

Cross-Cultural Validation of the Athlete Brand Image Scale among Consumers in the Republic of Korea

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Abstract: This study aims to translate and adapt the Athlete Brand Image Scale developed for North American consumers and to examine its reliability and validity among consumers in the Republic of Korea. Furthermore, the predictive validity of the scale is examined by analyzing the impact of athlete brand image on consumer attitudes. In 2024, data were collected from consumers across the Republic of Korea who had purchased products endorsed by athletes within the past month, using a quota random sampling method through the professional online survey company Embrain. A pretest was conducted with 100 consumers, followed by a main survey with 500 consumers. Confirmatory factor analysis was employed to verify the reliability and validity of the measurement instrument, assessing factor loadings, composite reliability, average variance extracted, and correlations among factors. Finally, structural equation modeling was used to examine the predictive validity of the scale. In this study, physical attractiveness demonstrated the highest factor loading. Athlete brand image was found to have a positive impact on consumer attitudes, confirming the predictive validity of the scale. The results also confirm that the Athlete Brand Image Scale is applicable in the Republic of Korea and can predict the attitudes of consumers in the Republic of Korea.

Keywords: Athlete brand image; Scale validation; Consumer attitudes; Cross-cultural study; Sports marketing

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1. Introduction

Strengthening brand equity is one of the important issues in the modern business world ^[1]. Nilson argued that a brand is not merely a name but should possess clear value, distinguishing itself from other brands with appeal and unique identity. A brand can be conceptualized as a name and symbol that identifies an organization's or enterprise's products or services.

Brand image is a critical aspect of brand communication. A strong brand image strategy helps differentiate a brand from competitors and assists consumers in forming positive evaluations and associations. Previous research has shown that brand image directly affects brand equity. Therefore, establishing a positive brand

image is an essential strategy for successful brands in the contemporary business context, and this strategy is equally indispensable in the sports industry.

2. Theoretical background

2.1. Associative network theory and brand image

Brand image refers to consumers' understanding of a particular brand, which is reflected in customers' minds through brand communication^[2]. Brand image is the sum of various elements that add meaning and value to a brand, and consumers evaluate brands based on the images they have formed. A positive brand image helps consumers develop trust in and identification with an organization, reinforcing the brand's competitive advantage in a fierce market.

2.2. Concept of athlete brand

Arai *et al.* defined athlete brand as the public image of an athlete, constructed through symbolic meaning and value using names, faces, or other brand elements^[3]. The development of an athlete brand is based on what fans need to know: who the athlete is, what they have done, and how they differ from other athletes. Athlete brand research has become an independent focus of inquiry within the field of sports management.

2.3. Source Credibility Model

The Source Credibility Model provides a theoretical foundation for athlete brand construction. The dimensions of attractiveness, trustworthiness, and expertise proposed by Ohanian are also applicable to athlete brand image. Brand credibility is regarded as an important prerequisite for brand loyalty or brand choice. Credibility consists of two components: reliability and expertise. Ohanian included physical attractiveness as a dimension of source credibility^[4]. Communicators with high physical attractiveness have been shown to exert more positive effects on opinion change, product evaluations, and other outcomes.

3. Research methods

3.1. Research subjects and data collection

This study collected data in 2024 from consumers across all regions of the Republic of Korea who had purchased products endorsed by athletes within the past month. Through the professional online survey company Embrain, a quota random sampling method was employed with equal gender distribution. A pretest was conducted with 100 consumers, followed by a main survey with 500 consumers.

3.2. Selection of athletes for evaluation

Athlete brand is defined as the public image through which symbolic meaning is established in the market via names, appearances, or other elements; therefore, multiple well-known athletes who have formed such public images were selected as evaluation targets^[5]. Specifically, 28 athletes from various sports were selected based on criteria including the Forbes 2023 list of the world's highest-paid athletes: Cristiano Ronaldo (soccer), Lionel Messi (soccer), Kylian Mbappé (soccer), Neymar (soccer), LeBron James (basketball), Stephen Curry (basketball), Kevin Durant (basketball), Giannis Antetokounmpo (basketball), Dustin Johnson (golf), Phil Mickelson (golf), Rory McIlroy (golf), Tiger Woods (golf), Travis Kelce (American football), Rob Gronkowski

(American football), Patrick Mahomes (American football), Aaron Rodgers (American football), Max Scherzer (baseball), Shohei Ohtani (baseball), Aaron Judge (baseball), Fernando Tatis Jr. (baseball), Roger Federer (tennis), Serena Williams (tennis), Rafael Nadal (tennis), Novak Djokovic (tennis), Anthony Joshua (boxing), Tyson Fury (boxing), Conor McGregor (MMA), Jon Jones (MMA). Participants selected the athlete they were most familiar with from the list and responded based on their chosen athlete.

3.3. Research procedure

A pretest was first conducted with 100 participants. The purpose of the pretest was to verify the accuracy of the measurement instrument. Participants assisted in identifying and modifying potential issues in understanding and responding to the questionnaire items. The research team evaluated the clarity and comprehensibility of the questionnaire during this process and modified items as needed. Based on the pretest results, the final questionnaire for this study was completed. Following the pretest, the main survey was administered to 500 participants. Participants first reviewed the list of athletes, selected the athlete they knew best or were most familiar with, and then responded to each questionnaire item with respect to the chosen athlete.

3.4. Data processing and analysis

This study collected and analyzed data from 100 pretest responses and 500 main survey questionnaire responses. Specifically, descriptive statistical analysis was conducted using the statistical software R to understand the trends and demographic characteristics of the collected data. In addition, confirmatory factor analysis was employed to verify the model fit, reliability, and validity of the measurement model, assessing factor loadings, composite reliability, average variance extracted, and correlations among factors. Finally, structural equation modeling was used to examine the predictive validity of the Athlete Brand Image Scale.

4. Research results

4.1. Pretest

To evaluate the face validity and preliminary factor loadings of the translated Athlete Brand Image Scale, a pretest was conducted with 100 participants. First, confirmatory factor analysis was performed to assess overall model fit, reliability, and validity. The results showed the following model fit indices: $\chi^2/df = 1.911$, CFI = 0.865, TLI = 0.850, RMSEA = 0.095, SRMR = 0.105. While these model fit indices were considered relatively low, this may have been due to the insufficiency of the sample size ($n = 100$) relative to the number of items (30) comprising the measurement model. Therefore, overall factor loadings were evaluated. The items “The playing style of the athlete I selected is charismatic (0.681)” and “The personal lifestyle of the athlete I selected is a topic of conversation (0.659)” demonstrated relatively low factor loadings, suggesting that the translated wording or sentence meaning may not have been accurately conveyed. Consequently, these two items were retranslated and revised to “The playing style of the athlete I selected is attractive” and “The daily life of the athlete I selected receives a lot of attention,” respectively.

4.2. Main survey: Descriptive statistical analysis

Among the 500 participants in the main survey, 250 were male (50%), and 250 were female (50%). The age distribution was as follows: 20–29 years: 90 participants (18%), 30–39 years: 168 participants (33.6%), 40–49 years: 160 participants (32%), 50–59 years: 64 participants (12.8%), and 60–69 years: 18 participants (3.6%).

Education levels were: high school or below: 43 participants (8.6%), associate degree: 72 participants (14.4%), bachelor's degree: 307 participants (61.4%), master's degree: 63 participants (12.6%), and doctoral degree: 15 participants (3%). Occupational distribution was: students: 46 participants (9.2%), office workers: 292 participants (58.4%), civil servants: 30 participants (6%), self-employed: 46 participants (9.2%), professionals: 34 participants (6.8%), and others: 52 participants (10.4%).

The proportion of athletes selected by consumers was as follows: Cristiano Ronaldo: 72 participants (14.4%), Lionel Messi: 153 participants (30.6%), Kylian Mbappé: 15 participants (3%), Neymar: 11 participants (2.2%), LeBron James: 11 participants (2.2%), Stephen Curry: 12 participants (2.4%), Kevin Durant: 1 participant (0.2%), Tiger Woods: 35 participants (7%), Shohei Ohtani: 98 participants (19.6%), Aaron Judge: 1 participant (0.2%), Roger Federer: 5 participants (1%), Serena Williams: 2 participants (0.4%), Rafael Nadal: 2 participants (0.4%), Novak Djokovic: 8 participants (1.6%), Anthony Joshua: 2 participants (0.4%), Tyson Fury: 3 participants (0.6%), Conor McGregor: 55 participants (11%), and Jon Jones: 12 participants (2.4%).

4.3. Confirmatory factor analysis of the Athlete Brand Image Scale

This study conducted confirmatory factor analysis to verify the model fit and overall reliability and validity of the Athlete Brand Image Scale. The fit indices for the Athlete Brand Image Scale model were: $\chi^2/df = 3.607$, CFI = 0.917, TLI = 0.908, RMSEA = 0.072, SRMR = 0.091, $P < 0.001$, which collectively met the criteria for acceptable model fit. Therefore, all fit indices indicated that the model adequately explained the collected data, and the model-implied correlation matrix generated by this measurement model was consistent with the sample correlation matrix. Specifically, to verify the construct validity of the measurement model, this study examined factor loadings, composite reliability, and average variance extracted (AVE). All measurement items had factor loadings ranging from 0.700 to 0.928, all exceeding 0.50 and statistically significant. Composite reliability ranged from 0.797 to 0.933, and AVE values for each factor ranged from 0.591 to 0.823. These results indicate that the measurement instrument ensured convergent validity. Although the correlation coefficients between playing style and sport expertise, and between interpersonal relationships and role model, were relatively high, some degree of correlation is plausible as they belong to the same dimension. Overall, the correlation coefficients of the Athlete Brand Image Scale model were within acceptable ranges, and the measurement instrument demonstrated both convergent and discriminant validity. As shown in **Table 1**, all measurement items exhibited factor loadings ranging from 0.700 to 0.928, with composite reliability (CR) values between 0.797 and 0.933 and average variance extracted (AVE) values between 0.591 and 0.823, confirming satisfactory convergent validity of the scale.

Table 2 presents the correlation matrix among the ten first-order factors and three second-order factors of the Athlete Brand Image Scale. As shown in **Table 2**, the correlation coefficients among the ten first-order factors ranged from 0.120 to 0.884. Notably, relatively high correlations were observed between athletic expertise and playing style ($r = 0.856$), between playing style and sportsmanship ($r = 0.736$), and between role model and relationship effort ($r = 0.884$), which is plausible given that they belong to the same higher-order dimension. More importantly, the square roots of AVE values (shown in bold on the diagonal) were all greater than the inter-construct correlation coefficients, confirming satisfactory discriminant validity of the measurement model. Among the three second-order factors, athletic performance showed the strongest correlation with marketable lifestyle ($r = 0.612$), while attractive appearance exhibited relatively weaker correlations with the other two dimensions ($r = 0.307$ with athletic performance; $r = 0.379$ with marketable lifestyle).

4.4. Verification of predictive validity of the Athlete Brand Image Scale

After examining the overall model fit and construct validity of the Athlete Brand Image Scale, structural equation modeling was conducted to verify the predictive validity of the scale by testing the model fit and overall reliability and validity of the research model incorporating consumer attitudes. The results showed that the fit indices for this research model were: $\chi^2/df = 3.338$, CFI = 0.916, TLI = 0.908, RMSEA = 0.068, SRMR = 0.087, collectively meeting the criteria for acceptable model fit. Furthermore, the path coefficient between athlete brand image and consumer attitudes was $\beta = 0.715$, $P < 0.001$. Based on these results, it was determined that the Athlete Brand Image Scale ensures predictive validity. As illustrated in **Figure 1**, the structural model demonstrates that athlete brand image, as a second-order construct comprising athletic performance, attractive appearance, and marketable lifestyle, exerts a significant positive effect on consumer attitudes ($\beta = 0.715$, $P < 0.001$).

Table 1. Results of confirmatory factor analysis: Convergent validity of the Athlete Brand Image Scale

Factor	Measured value	C.R.	AVE
Athletic Expertise		0.700	0.873
The athlete I chose demonstrates overwhelming ability in their sport.	0.864		
The athlete I chose appears to have extensive knowledge about their sport.	0.800		
The athlete I chose possesses outstanding athletic skills in their sport.	0.842		
Playing Style		0.750	0.898
The playing style of the athlete I chose is distinctive from other athletes.	0.843		
The playing style of the athlete I chose is exciting to watch.	0.889		
The playing style of the athlete I chose is charismatic.	0.868		
Sportsmanship		0.785	0.915
The athlete I chose shows sportsmanship during games.	0.872		
The athlete I chose shows respect toward opponents and other players.	0.889		
The athlete I chose demonstrates fair play.	0.897		
Rivalry		0.719	0.885
The rivalries of the athlete I chose are exciting.	0.869		
The athlete I chose performs well against major rivals.	0.872		
The rivalries of the athlete I chose are dramatic.	0.803		
Physical Attractiveness		0.702	0.873
The athlete I chose is physically attractive.	0.828		
The athlete I chose is outwardly beautiful/handsome.	0.854		
The athlete I chose is sexy.	0.831		
Symbol (or Fashion Symbol)		0.823	0.933
The casual fashion of the athlete I chose is appealing.	0.901		
The athlete I chose is stylish.	0.925		
The athlete I chose shows trendy fashion.	0.894		
Physical Excellence		0.713	0.866
The athlete I chose maintains a good physique.	0.857		
The athlete I chose has a physique well-suited to their sport.	0.876		
The athlete I chose looks healthy.	0.769		
Life Story		0.591	0.797
The athlete I chose has dramatic anecdotes in their life.	0.705		

The athlete I chose lives a dramatic life.	0.896		
The athlete I chose has a personal lifestyle that is a topic of conversation.	0.700		
Role Model		0.705	0.877
The athlete I chose fulfills social responsibility.	0.828		
The athlete I chose is a good role model for others.	0.859		
The athlete I chose is a good leader in our community.	0.834		
Relationship Effort (Fan Interaction)		0.805	0.924
The athlete I chose expresses gratitude to fans and spectators.	0.902		
The athlete I chose responds well to fans.	0.928		
The athlete I chose makes an effort to engage with fans.	0.862		

The goodness-of-fit indices of this measurement model are presented as $\chi^2/df = 3.607$, CFI = 0.917, TLI = 0.908, and RMSEA = 0.072.

Table 2. Correlation matrix among constructs of the Athlete Brand Image Scale

AVE	ath	com	spo	riv	phy	sym	bod	lif	rol	rel
ath	0.700									
com	0.856	0.750								
spo	0.685	0.736	0.785							
riv	0.722	0.776	0.621	0.719						
phy	0.257	0.276	0.221	0.233	0.702					
sym	0.166	0.178	0.143	0.151	0.568	0.823				
bod	0.227	0.243	0.195	0.205	0.775	0.502	0.713			
lif	0.286	0.307	0.246	0.259	0.186	0.120	0.164	0.592		
rol	0.544	0.585	0.468	0.493	0.354	0.229	0.312	0.522	0.705	
rel	0.484	0.520	0.416	0.439	0.315	0.204	0.278	0.464	0.884	0.805
ap		aa	ml							
ap	1.000									
aa	0.307	1.000								
ml	0.612	0.379	1.000							

ath=Expertise; com=Game Style; spo=Sportsmanship; riv=Rivalry; phy=Physical Attractiveness; sym=Symbolism; bod=Physical Excellence; lif=Life Narrative; rol=Role Model; rel=Relational Effort; ap=Athletic Performance; aa=Attractive Appearance; ml=Commodified Lifestyle; bold values = AVE values



Figure 1. Path Coefficients and Results of the Research Model

Figure 1. Structural equation model: Effect of athlete brand image on consumer attitudes

5. Discussion

First, this study confirmed the applicability of the Athlete Brand Image Scale in the Republic of Korea. The data analysis verified the reliability and validity of the scale. This implies that, in consumer research in the Republic of Korea, athlete brand image can be conceptualized as three second-order factors—athletic performance, attractive appearance, and marketable lifestyle—along with their corresponding ten first-order factors.

Second, this study revealed meaningful cross-cultural differences compared to previous research. While the convergence patterns of the three main dimensions into higher-order factors were nearly identical, differences were observed in the convergence patterns of the subdimensions.

Regarding attractive appearance, symbol had the highest factor loading in the prior study, whereas physical attractiveness had the highest factor loading in this study. This suggests that North American consumers prioritize fashion symbolism as the primary criterion for evaluating an athlete's appearance, while Asian consumers prioritize physical attractiveness elements such as facial features as the primary criterion.

Regarding marketable lifestyle, the athlete's life story did not converge significantly into lifestyle in the prior study, but it did converge significantly in this study. This indicates that North American consumers place less emphasis on life story when evaluating an athlete's lifestyle, whereas Asian consumers consider life story to be a significant contributing factor.

6. Conclusion

First, the Athlete Brand Image Scale demonstrated reliability and validity among consumers in the Republic of Korea, and the convergence pattern of the higher-order dimensions was consistent with previous research.

Second, the convergence patterns of subdimensions into higher-order dimensions differed from those in

prior research. In the previous study, the factor loading for life story—a subdimension of marketable lifestyle—was not significant, but it was significant in this study. Furthermore, while relationship effort showed the highest factor loading in the prior study, role model showed the highest factor loading in this study. Regarding attractive appearance, symbol had the highest factor loading in the previous study, whereas physical attractiveness had the highest factor loading in this study. Therefore, it can be concluded that at the higher-order factor level, the cognitive structure of athlete brand image exhibits similar patterns between North America and the Republic of Korea, but at the lower-order factor level, slightly different patterns emerge.

Third, athlete brand image was found to have a positive impact on attitudes of consumers in the Republic of Korea, confirming its predictive validity.

Disclosure statement

The author declares no conflict of interest.

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