

Service elements influencing the emotions of visitors to an international airport

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Abstract

Emotions constitute a crucial element in understanding a service experience. When a service experience is evaluated by airport visitors, their evaluation is influenced by their emotional reactions. Furthermore, since emotions represent a primary source of human motivation, positive emotions are likely to lead to positive responses, increased satisfaction and favourable behaviour. These introductory statements give rise to the aim of this article, which is to explore those service elements influencing visitors' emotions and, consequently, also their experiences at an international airport. In order to achieve the aim, a questionnaire survey (N=490) was conducted at an international airport in South Africa after which a factor analysis was performed to identify the primary elements of the airport service environment that influence the emotions of visitors. Structural equation modelling was then employed to test the significance of the relationship between the service elements and the emotions of visitors. Five distinct service elements were identified, namely Physical comfort, Amenities, Visitor facilities, Passenger services and Accessibility. These elements further showed significant correlations with the emotions of visitors. This research was the first of its kind conducted at an international airport in South Africa and contributes significantly to management practices regarding specific elements of an international airport environment, i.e. the emotions, experiences and behaviour of international airport visitors.

Keywords: visitor experience, servicescape, emotions, behaviour, satisfaction

INTRODUCTION

Service environments play a significant role in the sphere of service delivery since a service environment is able to generate pleasant emotional reactions amongst visitors and, thus, influence their experiences (Bigné, Andreu & Gnoth, 2005; Lin & Liang, 2011). Visitor experiences are the heartbeat of services marketing and management; these refer to physiological phenomena that are difficult

to measure. The task of managing experiences is therefore quite challenging because so many factors are beyond the control of management, including visitors' perceptions of the service which are based on their prior experiences and cultural backgrounds, amongst others (Oh, Fiore & Jeoung, 2007; Pearce, Filep & Ross, 2011; Pullman & Gross, 2004; Wilson, Zeithaml, Bitner & Gremler, 2012; Zehrer, 2009). Previous research has established

that there are indeed certain elements within the service environment that can be put into place with a view to influence a visitors' experience specifically by influencing their emotions. These elements will, in turn, affect the behaviour of visitors and enhance their satisfaction (Babin & Attaway, 2000; Bigné et al., 2005; Bitner, 1992; Brunner-Sperdin, Peters & Stroble, 2012; Ezeh & Harris, 2007; Hoffman & Turley, 2002; Lovelock & Wirtz, 2011; Mattila & Wirtz, 2001; Wilson et al. 2012; Zins, 2002; Zomerdijk & Voss, 2010). Even more specifically, positive emotions derived from a service environment have a discernible influence on the on-site behaviour of visitors, and may be associated with increased spending and time spent within the service environment, according to Lin and Lang (2011) and Newman (2007).

Studies investigating the effect of the physical service environment on visitors' emotions and experiences originate in the field of environmental psychology (Donovan & Rossiter 1982; Mehrabian & Russel, 1974) and have in recent times become a popular research topic. For example, research by Kotler (1973) and Baker (1987) used the term "atmospherics" to describe the service environment and Bitner (1992) later on coined the term "servicescape" to refer to the combination of landscape and service that denotes the physical environment in which visitor experiences are created. Various research studies have been conducted over the years aimed at characterising the field of service environment research and its effect on visitors; among these studies the research of Jeon and Kim (2012), Kim and Moon (2009), Newman (2007), Lin (2004), Lin and Liang (2011), Lin and Mattila (2010), Lin and Worthley (2012), Pareigis, Echeverri and Edvardsson (2011) and Rosenbaum and Massiah (2011) can be highlighted.

Even though the term service environment has several synonyms in the literature (such as servicescape and atmospherics) the generally accepted definition remains

universal, namely that the service environment incorporates the exterior and interior design, ambient conditions, tangibles and human factors (Brunner-Sperdin et al., 2012). Because services are produced and consumed simultaneously, visitors' affective (emotional) responses to the cues in the service environment have a strong impact on their behaviour and perceptions; and therefore, visitors' emotions are regarded as a principal element in the process of understanding their perceptions of the service environment; this has been proposed by Lin and Liang (2011), Newman (2007), Pullman and Gross (2004), and Zomerdijk and Voss (2010).

Although the effect of a service environment on visitor emotions and consequently their experiences has been widely recognised, there is a lack of empirical research in the field - that has been noted by Brunner-Sperdin et al. (2012) and Ezeh and Harris (2007). This lack of empirical research also applies to airports. Furthermore, it is becoming critical to understand visitors' emotions within a service environment setting for the service provider to be able to predict behavioural intentions, promote satisfaction, encourage positive word-of-mouth, increased spending and return visits (Bigné et al., 2005; Brunner-Sperdin & Peters, 2009; Brunner-Sperdin et al., 2012; Newman, 2007; Lin & Liang, 2011; Lin & Matilda, 2010).

An international airport, is a physical service environment that has primarily been established with the aim of providing service experiences to visitors who are travelling, as well as providing amenities for meeters and greeters, the airport visitors and the local community (Jeon & Kim, 2012). Awareness of the tangible and intangible service elements that influence a visitor's experience within in the airport environment could contribute towards airport management's pursuit of generating positive emotions that are likely to influence the behaviour of visitors. This could result in higher levels of satisfaction amongst airport visitors as well as

increased revenue because visitors are motivated to spend more time and money in such an environment (Brunner-Sperdin et al., 2012; Newman, 2007; Zomerdijk & Voss, 2010).

The magnitude of the range of service elements, emotions and visitor experiences straddle a number of disciplines; detailed narratives of these fall outside the scope of the current article. This article therefore sets out to explore specifically those service elements at an international airport in South Africa that influence visitors' emotions and, consequently, their experiences.

Literature Review

Research investigating environmental psychology has produced a body of knowledge about the influence that service environment elements have on visitor behaviour. The early work of Mehrabian and Russell (1974) provided an influential framework; the authors indicated that environmental stimuli influence visitors' emotional states, which in turn have an effect on their behavioural responses. This framework is based on the stimulus-organism-response (S-O-R) model. Donovan and Rossiter (1982) and Donovan, Rossiter, Marcolyn and Nesdale (1994) have used the S-O-R model to illustrate that visitors' behaviours and perceptions within a given environment are the results of emotional states created by an environment. Their findings revealed that the features of the service environment (S) can have a measurable impact on visitors' behaviour (R) whilst being interceded by the visitors' emotional state (O) that is influenced by the environment.

Other pioneering environmental psychology approaches include the work of Baker (1987); Bitner (1992) and Kotler (1973) and who did ground-breaking work on studying the elements of a service environment that have an effect on visitors. Kotler (1973) introduced the concept of atmospherics as a marketing

tool; he defined the physical service environment as: "*the design of buying environments to produce specific emotional effects in the buyer that enhance her/his purchase probability*". The above-mentioned research is supported by Eze and Harris (2007). According to the definition set out above, visitors respond to more than a tangible product or a service offered. Indeed, what affects visitors' decisions most is the atmosphere in which they find themselves in, and to this end, it is interesting to note that the atmosphere in many cases is sold as the primary product (Kotler, 1973). Additionally, the atmosphere of the service environment influences the purchase behaviour of visitors in three ways, namely as an attention-creating medium, as a message-creating medium, and as an affect-creating medium (Kotler, 1973). Thus, when correct atmosphere of a service environment is created by a service provider in order to communicate marketing messages to visitors, this will grab visitors' attention and direct it towards the product. Furthermore, by using aspects such as colour, sound and texture, interest in the message will be generated amongst visitors (Lovelock & Wirtz, 2011).

Baker (1987) studied the service environment through the lens of atmospherics and concluded that the physical service environment influences visitors' judgement about the services they received. Baker (1987) furthermore states that visitors' service experiences are mostly influenced by *ambient* factors (cleanliness, noise, air quality), *design* factors (interior and exterior) and *social* factors (visitors interacting with the service personnel and with other visitors). Research by Jennings, Lee, Cater and Ollenburg (2008); Jeon and Kim (2012), Pullmann and Gross (2004) as well as Zomerdijk and Voss (2010) supports the service environment elements of Baker (1987).

Bitner (1992) coined the term 'servicescape' (referring to the service environment) and described it as the

physical surroundings in which visitor experiences are created (also see Bitner, 1992; Brunner-Sperdin et al., 2012; Juhari, Ali, & Khair, 2012; Mansor, Redhwan & Jusoh, 2012; Pareigis et al., 2012). These experiences are created through *ambient* conditions (such as cleanliness, noise, air quality), *spatial* layout and *functionality* (such as layout of the service environment; equipment, furnishings), and *signs, symbols and artefacts* (such as signage, style of decor). These elements are believed to have an influence on employee and visitor behaviour on the cognitive, emotional and physiological level (Bitner, 1992; Wilson et al., 2012).

Taking the above into consideration, the works of Baker (1987), Bitner (1992) and Kotler (1973), has laid a sound foundation for studying the service environment and identifying the elements of the service environment that influence visitors. Building on the findings of these researchers, several studies have since been conducted in the hospitality and tourism environment with a view to identify those service elements that influence visitors in different research settings. Popular research settings include hotels, restaurants, shopping, theme parks and airports. Table 1 presents an overview of research conducted on the elements of the service environment influencing visitors.

Table 1: Influential elements of the service environment

Source	Servicescape elements	Setting
Westbrook (1981)	Layout; Spaciousness; Organisation; Cleanliness & Attractiveness.	Retail outlets
Booms and Bitner (1982)	Architecture; Lighting; Temperature; Furnishings; Layout & Colour.	Restaurants and hotels
Baker (1987)	Ambient factors; Design factors & Social factors.	General service settings
Bitner (1992)	Ambient factors; Spatial layout and functionality; Signs, symbols & artefacts.	General service settings
Wakefield and Blodgett (1994)	Layout accessibility; Facility aesthetics; Seating comfort; Electronic equipment displays & Facility cleanliness.	Leisure service setting
Berman and Evans (1995)	Store exterior; General interior; Layout and design & Point-of-purchase & Decoration variables.	Retail outlets
Turley and Milliman (2000)	Exterior; General interior; Layout and design; Point-of-purchase and decoration & Human factors.	Shopping
Lucas (2003)	Ambient factors; Layout navigation; Cleanliness; Interior Décor & Seat comfort.	Hotel and casino
Zeithaml, Bitner and Gremler (2006)	Facility exterior & Facility interior.	General service setting
Newman (2007)	General way-finding (signage) and arrangement of space (public and personal).	Airport
Harris and Ezeh (2008)	Ambient conditions; Design factors; Staff behaviours & Staff image.	Restaurants
Kim and Moon (2009)	Ambient conditions; Facility Aesthetics; Layout; Electric Equipment & Seating Comfort.	Restaurants
Rosenbaum and Massiah (2011)	Physical; Social; Social Symbolic and Natural Dimensions.	General service settings
Jeon and Kim (2012)	Ambient function; Functional factors; Aesthetic factors; Safety Factors & Social factors.	Airport
Brunner-Sperdin et al. (2012)	Design elements; Atmospheric variables; Empathy of employees; Responsiveness of employees; Expertise of employees; Leisure experiences & Situational variables.	Hotel
Juhari et al. (2012)	Ambient conditions; Design (interior & exterior), Visual communication & Accessibility.	Shopping mall
Dong & Sui (2013)	Background atmospherics, physical facilities, employee service, employee image, cultural elements.	Theme park

Source: adapted from Jeon and Kim (2012)

The elements that have a bearing on visitors' behaviour in the above service environments (Table 1) are quite varied. However, noticeable elements that appear repeatedly are: ambient conditions, interior and exterior design (decor); spatial layout, functionality, physical facilities and employee involvement. This summary confirms the typologies of Baker (1987) and Bitner (1992). Two studies have more specifically been conducted at international airports by Newman (2007) and Jeon and Kim (2012), and the elements of the service environment that specifically influence visitors' behaviour at an international airport, according to these studies, are: ambient conditions; functional factors, aesthetic factors; safety factors, social factors, general way finding and the arrangement of space (in no particular order).

It is, furthermore, widely recognised that the elements of the service environment influence visitors' behaviour, specifically on an emotional level (Brunner-Sperdin et al., 2012; Ezeh & Harris, 2007; Pullman & Gross, 2004). Furthermore, the service environment can set the mood for the visitors' emotions, which can either be positive or negative. More specifically, positive emotions can influence judgement by shaping what is noticed, encoded and retrieved in the judgment process by the visitors (Forgas, 1995; Wakefield & Blodgett, 1994). Research by Kim and Moon (2009) has demonstrated that certain service elements, specific facility aesthetics and ambient factors, evoke positive emotions within visitors. Contrary to this research are the findings of Jeon and Kim (2012) who found that the ambient factor have a significant effect on visitors' *negative* emotions. However, the functional factors; aesthetic factors; safety factors and social factors have been found to have a significant effect on creating positive visitor emotions. Work by Brunner-Sperdin et al. (2012) has revealed that the elements of the service environment, namely design elements; atmospheric variables; empathy of

employees; responsiveness of employees and expertise of employees, have a significant influence on the emotional state of visitors. However, whether this influence was positive or negative is not reflected in the results. With the above in mind, Mossberg (2007) refers to the service environment as the "experiencescape" since the complex mix of environmental features around the service provided creates internal responses that give rise to positive emotions and experiences amongst visitors. Since visitors' emotions represent a critical source of human motivation and exert substantial influence on the thought process, emotions are likely to give rise to enhanced or reduced satisfaction, and may therefore lead to approach or avoidance behaviour, according to Lin and Liang (2011) and Lin and Worthley (2012).

Coghlan and Pearce (2010) have developed a more recent model for analysing visitors' experiences, emotions and satisfaction in a service environment. Their model measures emotions leading to positivity, negativity, receptivity and annoyance. This model will specifically be used in this study to measure visitors' emotions at an international airport in order to identify those service elements which evoke emotions within visitors that will influence their behaviour at the airport. Brunner-Sperdin et al. (2012) and Dong and Siu (2013) state that a favourable experience in a service environment can delight visitors and consequently craft feelings of fun and create favourable memories. A poor service experience, on the other hand, will create the opposite and may leave visitors with a feeling of disappointment. Seeing that emotions play such an important role in how visitors perceive the elements of the service environment, such as in the case of an international airport, management should observe visitors' emotional responses and consequently create places, interactions and processes aimed at enhancing positive emotions which, in turn, will lead to favourable visitor behaviour (Wilson et al., 2012). To reiterate, the central

research aim is to identify those elements of the service environment that are likely to influence visitors' emotions at an international airport in South Africa.

Research methodology

The current study can be described as pioneering research conducted at an international airport, and therefore this study is both unique and exploratory in nature. The method of research will be discussed next, based on the steps that were taken towards designing and implementing the research procedure. These steps are: selecting the method of data collection and research instrument; implementing the research procedure; defining the research population; and lastly conducting the statistical data analysis.

Selecting the method of data collection and research instrument

A quantitative research method was implemented, using a structured questionnaire to obtain the data required. A valid research instrument for conducting quantitative research is the questionnaire, which was selected as the research instrument for the study. More specifically, this questionnaire used to survey the visitors at the international airport was newly developed and is based on the work of Coghlan and Pearce (2010); Cutler and Carmichael (2010) and Kim (2009); who focussed on visitor experience research. Also, the work of Fernandes and Pacheco (2010); Fodness and Murray, (2007) and Skytrax (2012) who focussed on airport service-related research were taken into consideration. The questionnaire was divided into three sections. *Section A* captured the demographic details of the respondents whilst *Section B* focussed on visitors' emotions, and on measuring visitors' airport experience and their motivations. *Section C* determined which aspects are likely to affect visitors' experiences positively with regards to future developments at the international airport. For the purpose of this article,

only the statistics obtained from Section B will be presented.

The questionnaire was tested prior to the main survey by means of a pilot study involving 16 respondents. This was undertaken in order to test the viability of the questionnaire. Necessary changes suggested by the respondents who participated in the pilot study were considered and amendments were made accordingly.

The research procedure

The questionnaire was distributed to visitors at an international airport in South Africa over a period of five days during different times of each day. Originally, 560 questionnaires were distributed; however, 90 questionnaires were not completed adequately and were omitted from the analysis. Therefore, a total of 490 questionnaires can be considered as the realised sample size (N).

This research used non-probability sampling, following the stratified sampling approach. Stratified sampling is explained by Tustin, Ligthelm, Martins and Van Wyk (2010) as: "*a sampling method that separates the research population into different subgroups and then selects random samples from each subgroup*". Three groups were targeted for this survey: *firstly*, the questionnaire was distributed at the international departure hall amongst visitors; *secondly*, the questionnaire was distributed at the domestic departure hall and *thirdly*, the questionnaire was distributed amongst visitors (meeters and greeters) at the international arrival area. It should be noted that this questionnaire was designed for and aimed at departing passengers and did not incorporate arriving passengers due to time constraint reasons. Fieldworkers moved around the three areas of the airport noted above during different times throughout the research period; this was done in order to minimise bias. Fieldworkers approached potential airport visitors and explained the goal of the survey and the questionnaire to

ensure that visitors participated willingly and responded openly and honestly.

Defining the research population

Based on descriptive statistics, the profile of the research population is as follows: Of those who participated, 78% were travellers and 22% were at the airport as meeters and greeters. The study population furthermore comprised of 55% males and 45% females, 46% of which were South Africans and 30% of the population were aged between 26 and 34 years. Most of the participants are in possession of a diploma/degree (49%) and indicated that they occupy a professional position (31%). A large percentage of the participants indicated that they travel economy class (89%) and have been to the airport only one or two times (49%) before. The majority of the participants indicated that they travelled alone (56%).

Statistical data analysis

Once the data was received, it needed to be analysed in order to achieve the objectives stated. This was conducted over two stages:

During the first stage of the data analysis, a principal component factor analysis with Oblimin rotation, using SPSS, was performed with the aid of IBM SPSS Statistics Version 21 (SPSS Inc., 2013). The factor analysis was performed on the 35 airport service items and the 15 emotion statements (Section B of the questionnaire). The above was done in order to explain the variance-covariance structure of a set of variables through a few linear combinations of these variables. The Kaiser-Meyer-Olkin measure of sampling adequacy was used to determine whether the covariance matrix was suitable for factor analysis. Kaiser's criteria for the extraction of all factors with Eigenvalues larger than one were used, because they were considered to explain a significant amount of variation in the data (Field, 2009). All items with a factor loading of higher than 0.25 were considered as contributing to a factor, and

all factors with loadings smaller than 0.25 were regarded as not correlating significantly with this factor. Any item that cross-loaded on two factors, with factor loadings both greater than 0.25, was categorised into the factor where interpretability was deemed best. A reliability coefficient (Cronbach's Alpha) was computed for each factor in order to estimate the internal consistency of each. According to Field (2009), a Cronbach Alpha value of 0.7 and above is considered reliable. The average inter-item correlations were also calculated as another measure of reliability. According to Clarke and Watson (1995), all inter-item correlations between 0.15 and 0.55 are considered as indications of reliability.

The second stage of the data analysis comprised the transferring of the data to Amos 20.0.0 (Amos Development Company 2011) in order to examine the effect of the airport service elements on visitor's emotions, by means of structural equation modelling (SEM). According to Foster, Barkus and Yavorsky (2006), structural equation modelling is able to deal with multiple independent and dependent variables of categorical or continuous data and the goal of structural equation modelling is to select a model that best accounts for the data. Structural equation modelling has become increasingly popular amongst researchers especially in the social sciences (Hooper, Coughlan & Mullen, 2008). Some view the Chi-Square test to be an overly strict indicator of model fit, given its power to detect even trivial deviations from the proposed model. However, it is good practice to report multiple-fit indices and typically from three broad classes (Hancock & Mueller, 2010). Ballentyne, Packer and Falk (2011) and Blunch (2012) suggest CFI > 0.90 and RMSEA < 0.10. Furthermore, Wheaton, Muthen, Alwin and Summers (1977) suggest that a CMIN/DF value of 2-5 should be considered as acceptable.

Results

The following section presents the results obtained from the factor analyses and the structural equation modelling.

Results of the factor analysis: airport attributes

The factor analyses revealed five factors and accounted for 67.5% of the total variance. The Kaiser-Meyer-Olkin measure of sampling adequacy yielded 0.94, which indicates that the patterns of correlation are relatively compact and presented distinct and reliable factors (Field, 2009). Bartlett's test of Sphericity also reached statistical significance ($p < 0.001$), supporting the factorability of the correlation matrix (Field, 2009; Pallant, 2010). The factors were labelled according to corresponding characteristics. The order in which these factors are presented is based on the output that emerged from the pattern matrix. The factor scores were calculated as the average of all items contributing to a specific factor so that they could be interpreted on the original five-point Likert scale of measurement that ranged from 1 (*not important at all*) to 5 (*extremely important*). These five factors are presented below.

Factor 1: Physical comfort

Factor 1 was labelled *Physical comfort* and comprises aspects such as availability of seats within the airport, thermal comfort, the physical layout of the airport, general security, comfort of seats, convenient location of trolleys; general hygiene; distance between facilities, and the availability of lifts/escalators and moving walkways. *Physical comfort* was regarded as the third most important factor with a mean value of 3.95, a reliability coefficient of 0.90 and an inter-item correlation of 0.59.

Factor 2: Amenities

Conference and convention centres; prayer and religious facilities; quiet areas; availability of day rooms; recreation areas for children; availability of travel agents to assist with information; a cheerful airport

atmosphere and the presence of art/visual displays are all categorised under Factor 2 as *Amenities*. This factor received a mean value of 3.49 which is the lowest of the five and has a reliability coefficient of 0.90 and an inter-item correlation value of 0.54.

Factor 3: Visitor facilities

Factor 3, *Visitor facilities* include the availability of nationally known restaurants and retail outlets; a variety of retail concessions within the airport; the quality of food and beverages; neatly dressed employees and the availability of financial services. Factor 3 scored a mean value of 3.70, a reliability coefficient of 0.90 and an inter-item correlation value of 0.59.

Factor 4: Passenger services

Passenger services (Factor 4) encapsulate fast and efficient flow of check-in procedures; quality service rendered by airport staff; available areas and staff to assist with check-in; plenty of open spaces to prevent overcrowding; encounters with customs, and availability of telecommunication services and Wi-Fi. *Passenger services* were regarded as the second most important factor with a mean value of 4.02, a reliability coefficient of 0.92 and an inter-item correlation value of 0.62.

Factor 5: Accessibility

Factor 5, *Accessibility* refers to general signage to the airport; parking facilities; transport methods available to get to the airport; signage within the airport, and quality of service rendered by car rental outlets. Visitors to the international airport regarded *Accessibility* as the most important factor with regards to service elements. This factor scored a mean value of 4.07, a reliability coefficient of 0.84 and an inter-item correlation value of 0.52.

Results of the factor analysis: emotion variables

A principle component axis analysis using Varimax with Kaiser Normalisation revealed two factors; this finding is congruent with the wheel of emotions developed by Coghlan and Pearce (2010).

The two factors fit the description of positive emotions (Factor 1) and negative emotions (Factor 2) and were labelled accordingly (Table 2). The factor scores were calculated as the average of all items

contributing to a specific factor so that they could be interpreted on the original five-point Likert scale of measurement that ranged from 1 (*not at all*) to 5 (*very much*).

Table 2: Means and factor loading of emotions variables

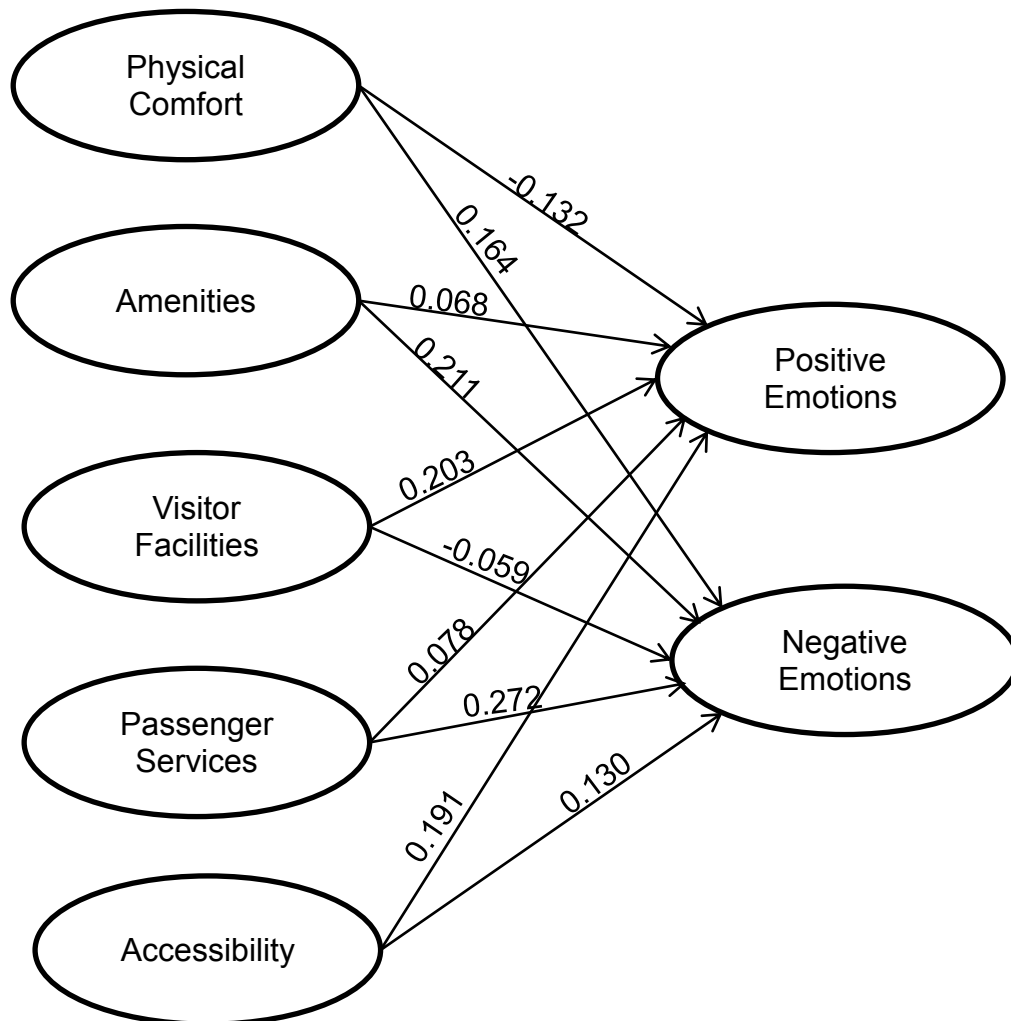
Item	1: Positive emotions	2: Negative emotions
Fulfilled	0.889	
Happy	0.851	
Encouraged	0.842	
Pleased	0.838	
Content	0.835	
Excited	0.765	
Optimistic	0.761	
Relaxed	0.608	
Calm	0.460	
Tense		0.850
Disappointed		0.841
Worried		0.839
Irritated		0.834
Frustrated		0.812
Unfulfilled		0.804
Statistics:		
Mean value (standard deviation)	2.98 (0.810)	1.54 (0.791)
Cronbach Alpha (reliability coefficient)	0.926	0.931
Inter-item correlation	0.58	0.69
Total variance explained	67.8%	
Kaiser-Meyer-Olkin measure of sampling adequacy	0.905	

The two factors explain 67.8% of the variance and all have Eigenvalues greater than 1.0. The reliability coefficients range from 0.926 to 0.931 and the inter-item correlation values are 0.58 and 0.69, respectively. The latter implies that there is internal consistency for all the factors. The Kaiser-Meyer-Olkin measure of sampling adequacy of 0.905 and Barlett's Test of Sphericity also showed statistical significance ($p < 0.001$) which indicates that patterns of correlation are relatively compact and yielded distinct and reliable factors (Pallant, 2010) each. Factor 1 (positive emotions) had the highest mean value of 2.98, whilst Factor 2 (negative emotions) obtained a mean value of 1.54. This indicates that visitors overall experienced more positive than negative emotions.

Results of the structural equation modelling

Based on the results obtained from the factor analyses, the significance of the relationships between the airport experience factors and positive and negative emotions was further tested using structural equation modelling (Figure 1).

Figure 1: Representation of the structural relationship between factors



The results of the SEM presented yielded a statistically acceptable version of the theoretical model following a series of refinements. The regression weights for the model depicted in Figure 1 are listed in Table 3 and suggest a satisfactory fit. The Chi-square divided by the degrees of freedom was equal to 3.68, thus falling within the limits of 2.00 and 5.00 established by Wheaton et al. (1977) and Tabachnick and Fidell (2007). Two more indices were employed in order to assess

the fitness of the model. One was the comparative fit index (CFI) which was equal to 0.83. Since the CFI value must be >0.90, the value of 0.83 can be considered as a borderline value. Finally, a root mean square error of approximation (RMSEA) value of 0.74 with a 90% confidence interval [0.72; 0.77] was obtained. A RMSEA value of <0.10 is considered to be an acceptable fit. The CFI and RMSEA values are supported by Ballentyne et al. (2011) and Blunch (2012).

Table 3: Maximum likelihood estimates – regression weights

		Standardised regression weights	Estimate	P label
POSITIVE	Physical comfort → Positive emotions	-0.132	-0.115	0.219
	Amenities → Positive emotions	0.068	0.061	0.398
	Visitor facilities → Positive emotions	0.203	0.188	0.005**
	Passenger services → Positive emotions	0.078	0.107	0.332
	Accessibility → Positive emotions	0.191	0.141	0.029**
NEGATIVE	Physical comfort → Negative emotions	0.164	0.136	0.143
	Amenities → Negative emotions	0.211	0.180	0.012**
	Visitor facilities → Negative emotions	-0.059	-0.051	0.429
	Passenger services → Negative emotions	-0.272	-0.352	0.002**
	Accessibility → Negative emotions	-0.130	-0.090	0.152
Note: ** Statistically significant where $p < 0.05$				

From Table 3 it is clear that the path coefficients of individual terms were statistically significant. When analysing the path coefficients for the assumptions of the airport service environment affecting visitors' emotions, it is clear ($p < 0.05$), that the path coefficients for *Visitor facilities* and *Accessibility* with *positive emotions* and *Amenities* and *Passenger services* with *negative emotions* were statistically significant.

Findings and Managerial Implications

From the results of the study, it is clear that there were five service environment elements that can be identified from the visitors' perspective as the most prominent in influencing their airport experience. These five elements are: *Physical comfort*, *Amenities*, *Visitor facilities*, *Passenger services* and *Accessibility*. The elements *Physical comfort*, *Accessibility* and *Passenger services* compare well with the literature that identified similar elements; however the elements from this study were labelled differently according to their suitability for this airport related-research. Comparable service elements gleaned from literature that compare well with the

results of this study are: physical layout, functionality, physical facilities and employee involvement (Berman & Evans, 1995; Bitner, 1992; Booms & Bitner, 1982; Harris & Ezech, 2008; Kim & Moon, 2009; Lucas, 2003; Newman, 2007; Turley & Milliman, 2000; Wakefield & Blodgett, 1994; Westbrook, 1981). The elements *Amenities* and *Visitor facilities* are, however, specific and unique to this study. Additionally, this research also confirms the studies by Brunner-Sperdin et al. (2012), Jeon and Kim (2012) and Kim and Moon (2009) in the sense that the service environment influences visitors' emotions and, in this case, both positively and negatively so. The results showed that visitors overall experienced more positive than negative emotions, with the positive emotions scoring a higher mean value. This finding demonstrates that the current service environment at the international airport contributes towards a positive airport experience for visitors, since it evokes positive emotions amongst visitors. Airport management should therefore ensure that they maintain the current service levels and focus on service environment elements; they should continue research initiatives in order to ensure that service elements consistently

address the experience needs of visitors. Based on the above findings, the following managerial implications can be highlighted, and suggestions can be made:

Firstly, the service element *Visitor facilities* showed a statistically significant relationship with visitor's *positive emotions*. This indicates that the current facilities offered to visitors at the international airport have a positive influence on airport visitors and will likely lead towards increased spending and return visits (approach behaviour). Airport management should ensure that the needs of visitors are continuously evaluated and researched to guarantee that the facilities on offer at the international airport meet the demand of visitors. This service environment element is also a unique and contributory aspect of the current research.

Secondly, the SEM showed a statistically significant relationship between *Accessibility* and *positive emotions*. As previously mentioned, the accessibility/spatial layout of a destination or attraction is regarded as critical throughout service environment research as having an influence on visitors' experiences and emotions (Bitner, 1992; Booms & Bitner, 1982; Kim & Moon, 2009; Newman, 2007; Westbrook, 1981). This research confirms that the accessibility of the international airport is important to visitors and has a significant influence on their positive emotions. Airport management should therefore continue to update and maintain the physical layout of the airport and ensure that it remains user-friendly for airport visitors by maintaining signage throughout the airport; ensuring that information is available to visitors in different languages, and that airport staff members who are available to assist visitors are clearly visible.

Thirdly, a statistically significant relationship between *Amenities* and *negative emotions* proved that the current offering of amenities at the international airport evoke negative emotions within

airport visitors. This could lead to a negative airport experience, dissatisfaction, an unwillingness to spend time at the airport and also to visitors not being motivated to spend money at the international airport. Airport management should therefore investigate the reasons why airport visitors encounter negative emotions in terms of amenities at the airport. This could be addressed by providing more quiet areas and day rooms within the airport; creating recreation areas for children; having cheerful and creative displays in the airport, and having staff available to assist with travel-related information on South Africa (such as travel agents). The above could create positive emotions and a positive experience amongst visitors, which could lead to higher levels of satisfaction.

Fourthly, *Passenger services* and *negative emotions* showed a statistically significant relationship indicating a negative experience for airport visitors. The negative regression value explains that the more negatively visitors experience *passenger services*, the more intensely negative emotions will be evoked. Therefore, airport management should concentrate on the level and quality of *passenger services* at the international airport and scrutinise the reasons why visitors have a negative experience and feel dissatisfied with the *passenger services* at the airport. For example, currently there is no free Wi-Fi available and this aspect needs to be addressed as visitors often want to use free Wi-Fi services. Furthermore, staff assisting visitors from check-in to boarding should aim at delivering quality customer service and experiences for visitors as these seem to constitute a key point in the airport where unpleasant experiences are created. However, passenger services such as check-in are not under the control of the airport and this issue should perhaps then be taken up with the airlines.

CONCLUSION

This research confirms that service environments play a decisive role in

creating pleasant emotional reactions amongst airport visitors that has a significant bearing on their overall experiences at such an environment. Recognising the importance of airport service environments to visitors' experience is increasingly gaining ground because the physical service environment influences visitor's judgement about the services they have received. At the same time, the role of emotion has gained increased attention as a central element in understanding service encounters and experiences.

The purpose of this study was to identify those service elements that influence visitor's emotions and, consequently, their airport experiences. It was found that the service elements *Visitor facilities* and *Accessibility* evoke positive emotions such as feeling happy, pleased, optimistic, excited, and fulfilled amongst airport visitors. On the other hand, the service elements *Amenities* and *Passenger services* evoke emotions such as feeling disappointed, irritated, frustrated, tense and unfulfilled.

This study makes a unique contribution to the field; this is because service environment elements have not been tested in previous studies. Rather, the literature has tended to treat these as exploratory aspects used to identify important influential elements as recognised from airport visitors' point of view. Furthermore, this study was a first of its kind to be conducted at an international airport in South Africa. Based on the results of this research, it is recommended that attention should be paid to the service environment elements at the airport to ensure that positive emotions are created and negative emotions are eliminated to ensure satisfaction amongst airport visitors and, consequently, to increase the amount of money spent by airport visitors.

This study has identified a limitation in the sense that no similar research has been conducted up to date which could be used for benchmarking this study, which makes

this study unique but unbenchmarked. The authors have, to the best of their knowledge, synthesised the research and results. It is therefore proposed that similar research should be conducted at other airports in order to compare results, draw comparisons from this specific research and to develop a standardised measuring instrument that can be used by the management of international airports so that they can provide those elements that will yield positive airport experiences.

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