



Factors influencing experience in crowds – The participant perspective



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ABSTRACT

Humans encounter crowd situations on a daily basis, resulting in both negative and positive experiences. Understanding how to optimise the participant experience of crowds is important. In the study presented in this paper, 5 focus groups were conducted (35 participants, age range: 21–71 years) and 55 crowd situations observed (e.g. transport hubs, sport events, retail situations). Influences on participant experience in crowds identified by the focus groups and observations included: physical design of crowd space and facilities (layout, queuing strategies), crowd movement (monitoring capacity, pedestrian flow), communication and information (signage, wayfinding), comfort and welfare (provision of facilities, environmental comfort), and public order. It was found that important aspects affecting participant experience are often not considered systematically in the planning of events or crowd situations. The findings point to human factors aspects of crowds being overlooked, with the experiences of participants often poor.

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1. Introduction

Gatherings of people (hereafter referred to as crowds) form part of our everyday human experience. Commonplace activities such as commuting to work via transport hubs or shopping in retail environments, social occasions such as visiting bars and restaurants, or entertainment situations (e.g. music festivals, football matches, theme parks and museums) are all examples of crowd environments. Altman (1975) suggested that research into crowds would increase over the next decade due to ‘a burgeoning world population’ and the ‘interpersonal stresses that accrue from too much contact with too many people’. Despite Altman’s predictions, however, research into crowd experience remains surprisingly underdeveloped, particularly with regard to achieving a positive experience for crowd participants (crowd users).

The term ‘crowd’ can have connotations ranging from negative through positive. A situation can be regarded as crowded when the density is such that it obstructs the performance and goal

achievement of individuals (Sundstorm, 1978; Eroglu and Machleit, 1990). A negative experience of crowding has been described as a consequence of physical, social and personal factors that “sensitise the individual to actual or potential problems arising from scarce space” (Stokols, 1972). Individuals will perceive the same crowd with a different level of stress depending on their personal tolerance (Stokols, 1972; Whiting and Nakos, 2008). Although high-density situations contribute to a negative experience for some individuals in particular circumstances, there may be positive outcomes for others, known as functional density (Eroglu and Harrell, 1986; Yildirim and Akalin-Baskaya, 2007; Pons et al., 2015). The atmosphere experienced at a capacity sporting event is an example where the crowd and crowding can contribute to an enjoyable experience.

Arousal theory suggests a curvilinear effect between density and satisfaction, with high and low levels of an arousal leading to a negative experience, and medium arousal leading to a positive experience (Seyle, 1956; Hebb, 1972; Evans and Lepore, 1992; Singh, 1998). However, this is context dependant and cannot account for the enjoyment of very high-density situations such as ‘mosh pits’ seen at some music events for example. Mowen et al. (2003) provide further support for a functional relationship between density and satisfaction in relation to festival environments, where a low density might reflect a poor event. Whiting and Nakos (2008) compared the effects of high, medium and low density

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environments, under different situational contexts (i.e. individuals at a baseball game), and found that medium density situations had the potential to produce positive outcomes instead of negative outcomes. Culture was also identified as contributing to individual perceptions of density preference, an important consideration with international crowd environments.

The majority of crowd-related research has focused on safety and security aspects. This has included pedestrian flow and its modelling (Smith et al., 2009; Still, 2013; Kim et al., 2015; Liu et al., 2016) and public order policing (Reicher et al., 2004; Stott et al., 2008; Drury and Stott, 2011). This research emphasis has followed on from major crowd incidents, e.g. the disasters related to pilgrimages to the Hajj in Saudi Arabia (Hughes, 2003), or the 1989 Hillsborough sports stadium disaster in the UK (Davis et al., 2014).

The Hillsborough Independent Panel (2012) identified a number of crowd management issues as contributing to the disaster, including: inadequate management of the crowd by police and stewards, and a mindset primarily concerned with crowd disorder; a lack of leadership and co-ordination; and a lack of precise monitoring of crowd capacity within the stadium. The “frustration and desperation” displayed by participants in the crowd was incorrectly observed by police and stewards as disorder and anti-social behaviour. Similar mistakes were evident at previous large-scale events, but lessons had not been learnt, highlighting the importance of continually improving the organisation and planning of crowd events. Also reflecting on Hillsborough, Davis et al. (2014) advocated a socio-technical systems approach for analysing crowd behaviours, highlighting six aspects that should be analysed: goals, people, buildings and infrastructure, technology, culture, processes and procedures. Within the six areas the framework highlighted a number of contributory factors leading to the Hillsborough disaster, including ‘lack of communication with the crowds [from the authorities]’ and ‘lack of coordination across event locations [between the authorities]’ (processes), ‘lack of leadership’ (people), ‘inappropriate layout of event environments’ (buildings), and ‘overreliance on technology’ (technology) (Challenger and Clegg, 2011; Davis et al., 2014). Davis et al. argued that socio-technical systems thinking would be beneficial in facilitating wider crowd planning and management, as a means of highlighting potential problems before an event as well as being of value for evaluation and learning afterwards.

Ryan et al. (2010) examined visitor satisfaction for a theme park in Taiwan and found the main sources of satisfaction to be those associated with the atmosphere of the park, the existence of thrill rides, degrees of crowding experienced, having places to rest and a perceived reasonable entry price. Brown and Hutton (2013) considered the psychosocial aspects of audiences at planned events and identified understanding of user motivations, predispositions and behaviour as central to creating a positive “event experience” for crowd participants. Yoon et al. (2010) suggested that through understanding the experience of participants in crowds (i.e. festivals), organisers can efficiently and effectively create a more appealing event. The positive impact of enhancing the participant experience in crowds will aid repeat visitation; increase understanding of the quality dimensions geared to the target market; monitor value and satisfaction to revise the marketing mix accordingly and; consequently increase repeat visitation or loyalty. However, what are the likely repercussions of failing to achieve a positive experience for participants in the crowd? A poor experience for participants could potentially lead to a number negative issues for stakeholders, including: loss of return business; reduced sales of merchandise at the event; diminished reputation of the venue (e.g. for being well organised); antisocial behaviour of frustrated participants (e.g. climbing barriers); misuse and overloading (of facilities, materials and structures); and fire risks amplified if

egress impaired.

From a crowd management perspective, Berlonghi (1995) summarised several ways of distinguishing and assessing crowds with respect to event planning. Berlonghi suggested that failure to differentiate between different crowd types could contribute to ineffective management of the crowd. Challenger et al. (2010) similarly stressed the importance of distinguishing between different crowd types. Rowe and Ancliffe (2008) suggested that a number of factors are not taken sufficiently into account during the design phase of crowd planning. Within a systems framework, these authors argued that designers traditionally concentrate on the ‘environment’ (e.g. the building) and ‘technology’ (e.g. signage) elements. Whereas the operators involved with the crowd situation itself tend to focus on ‘process’ and ‘people’ aspects. Rowe and Ancliffe argued that attention to these four aspects needs to be joined up and integrated to avoid discrepancies between designers and operators contributing to difficulties for crowd participants.

Other than the safety and security aspects of crowds, which have been well researched, guidance on crowd planning and management is mostly derived from experience and intuition rather than research evidence. Moreover, guidance tends to approach the issue from a design, planning and operational viewpoint, with less attention given explicitly to the participant experience. The motivation for the research presented in this paper, therefore, was to address this through investigations with crowd participants and study of crowd situations. The aims were to identify aspects that contribute to a positive experience of crowds, as well as areas of crowd and event organisation that could be improved for the benefit of crowd participants.

2. Methods

Adopting a qualitative approach, initial focus groups were conducted to collect in-depth accounts of the aspects of crowd situations important to crowd participants, addressing safety, goal performance, comfort and satisfaction (Kreuger and Casey, 2000). Second, crowd observations were undertaken to examine how crowd situations exist and operate in practice, including attention to aspects identified from the focus groups. Observation research has been used widely in studies of human behaviour and human system interaction, providing ecological validity for issues that cannot be replicated in a laboratory (Bryman, 2004).

For both studies, structured convenience sampling was used (Bryman, 2004). This aimed to include a wide range of individuals and events relevant to and meaningful for understanding the experience of users within a crowd. Sample size for each study was determined through data saturation; i.e. recruitment ended when novel material and insights from the thematic analysis of transcripts and observation records no longer emerged (Straus and Corbin, 1998).

Both studies complied with the requirements of Loughborough University Ethical Advisory Committee.

2.1. Crowd user focus groups

Five focus groups were recruited, with a total of 35 participants (Table 1). Each focus group comprised between 6 and 8 individuals, with the same facilitator conducting each focus group (lasting approximately 90 min) in the UK. During each session, a set of photographs was presented to prompt discussion regarding being in a variety of crowd situations (Eroglu and Machleit, 1990). Photographs were clustered into five different crowd situations: spectator events (music, sporting, and theatre), conferences and exhibitions, transport hubs, participatory events (races, marathons), and retail. Focus group members were invited to discuss

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