Applied Ergonomics 68 (2018) 18–27

Contents lists available at ScienceDirect

Applied Ergonomics

journal homepage: www.elsevier.com/locate/apergo

Factors influencing experience in crowds – The organiser perspective

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ARTICLE INFO

Keywords:
Event planning
Event organisation
Crowd ergonomics

ABSTRACT

Crowds are a commonplace encounter but the experience for participants can be highly variable. Crowds are complex sociotechnical phenomenon, affected by many interacting factors. Little is known, however, about how those responsible for organising crowd situations approach their responsibilities. This study conducted semi-structured interviews (n = 41) with organisers responsible for different aspects of the design, planning, management and operations of events and other crowd situations. The objective was to understand organisers' priorities, along with the consideration given to the experience of crowd participants. The interviews revealed that organisers generally prioritised finance, security and health and safety aspects, whilst giving limited explicit attention to other important factors that affect participant experience. Organisers tended to approach their planning and decisions on the basis of their own experience and judgement, without accessing training or reference to guidance. It is suggested that the non-use of guidance is in part due to problems with the guidance currently available, both its content and its form. The organisers of infrequent or small-scale events have the greatest knowledge and experience gap. It is concluded that in order to achieve a consistent, high quality experience for crowd participants, there needs to be improved understanding among organisers of the complexity of crowds and the multiple factors influencing participant experience. Guidance and tools need to be usable and tailored to organisers' requirements. Organisers of infrequent or small-scale events are especially in need of support.

1. Introduction

Enhancing the experience of being part of an event, gathering or crowd has been of interest for centuries. The Coliseum in Rome, for example, built in 70 AD, was designed to heighten the enjoyment of spectators. It is believed to have contained features such as shaded viewing areas and numbered entrance points for the comfort of spectators (Perkins, 2004). The design also contained 80 passageways throughout the amphitheatre to allow for quick and efficient ingress and egress. Centuries on, however, ergonomics and human factors aspects of crowd situations are still being overlooked, with the experiences of participants too often poor as a consequence (Filingeri et al., 2017). Understanding how the various actors involved in the design, planning, management and operations of crowd situations is important to understand where improvements could be made towards optimising the experience for participants.

Crowd situations occur in wide ranging environments, anywhere from a field, marquee, concert hall, to a railway station. In some situations, there is flexibility to alter the layout. In others, permanent infrastructure and available space are a restriction. Extensive guidance is available for planning and managing crowd situations (e.g. Work Safe Victoria, 2007; SGSA, 2008; HSE, 2010; Cooper, 2014; EIF, 2016). This guidance gives advice on: venue layout, pedestrian flow, queuing, monitoring occupancy, signage, welfare facilities and dispelling anti-social behaviour, for example. However, the focus is generally on preventing dissatisfaction rather than enhancing satisfaction. Another dimension, according to Still (2013), is that many crowd situations are designed, planned, managed and operated by organisers without adequate knowledge, understanding and competencies, in contexts where licensing is not required. In practice, there is a wide diversity of outcomes, ranging from crowd situations providing an excellent experience for participants to those where it is very poor (Filingeri et al., 2017).

Research concerning the wellbeing and experience of crowd participants has examined, for example, satisfaction of individuals in crowds (Machleit et al., 2000); psychological reactions to a given crowd situation (Worchel and Teddie, 1976; Worchel and Yohai, 1979; Hopkins et al., 2016; Pons et al., 2016); impact of prior expectations and experiences (Webb and Worchel, 1993); gender and experience (Rüstemli, 1992; Ozdemir, 2008); personal and cultural space preferences (Martinez, 2009; Pons and Laroche, 2007); and crowding and goal performance (Klein and Harris, 1979). Attention has also been given to the impact of different crowd situations on individual experience of

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http://dx.doi.org/10.1016/j.apergo.2017.10.013
Received 16 February 2017; Received in revised form 14 October 2017; Accepted 18 October 2017

stress (Cox et al., 2006). Moreover, studies have considered a range of different crowd types including those occurring with retail environments (Whiting, 2013; Pons et al., 2016); restaurants (Robson, 2011); music festivals (Janchar et al., 2000); sporting events (Johnson, 2008); and religious pilgrimages (Hughes, 2003).

When it comes to beneficial aspects of crowds, Yildirim and Akalin-Baskaya (2007) explored the effects of crowding on human health and behaviour and found that crowding and close inter-personal distances increase stimulation, which if maintained at an optimal level may be welcome to participants. Studies have identified beneficial aspects of crowds for businesses (Whiting and Nakos, 2008; Brown, 2010; Brown and Hutton, 2013). Most notably, the Walt Disney Company coined the term "guestology" to describe their user-centred approach to optimising participant experience at their theme parks (Ford and Dickson, 2009; Ford et al., 2012). This involved customer interviews, focus groups, observations and surveys to gain insight into their customers' expectations and reactions, to understand the user experience. This user-centred approach is claimed to have been effective in creating 'magical' experiences for participants, contributing to a successful business model, positioning Disney as an exemplar of service excellence. This foregrounding of attention to participant experience is a rarity, however.

With regard to crowd design, planning, management and operations, Berlonghi (1995) defined 11 different types of crowd, depending on the nature of participants and their behaviour: ambulatory; disability or limited movement; cohesive or spectator; expressive or revellous; participatory; aggressive or hostile; demonstrator; escaping or trampling; dense or suffocating; rushing or looting; and violent. Berlonghi also described crowd catalysts, triggers that could affect the mood of a crowd, altering it from one that can be managed to one out of control. Although these definitions aimed to help distinguish different crowds, allowing appropriate strategies to be developed for crowd oversight, little evidence exists to confirm the categorisation. Evidence of the successful translation of Berlonghi's framework to the organisation of actual crowd situations is also limited.

More recent research has identified a need to develop more rigorous, systematic data collection techniques, from which to enhance theoretical understanding and conceptual analysis of crowds (Haghighia et al., 2013; Turris et al., 2014). Haghighia et al. (2013) highlighted the need to improve understanding of the influences on crowd behaviour, with systematic collection of data in support of medical emergency management in crowd situations. This approach might also be applied to participant experience within crowds, which might also benefit from more stringent, usable systems for gathering information and responding accordingly. Turris et al. (2014), developed an event model to characterise crowds of pedestrians, allowing comparison of different crowd situations. The modelling aimed to strengthen the assessment of risk in order to prevent the spread of infectious diseases within crowds. The model incorporated crowd demographics (event type, geography, size, temporality); dynamics (crowd type, crowd behaviour, purpose of event, political context); and design (protective factors, special hazards, onsite health services, host community burden) to define a crowd. Although this event model focused on improvements related to public health and the spread of infectious diseases, the model and methodology could be used to support the planning of crowd situations with the aim of enhancing the user experience.

The existing studies of crowds have, however, tended to be restricted to a limited range of factors, confined to particular crowd types and not embracing the socio-technical systems perspective that ergonomics and human factors (E/HF) would advocate (Challenger et al., 2009; Davis et al., 2014; Martella et al., 2017). It is readily apparent that crowd situations involve significant interactions between humans and features of the environment as well as a multitude of social exchanges. The oversight of crowds entails complex organisational processes and coordination. These characteristics place crowds clearly within the scope of E/HF, with its human centred, systems approach.

The study reported in this paper extends our previous research, which examined influences on crowd participant experience (Filingeri et al., 2017). This earlier study involved a combination of focus groups with different user groups (35 focus group participants, age range: 21–71 years) and observations (55 different crowd situations, e.g. transport hubs, sport events, demonstrations). Important influences on participant experience in crowds included: physical design of crowd space and facilities (layout, queuing strategies), crowd movement (monitoring occupancy, pedestrian flow), communication and information (signage, wayfinding), comfort and welfare (provision of facilities, environmental comfort), and public order. Whilst our research encompassed crowds that resulted in positive experiences for participants, there were also many negative experiences. These were present across numerous different circumstances, suggesting there are repeating common failures in how crowd situations are designed, planned, managed and operated. It was concluded that ergonomics and human factors aspects of crowds are often overlooked, with a corresponding failure in the planning of crowd situations to consider methodically important influences on participant experience.

Responding to this finding, the aim of the investigation reported in the present paper was to improve understanding of how those responsible for crowd situations approach and fulfil their activities. The term 'organiser' is used here broadly to describe those responsible for the design, planning, management and operational aspects of crowds. The involvement of organisers may range from being formal and well defined, e.g. as with sports stadia or performing arts venues, through to situations where the organisation is looser and less explicit, e.g. crowds in public spaces such as shopping streets. The activity of organisers has been examined from the perspective of different organiser roles, responsible for overseeing different aspects of crowds. The overall goal was to identify areas of crowd organisation that could be improved, leading to a more systematic approach to design, planning, management and operations, resulting more often in positive outcomes for participants.

2. Methods

Semi-structured interviews were conducted with crowd organisers involved with crowds in a wide range of capacities in the UK. Structured convenience sampling was used to recruit interviewees, on the basis of what was relevant to and meaningful for understanding the various roles involved in organising crowd situations (Bryman, 2004). Sample size was determined through data saturation, i.e. recruitment ended when novel material and insights from the thematic analysis of transcripts no longer emerged (Strauss and Corbin, 1998).

Interviewees were recruited to encompass the sociotechnical variation found across different crowd situations: purpose, size of crowd, venue capacity, demographics of crowd, day and time of crowd, schedule of activities, weather conditions, seating arrangements, crowd movement patterns, density of crowd in various locations, and other specific aspects (transportation, parking, ticket selling for example). This diversity of crowd related factors was as identified in previous research (Challenger et al., 2009; Davis et al., 2014; Still, 2013; Filingeri et al., 2017; Martella et al., 2017). The recruitment included the following crowd types, as defined by Berlonghi (1995): ambulatory (walking), spectator (watching an activity or event), expressive (emotional release, shouting, chanting), participatory, demonstrator, and restricted movement.

A semi-structured interview schedule was developed to ensure that questioning was consistent yet flexible (Stanton and Young, 1999). The question set and prompts were based on our previous research, which identified factors contributing to experience of crowds from a participant perspective (Filingeri et al., 2017) (Table 1). The interview questions covered approaches and processes adopted in the design, planning, management and operational aspects of crowd situations, along