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Redevelopment of country image scale questionnaire

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ABSTRACT

The main purpose of this study was to examine the psychometric properties of the revised measures of country image previously used in Nagashima (1970) and Martin and Eroglu (1993). Items for Korea sport factor (KSF) and Korea cultural factor (KCF) were added to broaden to better shape perceptions on Korea's country image. A confirmatory factor analysis (CFA) tested the hypothesized 5-factor model with 23 items and its validity and sensitivity were confirmed. The researchers believe that the addition of KSF and KCF to the existing country image scale questionnaire (CISQ) would help sport administrators and policy makers measure the image of a country in a more effective and broad way.

Keywords: Country image, confirmatory factor analysis, Korea sport factor, Korea cultural factor.

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INTRODUCTION

Nagashima (1970) described country image as the picture, the reputation, the stereotype that businessmen and consumers attach to products of a specific country. He also added that country image is created and influenced by numerous variables including political history and traditions, prior economic power, representative products, and perceived national characteristics. Other studies have shown country image to be a set of observed beliefs that is determined by the descriptive and inferential information about a country (Martin and Eroglu, 1993) and the complete set of people's thoughts, opinions, and impressions of a country.

The concept of country image can be approached from multiple directions and for different reasons. Previous studies show country image via a product specific standpoint (Nagashima, 1970) and destination-specific standpoint (Crompton, 1979; Um and Crompton, 1990) as well as both an internal (self image) and external image (mirror image). Nagashima (1970) explained country image by using price and value, services and engineering, advertising and reputation, design and style, and consumer's profile dimensions. White (1979) also used product-specific country image for items such as price, technicality, quality, workmanship, inventiveness, serviceability, advertising, durability, reliability, and brand recognition. Other examples of country image being used as destination-specific reason include Crompton (1979) who views destination image as a complete set of a person's thoughts, opinions, and impressions of a destination and Um and Crompton (1990) who claim destination image as a comprehensive concept created from the perceived sentiments of the destination's tourism efforts. Roth and Romeo (1992) well summarized production and marketing image dimensions in the Table 1 (p. 481). The overlapped dimensions out of 7 different studies include: innovation, prestige, design and workmanship. Roth and Diamantopoulos (2009) conducted a more contemporary and thorough review on country dimensions in Table 2 (pp. 729-732) and some of country dimensions include environmental factor, economic factor, political factor, cultural factor, appearance, people, society, labor, vocational training, and work culture, etc. Aronczyk (2008) asserted that "nationally imagined identity is compromised by a number of indigenous and exogenous factors including the following elements of the spectre of cultural homogeneity or, conversely, hyper-hybridity; stronger allegiances at the subnational, supranational or transnational levels" (*p*. 43). However, interestingly, none of the papers described in the previous literature considered "Sport Factor" as a

Table 1. Demographics of participants (N = 125).

Variable	N (%)
Gender	
Male	53 (42.4)
Female	72 (57.6)
Age	
Under 20	28 (22.4)
20-29	84 (67.2)
30-39	5 (4.0)
40-49	2 (1.6)
50-59	4 (3.2)
60 and over	2 (1.6)
Race	
Asian	3 (2.4)
Hispanic	6 (4.8)
Indian	1 (0.8)
White	108 (86.4)
Other	7 (5.6)
Education	
High School	2 (1.6)
Some college	42 (33.6)
Undergraduate	45 (36.0)
Graduate or higher	36 (28.8)

potential dimension to measure the country image.

Nation branding has recently attracted interests of researchers and practitioners in measuring the multi-dimensional blend of elements of a nation (Johnson, 2011). Anholt (1998) explained that a competitive edge over other nations could be achieved by strategic positioning and also asserted that countries that have negative images could re-brand themselves by actively and strategically repositioning. As more and more countries invest a significant amount of resources to increase “the brand value of a country” to attract more tourists, support domestic businesses, and boost the country’s exports. Chernatony (2008) also described that nation branding would help facilitate robust international partnerships, reestablish international credibility and reverse international ratings downgrades, stabilize currency and enhance nation building. According to Morgan, Pritchard, and Pride (2002), many nations seem to have same or at least similar goal which is to attract tourists to their target destinations by highlighting the unique values of what each country has over other competing counterparts. It is important to note that the nation branding does not exist in a vacuum and thus needs to be controlled and managed strategically. Holt (2004) introduced the process of cultural branding with explains that the nation brand should be interacted with one’s environment creatively and strategically. Also, Aaker and Joachimsthaler (2000) asserted that the process of brand building must be considered not as a short-term solution, but as a long-term commitment that may take several years before substantial results may occur. Anholt (2011) advised the Korean government’s nation-branding strategy needs to be revised “because Korean achievements for its own population, its successes and its prosperity will never automatically result in any kind of enhance reputation, simply because they do not benefit the (foreign) ‘consumer’. (p. 295)

Separate from the traditional, national branding measurement tools that looked primarily at non sport-specific factors, an alternative assessment model on “Brand Korea” adding specific sport and cultural variables could be opportune and necessary, the researchers agreed. Korea Sport Factor (KSF) and Korea Cultural Factor (KCF) were derived as important factors from qualitative research completed between 2009 and 2011 among the 45 global sport management immersion class participants (Choi et al., 2011). KSF’s key factors include individual celebrity-athletes, professional sports franchises, hosting global sporting events (F-1 Korea and IAAF Meet), performances at the international competitions such as the FIFA World Cup, the Olympic Games, the WBC, and etc. KCF featured variables such as interacting with Korean sport industry professionals and local sport management students, experiencing Korean cultural hotspots, visiting historical destinations, eating Korean food, and learning about the Korean business customs. Thus, the purpose of this current study was to examine the psychometric properties of the revised measures of country image previously used in Nagashima (1970) and Martin and Eroglu (1993). Items for Korea Sport Factor (KSF) and Korea Cultural Factor (KCF) were added to broaden to better shape perceptions on Korea’s national brand.

MATERIALS AND METHODS

Participants

A convenience sample of education major students in a Northwestern college of the United Stated and a total of 125 students participated in the study, yielding a response rate of 97%. The IRB application submitted to the IRB committee and has been approved (Table 1).

Instrumentation

The survey instrument, Country Image Scale Questionnaire (CISQ), containing 14 items developed by Martin and Eroglu (1993) was used. Although four dimensions of country image were originally conceptualized (that is, political, economic, technological, and social desirability), the final form of the scale has three dimensions composed of a political factor with 5 items, an economic factor with 5 items, and a technological factor with 4 items. Item scores could be summed within dimension (factor) to form separate indices for the economic, political, and technological factors, and all 14-item

Table 2. Factor structure and associated reliability coefficients with five factors.

Factor	Item content	Factor loadings	Reliability coefficient
Political	Civilian government	.82	.76
	Democratic	.72	
	Labor cost*		
	Free market system	.49	
	Product quality*		
	Welfare system*		
	Standard of Living*		
Economic	Industrialization	.77	.69
	Mass produced products	.73	
	Economical development		
	Agricultural*		
Technological	Literacy rate	.85	.79
	Technological research	.78	
	Economic environment	.49	
Sports	Hosting global sport event	.94	.83
	Professional sport franchise	.93	
	International competition performance	.54	
	Abundant sport celebrities*		
Cultural	Ease of communication*		.71
	Understanding differences in customs	.78	
	Food options		
	Friendly people	.49	
	Historical destination*	.45	

Note: * These items were deleted because they did not load high onto the designated factor or to increase internal consistency reliability.

scores could be summed to form one overall country image composite. Martin and Eroglu (1993) reported a coefficient alpha of .925 for the entire 14-item country image scale, with alphas ranging from .581 to .887 for the three country image dimensions. Items for *sport* factor (4 items) and *cultural* factor (5 items) were added to the original CISQ to broaden diverse aspects of country image and to better shape the perceptions of country image. All items were scored on 7-point semantic differential scales.

Process

To address the sensitivity of CISQ, researchers obtained a 40-minute promotional sports video [titled as “South Korea: Focused on Excellence (2010)] and then cut the video to only highlight select section of the full videothat ended up with only 10 minutes. These newly created clips contained the top performances of Yuna Kim, gold medalist of the 2010 Olympics in Vancouver; Y.E. Yang’s defeat of Tiger Woods in PGA; and Se-Ri Pak’s U.S. Open winning moment in LPGA. Fifty-five participants of 125 were shown a 10-minute long video describing the success of Korean sports and celebrity athletes. After watching the video clips, students were asked to fill out the CISQ.

Statistical analysis

All data was analyzed in IBM SPSS 22.0 (IBM Corp., Armonk, NY, USA) and Mplus 7.1. Quantitative data was analyzed with descriptive statistics including frequency and percentage to describe the sample. “Factor structure and reliability of CISQ” using principal factors extraction with varimax rotation and internal consistency reliability coefficients of Cronbach’s α were computed to investigate the latent structure and reliability of such structure of the modified CISQ, respectively. Loadings of less than .40 were suppressed. Confirmatory factor analysis (CFA) was then conducted to see its model fit for the revised CISQ. As it was impossible to obtain a quantitative measure of validity without a concurrent or predicted measurement, sensitivity analyses were conducted to examine validity of the scale by investigating the ability of the CISQ to discriminate between the subgroups of participation using an independent sample t-test.

RESULTS

Exploratory factor analysis

Item and scale statistics were calculated with descriptive statistics as well as measures of skewness and kurtosis. All items followed normal distribution. Principal factors extraction with promax rotation was performed through SPSS 22.0 on 23 items from the CISQ from a sample of 125 college students. The Kaiser-Meyer-Olkin measure

verified the sampling adequacy for the analysis, KMO = .84 and Bartlett's test of sphericity χ^2 (153) = 1020.54, p < .001 indicated that correlations between items were sufficiently large. Five factors were extracted with eigenvalues over Kaiser's criterion of 1 and in combination explained 55.03% of the variance. Loadings of variables on factors and reliability coefficients are shown in Table 2. Variables are ordered and grouped by size to facilitate interpretation. Loadings under .40 were suppressed. All subscales of the CISQ had acceptable reliabilities (Cronbach's α = .69 to .83).

Validity of CISQ

After establishing the reliability of scale, the researchers were required to test validity and sensitivity of CISQ. Construct validity is established when the measure correctly measures its targeted variable and was addressed with a Confirmatory Factor Analysis (CFA) testing the data fit of the hypothesized factor structure presented in Figure 1 in Mplus 7.1. Based on the recommendations of Hu and Bentler (1999), there are some measures of model fit. First, the chi-squared goodness-of-fit statistic measures the difference between the sample covariance matrix and the covariance matrix based on the model. Statistically significant values of the χ^2 indicate a poorly fitting model. Second, the cutoff values of >.95 for Comparative-Fit-Index (CFI) and Tucker-Lewis Index (TLI) as well as that of < .05 for Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) should be used to support adequate fit (Figure 1).

Confirmatory factor analysis for the initial model with 5-factor and 14-item Country Image Scale revealed that the model fit was not good (χ^2 = 154.93 [*df* = 81], p = .000; RMSEA = .09; CFI = .89; TLI = .87; SRMR =.09). However, the model fit improved substantially when item 10 was dropped due to a poor loading on *economic* factor and when an error between item 15 and item 16, both of which address *sport*, were permitted to covary because these items measured the same content area (χ^2= 88.73 [*df* = 67], p = .04; RMSEA = .05; CFI = .97; TLI = .95; SRMR = .06). The p-value for χ^2 statistics were near .05 and the CFI and TLI fit indices also suggested an appropriate model. Low standard errors of measurement for all parameter estimates and statistically significant estimates for all coefficients also indicated appropriate model specification.

High positive correlations among factors (.64 to .80), except correlations between *economic* and others (.42 to .58), suggested the presence of a higher order factor, *Country Image*. A final confirmatory factor analysis was conducted to confirm the existence of such higher order factor. The model fit became worse for Chi-square statistics but the other fit indices remained acceptable (χ^2= 101.01 [*df* = 71], p = .01; RMSEA = .05; CFI = .95; TLI = .94; SRMR = .06). Higher-order model has potentially been affected by *economic* factor having only two items. Standard errors of measurement for all parameter estimates were still low and estimates for all coefficients also remained statistically significant. Convergent validity was addressed by checking factor loadings for items measuring the same constructs to see if they are substantially high and statistically significant (Lin and Ding, 2005; Hair et al, 2006).

Among a total of 125 research participants, 55 were asked to watch the clips and then fill out CISQ instruments. As seen in Table 3, a 10-min Korean sport promotional video significantly affected *political* [t(123) = -2.08, p = .040] and *cultural* [t(123) = -2.97, p = .004]. However, no significant effects were found in economic, technological, and sport factors. Gender also significantly affected *political* [t(123) = 3.99, p = .000] and *technological* [t(123) = 2.77, p = .006], and overall [t(123) = 3.46, p = .001].

DISCUSSION AND CONCLUSION

Development of CISQ has implications for brand managers, event organizers, and sport administrators. It is adequate to conclude that the addition of sports factor and cultural factor to the existing Country Image Scale developed by Martin and Eroglu (1993) will help policy makers, international sports event organizers and sport administrators measure the image of a country in a more effective way. Naturally, any study is limited by necessity in order to maintain manageability. There are several limitations of the present study. First, the decision to limit the population models to the model will restrict generalizability of results to models of Country Image of other countries. Second, the sample size of 125 for SEM may not have large enough though we had generally high communalities above .60 in 10 of 23 items without cross loadings and with several variables loading highly on each factor indicating relatively strong data. Jackson (2001) recommended larger samples when there were large numbers of observed variables to be estimated. The limited sample size may have affected the reliability and validity of the statistical methods utilized and the results, so future research may repeat the study with a larger sample size. Third, the principal factors extraction generated a hypothesized factor structure and the structure was then confirmed by the CFA on the same dataset, which may make the results of this study less informative. Obtaining a secondary dataset to conduct CFA was not practically feasible so it is necessary to perform a secondary CFA with different dataset. Lastly, our research was based on one empirical study of which participants from only one country, the U.S. Since all the participants came from the U.S., the follow-up study is necessary with large number of respondents selected from different countries to confirm its validity and

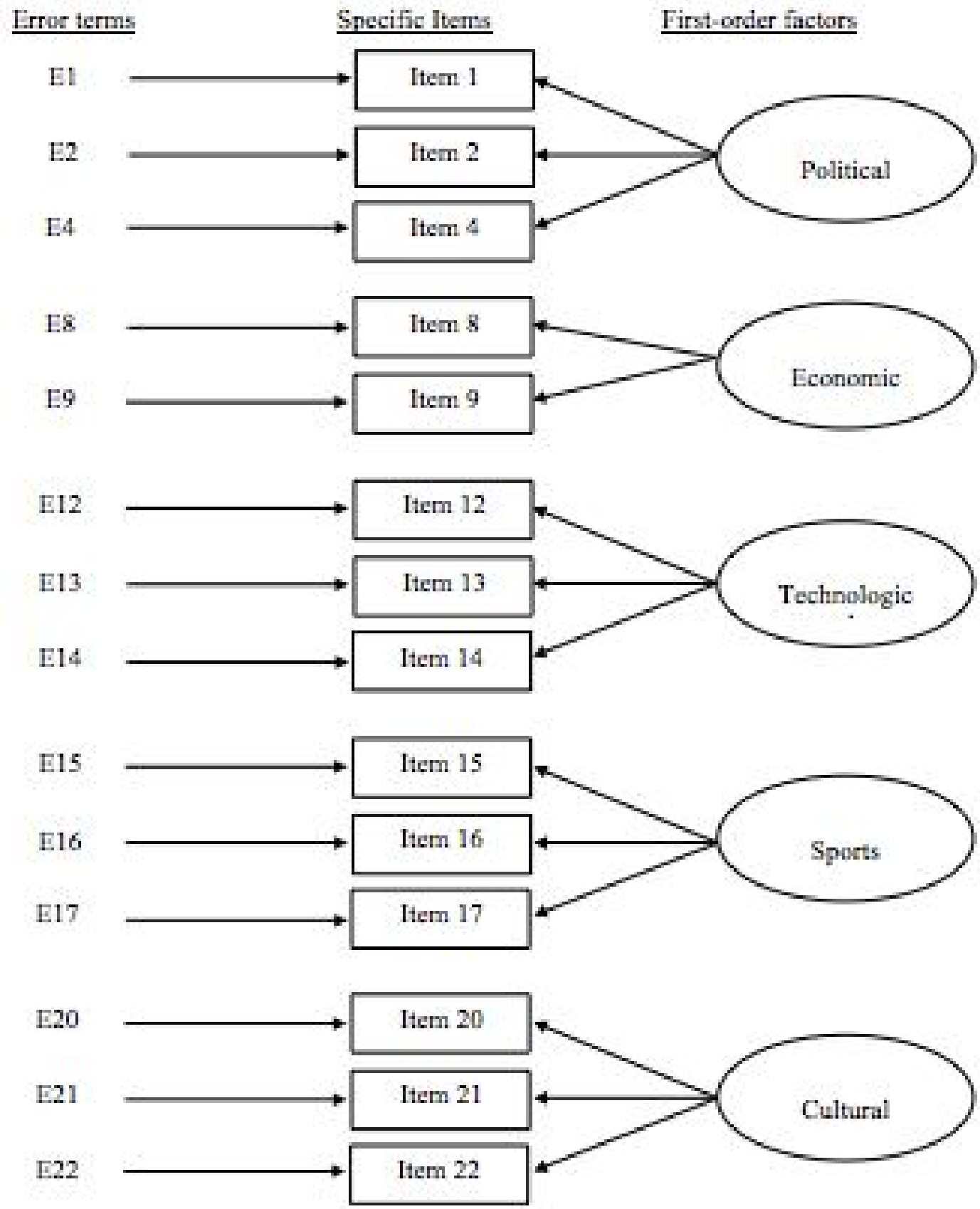

Figure 1. Initial hypothesized factor structure of the modified CISQ.

Table 3. Means, standard deviations, Skewness, and Kurtosis of the five dimensions of CISQ (N = 125).

Variable (*N* = 125)	*M*	*SD*	t	p
Economic factor				
Male (*N* = 53)	10.54	2.40	1.97	.051
Female (*N* = 72)	9.75	2.10		
Watched a video (*N* = 55)	9.65	2.40	-1.92	.058
Did not watch a video (*N* = 70)	10.42	2.10		
Technological factor				
Male (*N* = 53)	15.66	3.64	2.77	.006**
Female (*N* = 72)	13.79	3.79		
Watched a video (*N* = 55)	14.92	3.19	.888	.376
Did not watch a video (*N* = 70)	14.31	4.26		
Political factor				
Male (*N* = 53)	13.98	3.41	3.99	.000***
Female (*N* = 72)	11.50	3.45		
Watched a video (*N* = 55)	11.80	3.56	-2.08	.040*
Did not watch a video (*N* = 70)	13.14	3.61		
Sport factor				
Male (*N* = 53)	11.90	4.09	1.96	.052
Female (*N* = 72)	10.50	3.85		
Watched a video (*N* = 55)	11.03	3.63	-0.15	.883
Did not watch a video (*N* = 70)	11.14	4.29		
Cultural factor				
Male (*N* = 53)	13.71	3.68	1.50	.137
Female (*N* = 72)	12.72	3.66		
Watched a video (*N* = 55)	12.07	3.55	-2.97	.004**
Did not watch a video (*N* = 70)	13.98	3.60		
Overall				
Male (*N* = 53)	65.81	12.90	3.46	.001***
Female (*N* = 72)	58.26	11.42		
Watched a video (*N* = 55)	59.49	10.59	-1.562	.121
Did not watch a video (*N* = 70)	63.01	13.84		

reliability of this scale.

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