’ is not observed in the SEM model because the inclusion of a second categorical variable, next to gender (G), renders the model unidentifiable. The influence of nationality will be studied separately. Other important remarks can be made about the construction of the latent variable ‘city use’, which is measured by the number of attractions visited (BA) and the surface visited (RG). Moreover, it is expected that length of stay (LV) influences city use. The place of contact (PL), the intensity of the contact (IC) and the number of visitors on site (NUM) are viewed as having a direct influence on crowding perception, leading to the path model shown in figure 3.

Figure 3: Path model crowding perception
RESULTS AND DISCUSSION

Testing and refining the model

Firstly, the theoretical model must be refined by judging on the relations between the different variables. Table 1 gives an overview of the statistical significance of the relationship, the correlation value, and the direction of the relationship.

<table>
<thead>
<tr>
<th>Regression weights</th>
<th>Mean</th>
<th>S.E.</th>
<th>S.D.</th>
<th>C.S.</th>
<th>95% Lower bound</th>
<th>95% Upper bound</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel expectations &lt;-- Travel experience</td>
<td>-.036</td>
<td>.007</td>
<td>.035</td>
<td>1.021</td>
<td>-.089</td>
<td>.057</td>
<td>.741</td>
<td>.507</td>
</tr>
<tr>
<td>Travel expectations &lt;-- Non-leisure</td>
<td>-.199</td>
<td>.007</td>
<td>.033</td>
<td>1.024</td>
<td>-.252</td>
<td>-.151</td>
<td>.025</td>
<td>-1.260</td>
</tr>
<tr>
<td>Travel expectations &lt;-- Cultural tourism</td>
<td>.044</td>
<td>.002</td>
<td>.010</td>
<td>1.020</td>
<td>.021</td>
<td>.061</td>
<td>-1.734</td>
<td>.584</td>
</tr>
<tr>
<td>Travel expectations &lt;-- Consumptive tourism</td>
<td>-.028</td>
<td>.003</td>
<td>.014</td>
<td>1.022</td>
<td>-.045</td>
<td>.005</td>
<td>.755</td>
<td>-1.113</td>
</tr>
<tr>
<td>Travel expectations &lt;-- Romanticism (RM7)</td>
<td>.022</td>
<td>.003</td>
<td>.013</td>
<td>1.025</td>
<td>.007</td>
<td>.043</td>
<td>.474</td>
<td>-1.429</td>
</tr>
<tr>
<td>Travel expectations &lt;-- Gender (G)</td>
<td>-.074</td>
<td>.007</td>
<td>.030</td>
<td>1.024</td>
<td>-.117</td>
<td>-.034</td>
<td>-1.457</td>
<td>-1.459</td>
</tr>
</tbody>
</table>

Table 1: Structure coefficients between different variables

First of all, the relationship between travel expectations and the other latent constructs is not equally strong for every variable. Travel experience and consumption-based tourism motives are not correlated with travel expectations (the 95%-confidence interval includes the value of zero). The relationship between travel expectation and classical culture tourism and romantic motives is slightly positive, whilst non-leisure travel motive and gender are negatively correlated negatively with travel expectation - the negative sign of the regression weight of gender points out that the travel expectancies of men are more difficult to meet.

Somewhat surprisingly, the latent construct of city use is negatively related to the length of stay, which could be explained by the fact that overnight visitors develop a more intense use, spending more time at one specific place, while day-trippers try to spend their time in the most efficient way, not lingering in one particular space.

Most central in the model are the relationships between crowding perception and the explaining variables. Seven were found statistically significant, five of which have a negative regression weight, one positive and one borderline significance. The non-leisure and cultural travel motive both have a negative regression weight, revealing a lesser feeling of crowdedness among tourists who travelled to the destination out of cultural interests or to meet friends or family, conduct business, or attend conferences. Intensity of contact is also negatively correlated with crowding perception, supporting the initial
assumption that a deeper personal contact decreases the feeling of crowdedness. A negative relationship was also found between the origin of other tourists and crowding: people with a more open attitude towards other cultures on a destination will generally report a lower value on the crowding scale. In accordance with the theory, a greater travel experience makes people more capable of estimating use levels, leading to a lesser extend of crowding perception. The behaviour of other tourists shows a clear positive correlation with crowding perception, indicating that the more disturbed behaviour is observed, the higher the crowding perception. Finally, the place of interactions shows borderline significance. Contacts limiting themselves to public space are valued less intrusive, leading to a smaller impression of crowding than had been the case if the interaction took place in the personal sphere.

Six variables appear to be non-significant. Surprisingly, travel expectations, city use and number of tourist are among these constructs. This leads to a necessary modification of the proposed model. However, since significance parameters can depend on the sample size (see e.g. Schumacker and Lomax 2004) or the construction of the measurement instrument, it is advised to also account for theoretical justification and not only to depend on regression weights to include or exclude variables. A variable with theoretical importance might then be remained in the model. From a theoretical point of view, it seems plausible not to include gender, the romantic and consumptive travel motive and travel expectations in the new model. Although the latter is traditionally seen as influential, it can be assumed that this variable is implicitly stated in travel experience. However, the variables city use and number of tourists, although both not significant in the first model, are retained for theoretical purposes. In line with these changes, a modified path model was tested in which city use did correlate significantly negative with crowding perception, implying that tourists who visit more attractions and larger town areas report smaller crowding values.
Figure 4: Modified path model crowding perception

Standardized regression weights of the refined model are included in figure 4. The higher the absolute value of the regression weight, the more influential the variable is on crowding perception. Surprisingly, other tourist behaviour is the most important variable that explains crowding perception (.741), followed by the non-leisure travel motive (-.553) – the latter being three times as important as the relationship between cultural tourism motives and crowding (-.175). Tourists with a more positive view regarding other cultures on the destination also give significant lower crowding values (-0.480). Other important variables are travel experience (-.377) and the intensity of the contact (-.336). Interestingly, the mainly psychological variables appear to have a much higher impact on the feeling of crowdedness than the situational factors of the destination. The number of tourists at the site does not even have any effect (.000), whilst a wider city use only shows about one fifth of the effect other tourist behaviour has on crowding observations (-.154). Finally, the place of contact showed a significantly negative effect on the crowding perception (-.118).

In order to extend the model with the impact of nationality, a One-way Analysis of Variance (ANOVA) with post hoc comparisons was conducted. In order to include the interactional effects of other variables, a stepwise method was used. After having excluded these interactional effects, a significant difference between European and Asian tourists can be found: Asian tourists often report a lower feeling of crowdedness...
compared to Europeans. This finding is comparable with observations made in earlier studies (Bauer 2003; Yagi and Pearce 2007).

The relationship between crowding, the tourist experience and the preferred use level

The mean value of the crowding level on the 9-point crowding scale, amounted to 5.31 for attractions and 5.71 for public spaces. The fact that the average score for public spaces is higher than for attractions converges with the reality that Bruges is mainly seen as a sightseeing destination where the major tourist activity consists of walking around in the city. 94.1% of the tourists reported a level higher than two on the scale regarding crowding in attractions and 95.3% regarding crowding in public space – Shelby et al. (1989) consider a value of two as an average threshold value above which the (personal) norm of crowding is violated and the tourist experience diminishes. Although these perceived crowding values are rather high, suggesting a serious exceeding of the tourist experience carrying capacity, one should compare this with the feeling tourists have about the crowding level. Surprisingly, no less than 54.7% perceived the crowding level in public spaces (59.0% for crowding in attractions) as positive or very positive. Only a minority of 18.3% (11.9% for attractions) reported a negative feeling. This implies that the carrying capacity limit in Bruges definitely lies above the value of two on the crowding scale. However, it does not exclude the fact that the perception of a certain crowding level and the feeling about this level (the tourist experience) are correlated. Indeed, a Spearman rank order correlation proves a significant, negative relationship between perceived crowding and the tourist experience (correlation value of -.223 (p=.000) for attractions and -.269 (p=.000) for public space).

This observation leads to the hypothesis that the relationship between crowding and tourist experience is mediated by preference – a hypothesis that also refers to the norm theory stating that a negative evaluation is explained by personal norm violation and personal norms could be approximated by preferences. A layered cross table analysis combined with an exact Mantel-Haenszel Chi-square confirmed this hypothesis partially. It was found that the feeling of respondents are significantly more negative if a very low use level is preferred and a high crowding level is perceived, as well for crowding at tourist attractions (Gamma-coefficient = -.497, p=.000) as for public space (Gamma-coefficients = -.483, p=.000; and -.0374, p=.000). Put in other words: only for tourists preferring low use levels, a negative relationship between crowding perception and tourist experience can be found. This holds major implications for future research, since previous studies theoretically assumed crowding to be intrinsically negative (see e.g. Canestrelli and Costa 1991; Saveriades 2000; Shelby et al 1989; Tarrant and English 1996; van der Borg, Costa and Gotti 1996) – this is only the case if tourists do not like crowds in general.

CONCLUSION

Crowding is a psychological state, characterized by stress. A myriad of studies have identified many factors as relevant for influencing the crowding perception, however never for attractions and public space in urban destinations. Aiming at filling this research gap, this study focused on the historic city of Bruges, Belgium, which receives more than 3 million visitors a year. A significant relationship was found between on the one hand a feeling of crowdedness, and on the other hand behaviour of other tourists, non-leisure and cultural tourism travel motive, openness towards tourists from different origins, travel experience, intensity of the contact, city use, place of contact, and nationality. Strikingly, the psychological and behavioural components seemed much more important in crowding perception as compared to situational factors. Other tourists’ behaviour is by far the most influential factor.
Crowding is a concept often thought to be intrinsically negative, linked to the violation of a social norm. Indeed, a significant relationship was found between the perception of crowding and the evaluation of the situation as being positive or negative - negative being an indication of a diminishing tourist experience. However, further analysis showed the importance of preference in this relationship, indicating that significance could only be found for tourists who favoured very low to low use levels. This leads to the conclusion that norm violation mainly works one way, whereby only violation of maximal preferred conditions leads to a negative evaluation and an infraction of minimal preferences – people wanting a crowded destination – does not influence the tourist experience significantly. It can also be noted that crowding does not show to be negative in itself, whereby a number of visitors acknowledge high crowding levels on the crowding scale, while giving a positive evaluation of the situation.

REFERENCES


