

SOCIAL CARRYING CAPACITY IN CENANG BEACH, LANGKAWI ISLAND

Maryam Yousefi
Marina_yousefi@yahoo.com

Azizan Marzuki
chik72@usm.my

School of Housing Building and Planning, Universiti Sains Malaysia, 11800 Penang, Malaysia

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Blessed with a richness of geological features, biodiversity and cultural resources, Langkawi is one of Malaysia's premier tourism destinations (Halim *et al.*, 2011). The popularity of Langkawi as a leading island tourist destination in Malaysia continues to increase. Langkawi's tourist arrivals increase from 209,764 in 1986 to 2,162,402 in 2011, and it is forecasted to rise to 3 million by 2015 (Tourism Malaysia, 2012). This spectacular growth may not only disrupt coastal process and damage ecological integrity of sensitive environment but also reduce the quality of tourists experience and generate conflict among stakeholders regarding appropriate management responses. As a result, managers are faced with challenges that include estimating use thresholds (carrying capacities) and how to manage and monitor use levels to ensure that thresholds are not violated and user experiences are not compromised by such things as crowding and conflict. Applying appropriate management techniques to sustain quality visitor experiences is critical for destination managers if use levels continue to increase. To date, a great deal of research has been conducted on Langkawi Island (such as residents' attitudes toward impacts of tourism (Nurhazani & Shariff Shahrudin, 2003); the impact of tourism on small business performance (Othman & Rosli, 2011); tourism development (Tan, 2005); land use (Samat, 2010). However, to the authors' knowledge empirical study about social carrying capacity in Langkawi Island is scarce.

The theoretical base of crowding research in the outdoor recreation field can be traced back to carrying capacity and, more closely, social carrying capacity studies (Cooper, 2010). The notion that there is some level of visitor use beyond which the quality of visitors' experience diminishes is at the heart of the social carrying capacity concept (Manning *et al.*, 2000). Marzetti & Mosetti (2005) defined social carrying capacity as the maximum number of tourists tolerated by the tourists themselves without reducing the quality of the recreational experiences or the desire to search for an alternative sites activity. The theoretical basis for much of the crowding and carrying capacity literature lies in normative theory, which is a basis for measuring indicators and formulating standards of quality which are focal in recreation and tourism planning frameworks (Needham *et al.*, 2008). Reviewing the literature reveals that social carrying capacity consists of multiple indicators such as encounters, crowding, conflict, noise, and satisfaction (Needham *et al.*, 2008). Crowding is one of the most commonly studied indicators of social carrying capacity in outdoor recreation.

Normative theory is distinguished between the concepts of use level and crowding (Manning *et al.*, 2000). Use level is defined as a physical concept which is relating to the number of people per unit of space, it is neutral and has no psychological meaning (Manning *et al.*, 2000), while crowding has a psychological meaning, it is a negative and subjective evaluation of a use level (Manning, 2011). Crowding appears to be a normative concept; visitors often have

expectations, preferences by which to judge a situation as crowded or not (Manning, 2011). When visitors perceived crowding, they have implicitly compared the actual condition with their normative evaluation of what they feel are acceptable or unacceptable use levels (Bell *et al.*, 2011). Norms are utilized to build a conceptual framework concerning recreation crowding to examine not only whether or not a recreation area is crowded but also at what use level most visitors would consider that crowding occurs (Cooper, 2010).

For at least the 30 years, user perceptions of crowding have provided an approach to determining social carrying capacity. A variety of factors have been suggested as influencing normative interpretations of crowding. These factors have been categorized broadly as: personal characteristics of visitors, characteristics of others encountered, and situational variables (Manning *et al.*, 2000; Kyle *et al.*, 2004; Yagi & Pearce, 2007; Bryon & Neuts, 2008; Tseng *et al.*, 2009; Manning, 2011).

Several studies have found that crowding norms are influenced by the personal and cognitive characteristics of visitors. According to the literature a variety of characteristics of visitors influence crowding norms, including: motivations for outdoor recreation, preference and expectations for contacts, experience level, and attitudes toward management (Manning 2011). These factors have been addressed in several studies (e.g., Buduk *et al.* 2002; Strother & Vogel song, 2003; Arnberger & Brandenburg, 2007; Arnberger & Haider, 2007; Teseng *et al.*, 2009)

There is considerable evidence that the characteristics of other visitors encountered influence crowding norms (Manning, 2011). Characteristics of other visitors that influence crowding include type and size of group, behavior, and similarity between groups (Spiers, 2012). Several studies support this view empirically (e.g. Manning *et al.*, 2000; West, 1982).

The context in which encounters occur can influence, to some extent, the way in which those encounters are perceived and evaluated (Manning *et al.*, 2000). Three situational variables have been hypothesized to affect crowding: type of the area, location within an area, and environmental factors (Manning, 2011). Numerous studies have demonstrated that the recreation setting can also influence perceived crowding (e.g., Donnelly *et al.*, 2000; Lucas, 1980). According to Manning (2011) preference of visitors for site attributes, crowding and encounter with other visitors, motivation for recreation and conflict with other type of users are suggestive of potential indicators of quality of tourist experience.

According to Manning (1999) normative theory is an appealing social construct for studying and managing crowding and carrying capacity. Normative theory assumes that people have evaluative standards of acceptance of behaviors or conditions (Cooper, 2010). Normative theory suggests that visitors have standards by which they judge a situation to be crowded or unacceptable. These norms can be measured to formulate standards of quality or points where indicator conditions become unacceptable (Manning *et al.*, 2010). By defining indicators and standards of quality, carrying capacity can be determined and managed through a monitoring program.

The popularity of Langkawi as a leading island tourist destination in Malaysia continues to increase. To boost tourism in Malaysia the government is set to develop Langkawi Island into a top-notch vacations spot comparable to Bali, Mauritius, Hawaii and Maldives (Tourism Malaysia, 2012). Since the beaches are the focal point for recreation and tourism use in Langkawi, it is critical for destination managers to apply appropriate management techniques to sustain quality of visitor experiences if use levels continue to increase. The empirical findings of this research will provide useful insights for destination managers, the outcome of the research can be used as an input for the management plan that will control

and guide future potential tourism development in the study areas. Further, by illustrating critical variables concerning social carrying capacity, critical impacts of tourism development in Cenang beach could be decreased via well-organized destination management.

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