

## Safety Factors in Mega Event

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### Abstracts

*Global tourism has increased throughout the 1990s, with the biggest surge occurring in the Asia-Pacific region. Long-distance travel is also increasing, and at a rate faster than the global average. The opportunities for event tourism appear to be strong almost everywhere, although we know from recent history that recessions like IMF impacted on these destinations.*

*Along with this upward trend, competition for more desirable tourists is also surging, so destinations cannot be complacent (Getz, 1997). Event tourism is appearing as the powerful method in the fierce competition around the tourism industry. This paper investigated the safety factors considered by visitors of 2000 Gyeongju World Culture Expo in Korea and analyzed the correlation between the safety factors and the demographic characteristics of the visitors.*

### INTRODUCTION

As the economic benefits of event tourism, a number of mega-events can reduce tourism outflows from the host country by as much as half, increase inflow by a similar proportion and eventually generate tourist expenditure (Vanhove and Witt, 1987). From above viewpoint, international events like 2000 Gyeongju World Culture Expo have been held annually in Korea since 1991 in which the local government system started.

The main roles of event are to enhance the image of communities and attract

tourists (Kotler and Haider and Rein, 1993), to strengthen destination attractiveness as 'drawing power' (Mill and Morrison, 1985), and so on. Focused on the destination image, the research (Sirakaya and Sheppard and McLellan, 1997) about the effect of perceived safety at a potential vacation destination showed that destination marketers, travel agents, and hospitality industry members should be concerned with improving their images when such images are negative with regard to safety. An economic loss from accidents caused by ignoring safety can be classified as a direct cost and indirect (hidden) cost. The original Heinrich's research resulting in the 4 to 1 ratios for indirect to direct costs was made in 1926 (Heinrich and Peterson and Roos, 1980).

Event industry in Korea does not seriously recognize the importance of the safety management against accidents known for tarnishing the destination images. Moreover few safety standards or studies for event industry cannot be found.

## LITERATURE REVIEW

Safety can be defined as any device for preventing an accident (Webster's New World Dictionary, 1984) and 'freedom from the occurrence or risk of injury, or loss (The Random House Dictionary of The English Language, 1987). Kwon (1999) describes safety as a state that is free from the accident. According to Heinrich, the accident which causes the injury is in turn invariably caused or permitted directly by the unsafe act of a person and/or a mechanical or physical hazard (Heinrich and Peterson and Roos, 1980). The above studies reasonably lead that an accident is the major factor of safety.

The Occupational Safety and Health Administration (OSHA) in United States Department of Labor promulgated occupational safety and health standards for general industry except tourism-related industry (1989). In case of commercial diving industry, the standards include diving safety manual, procedures covering all diving operations, procedures for emergency care, criteria for diver training and certification. Various factors influencing accidents were studied in a few researches (e.g., Lichtenstein et al., 1978; Leonard, 1999). Especially Leonard (1999) insisted that a primary function of warnings and instructions that provide safety information is to modify the behavior of the recipients to avoid or at least mitigate the hazard.

It is acknowledged that, within tourism studies, tourism researchers have generated very few researches about tourists' safety which are usually related destination image (e.g. Clift et al., 1996; Page et al., 1994), tourist behavior (e.g. Johnston, 1989; Cossar et al., 1990; Bewes, 1993; Cossar, 1995; Sirakaya et al., 1997;

Kwon et al., 1998), tourists' death abroad (e.g. Paxiao et al., 1991), safety factors (Pinhey and Iverson, 1994), traveler choice models (Zins, 1998), and safety checklist in restaurant (Stokes, 1982).

## DATA COLLECTION and ANALYSIS

### Survey

Data used to investigate safety factors of those who visited 2000 Gyeongju World Culture Expo as a mega-event were obtained during 15-30 October, 2000 at Gyeongju city in Korea. If visitors agreed voluntarily to participate, a two-page questionnaire written in Korean was given with a small gift, so all of the respondents were Korean.

The self-administered questionnaire includes questions pertaining to demographics, priorities for safety, and satisfactions with the safety in this event place. The statements on a scale of 1 to 5 were used. Additionally, the questionnaire was pretested for completeness, wording, sequence, and other potential errors using a pretest sample of 40 respondents similar to those who participated in the actual study (Churchill, 1995). Of the 220 questionnaires, about 199 were completed, representing a response rate of 90.4%. A profile of the demographic variables was presented using frequency distributions (Table 1).

### Analysis

Analysis consisted of three steps. First, the 15 statements of safety were factor analyzed using a varimax rotation procedure, and reliability coefficients for delineated factors were obtained. Second, the delineated factor groupings of satisfaction with safety were compared across the three demographic attributes such as gender, education, and age using *t*-test and ANOVA. Third, the relation between satisfaction with safety and intention to re-visit were analyzed using multiple regression.

## RESULTS

The results of a factor analysis of 15 safety items are reported in Table 2. Four factors, which explained 60.7% of the overall variance, were identified as dimensions of safety and labeled (1) Hygiene status of event, (2) Disabled/elderly people related-facility of event place, (3) Safety facility of event place, and (4)

Emergency facility of event place. Each dimension was labeled based on the characteristics of the safety variables that are part of the different factors. The eigenvalues of all the dimensions were higher than 1.0 and the reliability coefficients were higher than 0.70.

**Table 1. Demographic Profile of Respondents**

Characteristics	Frequency	Percentage
<b>Gender</b>		
Male	109	54.8
Female	90	45.2
<b>Residence</b>		
Gyeongju	19	9.5
Busan	31	15.6
Taegu	66	33.2
Other places	83	41.7
<b>Education</b>		
High school or less	73	36.7
Undergraduate	115	57.8
Graduate or over	11	5.5
<b>Age</b>		
Under 20	5	2.5
20 - 29	90	45.2
30 - 39	62	31.2
40 - 49	34	17.1
50 or over	8	4.0

**Table 2. Factor Analysis Results of Safety Consciousness**

Variables /Factors	Emergency facility	Safety facility	Hygiene status	Disabled/elderly people related-facility
Emergency escape guide sign	.19715	<b>.84434</b>	.06638	.05283
Fire extinguishing facility	.27767	<b>.82171</b>	.01042	.14401
Safety of recreation equipment	.14375	<b>.70547</b>	.18247	.32832
Warning sign	.23983	<b>.73290</b>	.22162	.17380
Clearness of event place	-.06410	.07847	<b>.79488</b>	.08560
Hygiene(status) of restaurant food	.17236	.22149	<b>.76151</b>	-.02479
Clearness of restroom	.16771	.04466	<b>.75684</b>	.24262
Clearness of water-supply equip.	.27151	.06068	<b>.66804</b>	.23725
Facility for senior	.17660	.22916	.15956	<b>.83563</b>
Facility for disabled person	.15447	.15030	.16183	<b>.86424</b>
Service for missing children	.42832	.23153	.19670	<b>.56767</b>
Sign for drug store	<b>.78105</b>	.28217	.19355	.20197
Sign for broadcasting room	<b>.83220</b>	.23401	.12442	.07462
Sign for police station	<b>.83762</b>	.19050	.06158	.22380
Sign for emergency room	<b>.83656</b>	.18546	.15174	.15547
Eigenvalue	6.298	1.840	1.409	1.204
Reliability Coefficient	0.904	0.854	0.782	0.812
Variance Explained	42.00	12.30	9.40	8.00

Table 3 provides the results of the *t*-tests of the four safety factors and overall satisfaction by gender. The study reveals that significant differences exist between male visitors and female visitors with respect to Hygiene status.

These results indicated that the male group was more satisfied with all factors except Emergency facility than the female group, whereas the mean values of the female group are all lower than neutral, 3.0.

**Table 3. T-test Results of Satisfaction with Safety by Gender**

	Male			Female			T	p-value
	Number	Mean	Sd	Number	Mean	Sd		
Emergency facility	109	2.54	.84	90	2.64	.76	-0.94	.347
Safety facility	109	2.76	.70	90	2.73	.59	0.36	.716
Hygiene status	109	3.11	.75	90	2.91	.64	1.99	.048**
Disabled/elderly people-related facility	109	2.85	.83	90	2.85	.70	0.08	.937
Overall satisfaction	109	2.82	.61	90	2.78	.50	0.42	.677

\*\*\*  $p < 0.01$  \*\*  $0.01 < p < 0.05$   $0.05 < p < 0.1$  S/D = Standard Deviation

The results of *t*-tests of the four safety factors and another factor, Overall satisfaction, by education background are presented in Table 4. Between the high school or less segment and the undergraduate or over segment, statistically significant differences were noted in Emergency facility, Safety facility and Hygiene status. Moreover, the mean values about all factors of the high school or less are also higher than those of the undergraduate or over. These findings suggest that the less educated the visitors are, the more satisfied with safety they are, while the mean values of the higher educated group and the undergraduate or over are all lower than neutral, 3.0.

**Table 4. T-test Results of Satisfaction with Safety by Education**

	High school or less			Undergraduate or over			T	p-value
	Number	Mean	Sd	Number	Mean	Sd		
Emergency facility	73	2.72	.84	126	2.51	.77	1.75	.081*
Safety facility	73	2.90	.68	126	2.66	.62	2.59	.010***
Hygiene status	73	3.11	.84	126	2.87	.80	2.25	.025**
Disabled/elderly people-related facility	73	2.85	.76	126	2.84	.79	0.13	.900
Overall satisfaction	73	2.89	.63	126	2.72	.52	0.62	.539

\*\*\*  $p < 0.01$  \*\*  $0.01 < p < 0.05$   $0.05 < p < 0.1$  S/D = Standard Deviation

Results of the analysis of covariance for the five safety scales by age are

displayed in Table 5. This analysis revealed that for all scales, significant differences existed in Safety facility. These results mean that respondents who are old or young were satisfied with the factors listed in Table 5 at similar degrees, while the 40 or over group was more satisfied with all factors except Hygiene status with a mean score of 2.91 than any other groups.

**Table 5. ANOVA Results of Satisfaction with Safety by Age**

	29 or less		30-39		40 or over		F	p-value
	Number	Mean	Number	Mean	Number	Mean		
Emergency facility	95	2.51	62	2.56	42	2.78	1.646	0.195
Safety facility	95	2.64	62	2.89	42	2.97	2.741	0.049**
Hygiene status	95	2.99	62	3.07	42	3.00	0.248	0.781
Disabled/elderly people-related facility	95	2.76	62	2.89	42	2.99	1.489	0.228
Overall satisfaction	95	2.73	62	2.84	42	2.91	1.767	0.174

\*\*\* p<0.01 \*\* 0.01<p<0.05 0.05<p<0.1 S/D = Standard Deviation

The regression results of 'To what extent did the satisfaction with safety influence your intention to re-visit' are shown in Table 6. The independent variables for this analysis were represented by the four safety factors. While Emergency facility and Disabled/elderly people-related facility do not significantly affect visitor's intention to re-visit, the coefficients are statistically significant in two factors: Safety facility and Hygiene status. Especially, the factor of Safety facility appears to be the strongest influence to the visitors' decision to visit again. The goodness of fit test shows that the results explain 49% of the variation in the dependent variable Intention to Re-visit.

In summary, the results suggest that the more visitors are satisfied with Safety facility, and Hygiene status, the stronger they have intention to re-visit.

**Table 6. Regression Results for the Relation between Satisfaction and Intention to Re-visit**

	B	SE B	Beta	T	p-value	
Emergency facility	-0.005	.092	-0.004	-0.055	.956	R <sup>2</sup> =.495
Safety facility	0.439	.111	.309	3.967	.000***	F=15.725
Hygiene status	0.303	.092	.232	3.293	.001***	p-value=.000
Disabled/elderly people-related facility	0.101	.095	.085	1.065	.288	

\*\*\* p<0.01 \*\* 0.01<p<0.05 0.05<p<0.1 S/D = Standard Deviation

## CONCLUSION

Mega-event is an emerging market because of its role to enhance the destination image and attract tourists in the tourism industry which is acknowledged as a business selling positive holiday experiences to improve one's quality of life (Clift and Page, 1996). While concerning safety in this market may affect tourist perception of the destination and pose a competitive factor for destination, there are quite a few researches on the tourist safety within tourism studies to assess tourist satisfaction. Thus this study analyzed safety factors centering on visitor satisfaction and intention to re-visit among Korean visitors to 2000 Gyeongju World Culture Expo as mega-event in Korea. Safety facility, Hygiene status, Emergency facility, Disabled/elderly people related facility, and Overall satisfaction were used as safety factors. The results of this paper are as follows:

- 1) The male group was significantly more satisfied with Hygiene status than the female group.
- 2) The less educated the visitors are, the more satisfied with the safety factors (Emergency facility, Safety facility, Hygiene status) they are.
- 3) The older visitors are, the more they are satisfied with Safety facility.
- 4) The more visitors are satisfied with Safety facility and Emergency facility, the stronger they have intention to re-visit.

The results analyzed in this paper would be only a starting point for further researches. Thus, based upon this paper, the future study should be examined more specifically about the relations between various socioeconomic status and safety concerns.

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