

Development and validation of a scale for acculturation in the context of spectator sports among Asian Americans

YOUNGJIK LEE¹, JAE-PIL HA²

¹Department of Sports Industry, Korea National University of Transportation, SOUTH KOREA

²Department of Physical Education, Gyeongsang National University, SOUTH KOREA

Published online: April 30, 2024

(Accepted for publication April 15, 2024)

DOI:10.7752/jpes.2024.04091

Abstract:

Given the lack of research on acculturation in spectator sports, the creation of a valid and reliable measurement scale is imperative for sport marketers and researchers seeking to engage ethnic minority groups. This study aimed to develop a scale with strong psychometric properties to assess the influence of acculturation on sports spectator consumption behavior. The resulting scale, termed the Spectating Sport Acculturation Scale (SSAS), demonstrated robust psychometric properties, including validity and reliability, across two different studies. Specifically, the SSAS consists of two distinct subscales: SSAS-SCO (measuring sports in the culture of origin) and SSAS-SAC (measuring sports in American culture). Each of these subscales contains an equal number of comparable items (15 items each) that pertain to four dimensions: cultural identity (3 items), cultural behavior (4 items), language usage and proficiency (4 items), and cultural knowledge (4 items). Both SSAS-SCO and SSAS-SAC subscales exhibited good psychometric properties as evidenced by Exploratory Factor Analyses in Study 1. Additionally, Cronbach's alpha coefficients for all domains within the two subscales exceeded .70, demonstrating good internal consistency. To confirm the factor structure of both subscales, Confirmatory Factor Analyses (CFAs) were employed. The results of CFAs affirmed that both the SSAS-SCO and SSAS-SAC subscales exhibited a satisfactory alignment with the data. Moreover, the factor loadings, Average Variance Extracted (AVE), and Cronbach's alpha coefficients yielded results in line with expectations. Furthermore, concurrent validity was established by assessing the correlations between each of the subscales and the level of ethnic identity. In the future, it will be essential to validate and establish reliability for the 30-item SSAS with other ethnic minority groups in the United States for cross-validation purposes.

Key Words: Acculturation, Scale development, Validity, Reliability, Spectator sport, Asian

Introduction

In recent times, immigration has become a natural phenomenon worldwide. Specifically, immigration has played a significant role in the population growth and cultural evolution throughout much of American history. As of September 2021, the total number of legal immigrants in the United States was approximately 44 million. This number would increase significantly if other groups, such as sojourners (e.g., international students and travelers), refugees, and undocumented immigrants, were taken into consideration. Due to the migration of diverse ethnic groups, many societies have become culturally plural, and individuals from various cultural and ethnic backgrounds coexist in the same society (Berry, 1997). One of the primary challenges faced by newcomers is how to adapt to the host or dominant society. This issue has been primarily studied in the fields of cross-cultural psychology and business disciplines, under the concept of acculturation.

Acculturation is defined as the process through which newcomers adopt the values and expectations of the host society, but they are not necessarily accepted or assimilated into the dominant culture (Kennett, 2005). Sport has been utilized in the acculturation process to help newcomers adapt to a new culture (Coakley, 2009). For instance, individuals are more likely to participate in or watch traditionally popular sports (e.g., American football) in the U.S. to become part of the mainstream culture (Ha, Hums, & Greenwell, 2014, 2016; Ha, Choi, & Ha, 2018). Furthermore, ethnic group members can acculturate into the value system and structure of the host society through their involvement in sports. On the other hand, sport has often been used as a means of maintaining their ethnic and cultural identity (Min & Kim, 2009; Stodolska & Alexandris, 2004). For example, some newcomers tend to watch and participate more in traditional popular sports from their own ethnic cultures, such as ice hockey for Canadians and soccer for Italians (Harrolle & Trail, 2007; Pons, Laroche, Nyeck, Perreault, 2001).

In the pursuit of identifying diverse sport consumers across various consumer niches, researchers in sport management and marketing have recently shown an interest in understanding sport consumers with different ethnic and cultural backgrounds (e.g., Armstrong, 1998; Armstrong & Peretto Stratta, 2004; Ha et al., 2014, 2016; Harrolle & Trail, 2007; Ko, Claussen, Rinehart, & Hur, 2008; McCarthy, 1998). Their research

areas have encompassed diverse sport consumption behaviors, including motivations and team identifications (Kwon & Trail, 2001), sporting event consumption and orientation (Pon et al., 2001; Allen, 2009), identification with sports (Harrolle & Trail, 2001), sport media consumption (Allen, 2009), and the frequency of participation in physical activity and sports (Yoh, Yang, & Gordon, 2008; Allen, 2009).

While previous studies have acknowledged that the construct of acculturation helps explain various sport consumption behaviors, no study has paid particular attention to developing an acculturation scale for ethnic groups in a sport context, except for Allen's work (2009). Allen (2009) took the initial step in developing an acculturation scale for sport participation, known as the Sport and Cultural Identity Scale (SCIS), which consists of two dimensions: (a) cultural maintenance and (b) cultural assimilation. However, the SCIS developed by Allen did not adequately reflect a bi-dimensional approach (which we will explain in detail later), despite being the current dominant model of acculturation measurement and a key component of acculturation. Additionally, his scale primarily focused on sport participation as a form of consumption behavior, rather than sport spectatorship. Furthermore, considering that acculturation is a complex process that extends across diverse domains (Nguyen, Messe, & Stollak, 1999), his scale, which reflected only a single domain (i.e., the behavioral aspect of sport), exhibited a lack of an adequate measure for other important domains in a sport context, such as the psychological aspects of acculturation, including identity, values, and attitudes.

To gain a better understanding of various spectating behaviors among ethnic groups, it is imperative to develop a valid and reliable measurement for acculturation in a spectating sport setting. Moreover, in order to establish a robust body of knowledge in any field of scientific research, the development of a psychometrically sound measurement scale is an essential and foundational process (Netemeyer, Bearden, & Sharma, 2003). Given that research on acculturation in a spectator sport setting is still in its early stages, the development of a valid and reliable measurement scale also assists sport marketers and researchers in expanding their fan base to include ethnic minority groups. Thus, the purpose of the current study was to develop a scale with sound psychometric properties to measure the construct of acculturation that influences sport spectator consumption behavior.

Before proceeding with the development of the measurement scale, we will begin by reviewing the concept of acculturation. Following this, we will examine two acculturation models, namely the unidimensional and bi-dimensional models, which serve as the foundation for measuring the acculturation process. Subsequently, we will specify the domains and generate items derived from existing acculturation-related scales.

Review of Literature

Acculturation

Traditionally, acculturation has been defined as the process of cultural change that occurs when newcomers, such as immigrants or sojourners, enter the host or dominant society (Berry, 1990). While acculturation was initially proposed as a group-level phenomenon, it is also widely approached as an individual-level phenomenon, known as psychological acculturation (Berry, 1990; Berry, Kim, & Boski, 1988). At the group level, changes manifest in political organization, the economy, and social structures, whereas at the individual level, changes are reflected in one's behaviors, values, identity, and attitudes. In this paper, the term 'acculturation' specifically refers to the individual-level process, encompassing changes in behaviors, values, and cultural attitudes that occur when individuals become part of the dominant society (Berry, 2003).

When individuals migrate to a new society, they often make choices regarding which domains (e.g., language, food, dress, entertainment, media) they will adapt to and which they will retain from their original culture. For instance, an individual might choose to attend or watch a popular sport in the dominant culture as a means of acculturating to it, while deciding not to adopt popular foods from that culture. This aspect is well-reflected in current measurements of acculturation. In fact, a review of the literature reveals that most existing measures assess one or more of the following domains, which are indicative of the acculturation process: language, identity, values, food, mass media consumption, participation in cultural activities, cultural knowledge, entertainment, social engagement, and relationships with ethnic friends (which will be explained in detail later). Therefore, some of these identified domains should also be considered in the development of an acculturation scale in a sport context.

Conceptualization and measurements of acculturation

According to the literature review, the measurement of acculturation is based on two key models: (a) the Unidimensional model and (b) the Bi-dimensional model. In the Unidimensional model, acculturation is described as the process of transitioning from one's cultural identity, behaviors, or values to those of the host society over time (Berry, 2003). In this model, the acculturation process occurs along a single continuum, with one pole representing an individual's involvement in their culture of origin, and the other pole representing their involvement in the host culture. Because of this characteristic, this model is often referred to as a bipolar or assimilation model (Nguyen & Von Eye, 2002). Thus, acculturating to the host culture is seen as necessarily accompanied by a weakening of ties to one's culture of origin.

On the other hand, the bi-dimensional model (Berry, 1980, 1990, 1997, 2003) offers a fresh perspective by incorporating the concept of pluralism (Lee, Sobal, & Frongillo, 2003). This model does not conceptualize the acculturation process in a bipolar manner. Instead, it introduces an independence assumption between the

culture of origin and the host culture (Kang, 2006). Advocates of this model contend that newcomers "can have either strong or weak identifications with both their own and the mainstream cultures, and a ... [strong relationship] with one culture does not necessarily imply a weak relationship or low involvement with the dominant culture" (Phinney, 1990, p. 502). Based on this independence assumption, the two dimensions (involvement in one's culture of origin and involvement in the host culture) should be measured separately.

Bipolar-unidimensional measurement. Early acculturation measurement scales were dominated by the bipolar model (e.g., Cuellar, Arnold, & Maldonado, 1995; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). As mentioned earlier, this measurement model assumes that newcomers are located anywhere on a single continuum ranging from unacculturated to acculturated. Individuals positioned in the middle of the continuum are considered bicultural (see Figure 1, adapted from Nguyen & von Eye, 2002). In other words, bicultural individuals are those who are involved in both their culture of origin and the host culture. Additionally, it presumes that there is a perfect inverse relationship between the culture of origin and the host culture, meaning that high involvement in one culture necessitates low involvement in the other (Nguyen, Messe, & Stollak, 1999). Applying the unidimensional model of acculturation to sports, for instance, newcomers tend to give up their traditional popular sports (e.g., soccer for Latinos) while actively participating in or consuming the dominant sports in mainstream society (e.g., American football).

While the unidimensional measurement model has the merit of parsimony and simplicity, many researchers (Cuellar et al., 1995; Mendoza, 1989; Szapocznik, Kurtines, & Fernandez, 1980) have pointed out its limitations. First, it assumes reciprocal exclusion between the two cultures, suggesting that a strong identity in one culture necessarily implies a weak identity in the other. Nguyen and von Eye (2002) suggested that acculturation does not have to be an "either-or" association. The second limitation is its inability to distinguish between bicultural individuals with high involvement in both cultures and those with low involvement in both cultures (Cuellar et al., 1995). Due to this issue, the unidimensional model cannot "distinguish how involvements in each culture are equivalent—whether they are equally high (i.e., a true bicultural person) or equally low" (i.e., a mock bicultural or marginalized person; Nguyen & von Eye, 2002, p. 204)). In other words, both individuals in "true" biculturalism and those in "mock" biculturalism would fall at the midpoint within the unidimensional model of acculturation.



Figure 1. Bipolar model of acculturation

Bi-dimensional model and measurement. To address the limitations of the unidimensional model, many researchers have swiftly developed acculturation scales based on the bi-dimensional model (e.g., Cuellar, Nyberg, Maldonado, & Roberts, 1997; Chung, Kim, & Abreu, 2004; Mendoza, 1989; Nguyen & von Eye, 2002; Stephenson, 2000). In this measurement model, the acculturation process is viewed bi-dimensionally, occurring on two separate continua, each representing a level of adherence to one specific culture (Chung et al., 2004). Consequently, measures based on the bi-dimensional model assess the degree of retention of the heritage culture and the degree of adaptation to the host culture independently. By measuring cultural involvements independently, the bi-dimensional model can provide a metric that identifies individuals as being involved in one culture, both cultures, or neither culture. This is a significant strength of the model. Applying the bi-dimensional model of acculturation to a sport context, for instance, involvement in Americanized sports (e.g., American football) does not necessarily require individuals to relinquish their involvement in their ethnic-specific popular sports (e.g., soccer in the Latino community).

One of the most well-known and respected researchers in the context of the bi-dimensional model of acculturation is Berry (1980, 1990, 1997, 2003). Berry (1990, 1997, 2003) identified four acculturation strategies or attitudes (integration, assimilation, separation, and marginalization) based on two central issues that individuals must grapple with in the host society. The first issue pertains to whether individuals maintain or reject their own cultural values, while the second issue relates to whether they accept or reject the values of the host culture. Figure 2, adapted from Nguyen & von Eye (2002), illustrates these four acculturation strategies in light of these two issues. Specifically, integration occurs when an individual maintains an active interest in their heritage culture while simultaneously showing an interest in the host culture. Assimilation occurs when an individual adopts the values of the host culture and rejects their own cultural values. Separation occurs when an individual rejects their own cultural values and embraces those of the host culture. Marginalization refers to a lack of interest in maintaining one's own cultural values as well as a lack of interest in acquiring the values of the host culture."

Numerous measurements based on the bi-dimensional model, initially conceptualized by Berry (1990), have been developed in recent years by various researchers (e.g., Berry, Kim, Power, Young, & Bujaki, 1989; Cuellar et al., 1995; Mendoza, 1989; Stephenson, 2000; Zea, Asner-Self, Birman, & Buki, 2003). These measurements can generally be categorized into two methods. The first measurement method directly assessed each of the four acculturation strategies mentioned earlier, which include integration, assimilation, separation,

and marginalization, with four corresponding subscales (Berry et al., 1989). Although this method exhibits strong and reliable psychometric properties, it faced criticism due to two main limitations. One limitation was that the items were written with double-barreled questions (Nguyen & von Eye, 2002). The other limitation was the lack of independence among the four subscales. In other words, there were problematic correlations between the four acculturation strategies. For instance, there was a negative correlation between the integration and assimilation subscales, even though the correlation should have been positive (Berry et al., 1989). This problematic correlation makes the measurement vulnerable to issues of construct validity, such as convergent and discriminant validity (Ward & Rana-Deuba, 1999).

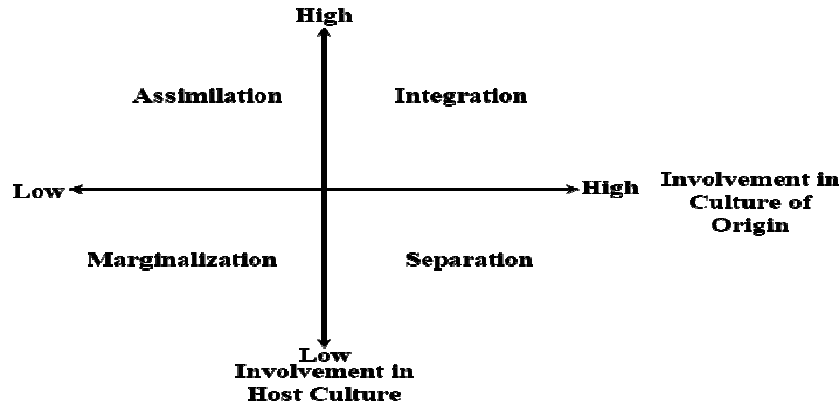


Figure 2. The bi-dimensional model of acculturation

The second measurement method involves an attempt to assess two cultural orientations (i.e., heritage and host culture) using two separate scales. To classify individuals into one of the four acculturation strategies, various cut-off scores have been employed, including median-split, mean, or the proportional distribution of scores within a sample. For instance, an individual with a score above the median on the heritage culture orientation scale and a score below on the host culture orientation scale is categorized as showing separation. In addition to the cut-off score approach, some contemporary researchers use cluster analysis to categorize individuals into various types of acculturation strategies (e.g., Jang, Kim, Chiriboga, & King-Kallimanis, 2007).

In summary, the debate over which measurement model accurately and effectively assesses the acculturation process is not completely resolved. However, theoretical exploration and empirical research on acculturation are shifting from conceptualizing and measuring acculturation using the unidimensional model, which encompasses the assimilation perspective, to the bi-dimensional model in which acculturation occurs within two distinct cultures. Therefore, the current study will develop an acculturation scale based on the bi-dimensional model.

Various domains used in acculturation scales

Whether existing measures are based on the unidimensional or bi-dimensional models, they typically encompass one or more of the following domains that are indicative of acculturation: cultural identity and values, cultural behavior, language use and proficiency, and cultural knowledge. Among these four acculturation domains, the first domain, cultural identity and values, reflects the psychological aspects (i.e., internal aspects) of an individual's cultural orientation (Berry, 1992; Phinney, 1992), while the latter three domains—cultural behavior, language usage and proficiency, and cultural knowledge—reflect the behavioral aspects (i.e., external aspects) of an individual's acculturation (Berry, 1992; Cuellar et al., 1995). The internal domains are generally more resistant to change than the external domains (van de Vijver & Phalet, 2004), likely due to their complex nature. Regarding each of the four domains mentioned above, cultural identity and values encompass an individual's ethnic self-identification, ethnic pride and affiliation, and attitudes and beliefs toward their own cultural society and the host society (Kim & Abreu, 2001). Cultural behavior is typically assessed through factors like friendship selection, food consumption, participation in cultural activities, and media preferences. Language use and proficiency refer to preferences, abilities, and usage in language. Cultural knowledge pertains to the extent to which an individual is familiar with specific information and knowledge about their heritage cultural events (Kim & Abreu, 2001; Zea et al., 2003).

Although some previous studies have focused on the external aspects of acculturation, these external aspects are not necessarily associated with the internal aspects of acculturation, such as changes in cultural attitudes, beliefs, values, or identity. In other words, it is possible for individuals to acculturate behaviorally in the host society (e.g., using English in the U.S., consuming American foods) while simultaneously maintaining the internal aspects of their culture of origin, such as ethnic identity and values. Therefore, considering that assessing the most observable and behavioral aspects of a culture does not necessarily reflect the psychological aspects of the culture, it is of paramount importance to include both the behavioral and psychological domains when developing an acculturation scale in a sports context.

Scale Development

The present study aimed to develop an acculturation scale within the context of spectating sport, referred to as the Spectating Sport Acculturation Scale (SSAS), in two distinct studies. Study 1 encompasses three primary stages. First, the domains of the acculturation construct are specified, and potential items are generated using the existing literature (Stage 1). Subsequently, the specified domains and generated items undergo examination and refinement by a panel of experts to establish content validity (Stage 2). To assess the reliability and validity of the items, data from Sample 1 were collected and analyzed through exploratory factor analyses (EFAs) in Stage 3. Study 2 comprises two additional stages (Stages 4 and 5). To further scrutinize the reliability and validity of the SSAS, a separate set of data (Sample 2) was collected and subjected to confirmatory factor analysis (CFA) in Stage 4. In the final stage (Stage 5), concurrent validity is established by examining the relationships between scores on the SSAS and the degree of ethnic identity. Each of these two studies will be explained in detail.

Study 1

The theoretical model of acculturation employed in the present study is firmly rooted in Berry's bi-dimensional model (1990, 1992, 1997, 2003). In line with this model, the SSAS has been developed to assess an individual's orientation toward sports from both their culture of origin and the American culture (host culture). Therefore, the SSAS consists of two distinct subscales: (a) Orientation toward sports in the culture of origin (SSAS-SCO) and (b) Orientation toward sports in the American culture (SSAS-SAC). Furthermore, each of these subscales encompasses multiple domains that have been identified in the literature.

Specification of the domains and item generation (Stage 1). As previously mentioned, the most widely used domains of acculturation include the following: (a) cultural identity (e.g., Chung, Kim, & Abreu, 2004; Suinn et al., 1987; Zea et al., 2003) and cultural values (e.g., Ward & Kennedy, 1994), (b) cultural behaviors (e.g., Chung et al., 2004; Kang, 2006; Marino, Stuart, & Minas, 2000), (c) language usage and proficiency (e.g., Nguyen & von Eye, 2002; Stephenson, 2000), and (d) cultural knowledge (e.g., Chung et al., 2004). Although language usage and proficiency may be considered part of the cultural behavior domain, the authors have treated it as a separate domain from cultural behavior due to the fact that nearly all existing acculturation scales include language usage and proficiency.

The process of item generation primarily depended on the four aforementioned domains. Initially, the authors adapted items from various existing acculturation scales that measure cultural identity and values (Chung et al., 2004; Zea et al., 2003), cultural behaviors (Allen, 2009; Stephenson, 2000), language usage and proficiency (Cuellar, Arnold, & Maldonado, 1995; Marino, 2000; Stephenson, 2000), and cultural knowledge (Chung et al., 2004; Zea et al., 2003). These items were then modified to align with their use as a measure of acculturation in the context of spectating sports. Additionally, several new items were created to capture the unique characteristics of sports associated with acculturation. In total, 46 items were initially adapted from the literature or generated by the authors to measure orientation toward sports in the culture of origin (SSAS-SCO: 23 items) and orientation toward sports in the American culture (SSAS-SAC: 23 items). All items were measured on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Item Evaluation (Stage 2). Subsequently, all 46 items were evaluated by a panel of three scholars who specialize in sport consumption behavior. Their evaluation aimed to identify item redundancy, assess comprehension, clarify vagueness, and gauge appropriateness. Following this evaluation, the authors decided to delete 16 items, resulting in 30 items for the next stage of SSAS-SCO (15 items) and SSAS-SAC (15 items). For reference, each of the two subscales includes an equal number of parallel items related to the four domains mentioned earlier, including cultural identity (3 items), cultural behavior (4 items), language usage and proficiency (4 items), and cultural knowledge (4 items).

Initial Assessment of Reliability and Validity (Stage 3: Sample 1). To initially analyze the reliability and validity of the generated items, data were collected from Asian college students who identified their culture of origin as Asian at four different universities in the U.S. A total of 400 students were recruited, but 89 participants' surveys were eliminated due to missing data, resulting in a total of 311 usable participants. The participants consisted of 202 males (64.9%) and 109 females (35.1%). The average age of the participants was 25.35 years old ($SD = 3.8$), ranging from 18 to 40 years. Approximately 57.2% of participants ($n = 178$) were born in Asia, while others were born elsewhere ($n = 133$; 42.8%).

Exploratory factor analyses were conducted to examine the factor structure underlying each of the two subscales of the SSAS (SSAS-SCO and SSAS-SAC). An EFA using the maximum likelihood method with a varimax rotation was performed for each of the two subscales to generate a scree plot to determine the possible number of factors. The results of EFAs suggested a four-factor solution for both SSAS subscales, accounting for 56.7% of the variance for SSAS-SCO and 45.4% of the variance for SSAS-SAC. All of the items loaded unambiguously in the expected factors. The factor loadings, means, and standard deviations for the items under each factor are presented in Tables 1 and 2.

To assess criterion-related validity, each of the two SSAS subscale scores was correlated with participants' length of residence in the U.S. The average length of residence was 4.64 years ($SD = 3.6$). As expected, the correlation between SSAS-SCO and the length of residence was significantly negative ($r = -.42$, p

< .05), while the correlation between SSAS-SAC and the length of residence was significantly positive ($r = .36$, $p < .05$). Thus, criterion-related validity was established.

Cronbach alpha coefficients of all domains from the SSAS-SCO and SSAS-SAC were greater than .70 ranging from .73 (Cultural Identity in SSAS-SCO) to .87 (Cultural Knowledge in SSAS-SAC; Nunnally & Bernstein, 1994), demonstrating strong internal consistency (see Table 1 and Table 2).

Table 1. Standardized factor loadings, Means, and SDs through EFAs (SSAS-SCO)

Items	Standardized Factor Loading					
	1	2	3	4	M	SD
Factor 1: Cultural Identity ($\alpha = .73$)						
SSAS-SCO 1: I am proud of being a member of my native country when my native country shows a good performance in an international sport event (e.g., Olympics).	.78	.20	.19	.11	4.91	1.12
SSAS-SCO 2: I feel strong sense of attachment toward athletes from my native country who playing in America	.71	.13	.17	.19	5.11	.89
SSAS-SCO 3: Watching traditionally popular sports in my native country is an important part of my life	.39	.09	.10	.33	3.12	1.08
Factor 2: Cultural Behavior ($\alpha = .78$)						
SSAS-SCO 4: I like to watch traditionally popular sports in my native country	.12	.78	.09	.02	4.26	1.16
SSAS-SCO 5: If I have the opportunity, I enjoy going to attend/watch sports games with acquaintances from my native country	.22	.77	.17	.13	4.02	1.01
SSAS-SCO 6: I like to watch/attend a sport event where the athletes of my own country are playing	.29	.62	.03	.11	5.78	.98
SSAS-SCO 7: I usually watch in sports to network with individuals from my native country	.08	.40	.06	.04	3.08	.92
Factor 3: Language Usage and Proficiency ($\alpha = .82$)						
SSAS-SCO 8: If I have the opportunity, I watch sport-related TV programs in my native language	.12	.08	.78	.06	4.64	.87
SSAS-SCO 9: It is difficult for me to understand sport-related TV programs in my native language	.03	.06	.58	.05	2.88	1.31
SSAS-SCO 10: I like to read/listen sports news in my native language	.09	.10	.57	.03	4.01	.98
SSAS-SCO 11: I can easily understand when I watch sport-related TV programs of my native language	.22	.23	.48	.27	5.62	.97
Factor 4: Cultural Knowledge ($\alpha = .76$)						
SSAS-SCO 12: I am familiar with sport star players/coaches from my native country	.09	.10	.04	.83	5.22	1.06
SSAS-SCO 13: I am knowledgeable about the sport history of my native country	.03	.06	.05	.56	3.96	1.13
SSAS-SCO 14 I am familiar with the customs and practices regarding my native country's sports	.02	.09	.04	.55	3.88	1.15
SSAS-SCO 15: I know very well about sport heroes in my native country	.12	.16	.18	.42	5.78	1.06

Table 2. Standardized factor loadings, Means, and SDs through EFAs (SSAS-SAC)

Items	Standardized Factor Loading					
	1	2	3	4	M	SD
Factor 1: Cultural Identity ($\alpha = .81$)						
SSAS-SAC 1: I am proud of being a member of America when the U.S. shows a good performance in an international sport event (e.g., Olympics)	.76	.12	.10	.15	4.21	1.09
SSAS-SAC 2: I feel strong sense of attachment toward American athletes	.72	.20	.19	.08	4.86	.99
SSAS-SAC 3: Watching American traditional popular sports is an important part of my life	.42	.02	.06	.05	2.52	1.32
Factor 2: Cultural Behavior ($\alpha = .74$)						
SSAS-SAC 4: I like to watch traditionally popular sports in American society	.16	.69	.10	.08	4.56	1.01
SSAS-SAC 5: If I have the opportunity, I enjoy going to attend/watch sports games with American acquaintances	.15	.66	.14	.10	4.02	1.18
SSAS-SAC 6: I like to watch/attend a sport event where American athletes are playing	.02	.42	.03	.06	2.68	1.00

SSAS-SAC 7: I usually watch in sports to network with individuals from America	.08	.39	.06	.04	3.08	.92
Factor 3: Language Usage and Proficiency ($\alpha = .77$)						
SSAS-SAC 8: If I have the opportunity, I watch sport-related TV programs in English	.18	.12	.72	.14	5.46	.97
SSAS-SAC 9: It is difficult for me to understand sport-related TV programs in English	.08	.10	.62	.12	3.99	1.36
SSAS-SAC 10: I like to read/listen sports news in English	.19	.08	.59	.17	5.24	.89
SSAS-SAC 11: I can easily understand when I watch speak sport-related TV programs in English	.02	.06	.42	.04	3.86	.97
Factor 4: Cultural Knowledge ($\alpha = .87$)						
SSAS-SAC 12: I am familiar with American sport star players/coaches	.12	.10	.18	.66	5.74	1.15
SSAS-SAC 13: I am knowledgeable about American sport history	.06	.03	.04	.52	3.74	1.03
SSAS-SAC 14: I am familiar with cultural customs and practices regarding American sports	.05	.07	.03	.48	4.02	1.00
SSAS-SAC 15: I know very well about American sport heroes	.22	.18	.16	.47	5.45	1.12

Study 2

Confirmation of the Factor Structure (Stage 4: Sample 2). A second set of data were collected to confirm the hypothesized factor structure of the SSAS identified in the Study 1. The 30-item SSAS questionnaire (SSAS-SCO: 15 items, SSAS-SAC: 15 items) was administered to a convenience sample of 300 Asian college students who identified their culture of origin as Asian at the same four universities used for the first data collection. Out of the 300 administered surveys, a total of 278 were determined to be useable for the study. The participants in Sample 2 were 168 males (60.4%) and 110 females (39.6%). They ranged in age from 18 to 37 years with a mean of 22.3 ($SD = 3.5$). A majority of participants were born in Asia ($n = 192$; 69.1%). The length of residence in the U.S. among participants ranged from .4 to 18.5 years, with a mean of 4.82 years ($SD = 4.2$).

Based on the results of the EFAs reported in Study 1, a confirmatory factor analysis (CFA) was conducted for each of the two SSAS subscales (SSAS-SCO and SSAC-SAC) to further study reliability and validity. Each CFA tested the validity of a factor structure derived from the results of the EFA in Study 1. The factor structure for the two SSAS subscales consisted of four correlated latent variables, with the variables representing Cultural Identity (3 items), Cultural Behavior (4 items), Language Usage and Proficiency (4 items), and Cultural Knowledge (4 items).

Results of the first CFA indicated that the measurement model of the SSAC-SCO with 15 items under four factors demonstrates a good fit to the data ($\chi^2/df=221.386/84=2.635$; $RMSEA=.067$ [CI: .059-.078], $CFI=0.94$, $TLI=.93$, $SRMR=.49$). Cronbach's alpha coefficients ranged from .75 (Cultural Knowledge) to .83 (Language Usage and Proficiency) and the identified factors were internally consistent (Nunnally & Bernstein, 1994). All factor loadings (see Table 3) of items on latent factors were statistically significant ($p<.01$). The loadings ranged from .58 (SSAS-SCO 5) to .86 (SSAS-SCO 10). The AVE (Average Variance Extracted) values ranged from .51 (Cultural Identity) to .56 (Language Usage and Proficiency). Furthermore, the AVE values for all factors were larger than the corresponding squared inter-construct correlations, providing support for discriminant validity (Fornell & Larcker, 1981). All Cronbach's alpha coefficients, factor loadings, and AVE values for the SSAC-SCO are shown in Table 3.

Table 3. Results of the SSAS-SCO measurement model

Factors	Items	Factor Loadings	AVE	α
Cultural Identity	SSAS-SCO 1	.80	.51	.78
	SSAS-SCO 2	.68		
	SSAS-SCO 3	.66		
Cultural Behavior	SSAS-SCO 4	.83	.55	.81
	SSAS-SCO 5	.58		
	SSAS-SCO 6	.70		
	SSAS-SCO 7	.84		
Language	SSAS-SCO 8	.77	.56	.83
	SSAS-SCO-9	.55		
	SSAS-SCO 10	.86		
	SSAS-SCO 11	.79		
Cultural Knowledge	SSAS-SCO 12	.66	.51	.75
	SSAS-SCO 13	.65		
	SSAS-SCO 14	.80		
	SSAS-SCO 15	.75		

Similar to the measurement of the SSAC-SCO, the results of the second CFA indicated that the measurement model of the SSAC-SAC with 15 items under four factors demonstrates a good fit to the data ($\chi^2/df=193.732/84=2.306$; $RMSEA=.061$ [CI: .54-.75], $CFI=.95$, $TLI=.96$, $SRMR=.50$). Cronbach's alpha coefficients ranged from .75 (Cultural Knowledge) to .83 (Language Usage and Proficiency) and the identified

factors were internally consistent (Nunnally & Bernstein, 1994). All factor loadings (see Table 4) of items on latent factors were statistically significant ($p < .01$). The loadings ranged from .59 (SSAS-SAC 11) to .87 (SSAS-SAC 9). The AVE values ranged from .53 (Cultural Identity) to .67 (Cultural Behavior). Furthermore, the AVE values for all factors were larger than the corresponding squared inter-construct correlations, providing support for discriminant validity (Fornell & Larcker, 1981). All Cronbach's alpha coefficients, factor loadings, and AVE values for the SSAC-SCO are shown in Table 4.

Table 4. Results of the SSAS-SAC measurement model

Factors	Items	Factor Loadings	AVE	α
Cultural Identity	SSAS-SAC1	.60	.53	.81
	SSAS-SAC 2	.82		
	SSAS-SAC 3	.75		
Cultural Behavior	SSAS-SAC 4	.83	.67	.89
	SSAS-SAC 5	.85		
	SSAS-SAC 6	.75		
	SSAS-SAC 7	.79		
Language Usage and Proficiency	SSAS-SAC 8	.82	.62	.87
	SSAS-SAC-9	.87		
	SSAS-SAC 10	.86		
	SSAS-SAC 11	.59		
	SSAS-SAC 12	.60		
Cultural Knowledge	SSAS-SAC 13	.82	.55	.83
	SSAS-SAC 14	.79		
	SSAS-SAC 15	.75		

Concurrent validity (Stage 5). To assess concurrent validity of the SSAC subscales, scores on ethnic identity were compared with those obtained for each of the two SSAS subscales. Ethnic identity was measured by three items adapted from the Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007). All of the three items are associated with a sense of belongingness and attachment to a culture of origin or ethnic group. We expected that an inverse relationship between the SSAS-SAC and the degree of ethnic identity, whereas a positive relationship between the SSAS-SCO and the degree of ethnic identity. As expected, the correlation between SSAS-SAC and ethnic identity was significantly negative ($r = -.56, p < .01$), whereas the correlation between SSAS-SCO and ethnic identity was significantly positive ($r = .62, p < .01$). Thus, concurrent validity of the SSAS was established.

Discussion

The primary objective of the current research was to develop a valid and reliable measurement scale for assessing the construct of acculturation in the context of spectating sports with Asians. This objective was accomplished through two studies in the development of the SSAC (Spectating Sport Acculturation Scale). The SSAC comprises two subscales: SSAC-SCO and SSAC-SAC. Each of these two subscales encompasses four domains (factors): cultural identity, cultural behavior, language usage and proficiency, and cultural knowledge.

Overall, the SSAS demonstrated strong psychometrical properties. Specifically, both SSAS-SCO and SSAS-SAC subscales exhibited good psychometric properties as evidenced by EFAs (Exploratory Factor Analyses). Each of the two subscales showed good criterion-related validity through a negative correlation with length of residence (SSAS-SCO) and a positive correlation with length of residence (SSAS-SAC). Additionally, Cronbach's alpha coefficients for all domains within the subscales exceeded .70, demonstrating good internal consistency.

To confirm the factor structure of both subscales, Confirmatory Factor Analyses (CFAs) were conducted. The results of the CFAs indicated that both SSAS-SCO and SSAS-SAC subscales demonstrated an acceptable fit to the data. Additionally, factor loadings, Average Variance Extracted (AVE), and Cronbach's alpha coefficients were observed as expected. Furthermore, concurrent validities were established by examining the correlations between each of the subscales and the degree of ethnic identity.

While many scholars in the field of sport consumption behavior have recognized that the concept of acculturation is essential for a better understanding of the sport consumption behavior of ethnic minorities, very little attention has been given to the development of an acculturation scale in a sports context (e.g., Ha, Choi, & Ha, 2018). Although some scholars have developed acculturation scales in a sport context, they have primarily focused on participant sport contexts rather than spectator sport contexts (e.g., Gavira, Oliver, Puyana, & Fernández, 2018). Furthermore, previous studies have failed to incorporate the bi-dimensional perspective, which is the primary theoretical measurement model of acculturation. However, it is worth noting that the 30-item SSAS developed in the current research effectively captures the bi-dimensional perspective in a spectator sport setting.

Conclusions

In this research, we developed an acculturation scale in the context of spectator sports, known as the Spectating Sport Acculturation Scale (SSAS), for use with Asians in the U.S. The results of two studies demonstrated strong psychometric properties of the SSAS in terms of validity and reliability. Specifically, the SSAS comprised two subscales: SSAS-SCO (measuring sports in the culture of origin) and SSAS-SAC (measuring sports in American culture). Each of the two subscales includes an equal number of parallel items (15 items) associated with four dimensions: cultural identity (3 items), cultural behavior (4 items), language usage and proficiency (4 items), and cultural knowledge (4 items). In the future, it will be necessary to further examine its validity and reliability with other ethnic minority groups in the U.S. for cross-validation.

For practical implication, the scale may be useful for sport marketers to segment ethnic minority groups in various groups, because this scale was developed based on the bi-dimensional model of acculturation. For instance, ethnic minority groups may be divided into four groups such as (1) integration group (involvement in both sports in the culture of origin and those in American culture), (2) assimilation group (only involvement in sports of American culture), (3) separation (only involvement in sports of the culture of origin), and (4) marginalization (neither involvement in sports of the culture of origin nor in those of American culture). The data obtained with the SSAS provide useful information for sport marketers on which specific groups should be targeted.

Conflicts of interest

No potential conflict of interest was reported by the authors.

References

- Allen, J. T. (2009). *Sport as a vehicle for socialization and maintenance of cultural identity: International students attending American universities*. Unpublished Doctoral Dissertation, University of Southern Mississippi. U.S.A.
- Armstrong, K. L. (1998). Ten strategies to employ when marketing sport to black consumers. *Sport Marketing Quarterly*, 7(3), 11-18.
- Armstrong, K. L., & Peretto Stratta, T. M. (2004). Market analyses of race and sport Consumption, *Sport Marketing Quarterly*, 13, 7-16.
- Berry, J. W. (1980). Acculturation as varieties of adaptation. In A. M. Padilla (Ed.), *Acculturation: Theory models, and some new findings* (pp. 9-25). Boulder, CO: Westview.
- Berry, J. W. (1990). Psychology of acculturation: Understanding individuals moving between cultures. In R. W. Brislin (Ed.), *Applied cross cultural psychology* (pp. 232-253). Newbury Park, CA: Sage.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review*, 46(1), 5-34.
- Berry, J. W. (2003). Conceptual approaches to acculturation. In J. W. Berry, K. M. Chun, P. Balls Organista & G. Martin (Eds.), *Acculturation: Advances in theory, measurement, and applied research*. (pp. 17-37). Washington, DC: American Psychological Association.
- Berry, J. W., Kim, U., & Boski, P. (1988). Psychological acculturation of immigrants. In Y. Y. Kim & W. B. Gudykunst (Eds.), *Cross-cultural adaptation: Current approaches* (pp. 62-89). Sage Publications, Inc.
- Berry, J. W., Kim, U., Power, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied Psychology: An International Review*, 38(2), 185-206.
- Chung, R. H. G., Kim, B. S. K., & Abreu, J. M. (2004). Asian American multidimensional acculturation scale: Development, factor analysis, reliability, and validity. *Cultural Diversity & Ethnic Minority Psychology*, 10(1), 66-80
- Coakley, J. (2009). *Sport in society: Issues and controversies* (10th ed.). New York, NY: McGraw-Hill.
- Cuellar, I., Arnold, B., & Maldonado, R. (1995). Acculturation rating scale for Mexican American-II: A revision of the original ARSMA Scale. *Hispanic Journal of Behavioral Sciences*, 17, 275-304.
- Cuellar, I., Nyberg, B., Maldonado, R. E., & Roberts, R. E. (1997). Ethnic identity and acculturation in a young adult Mexican-origin population. *Journal of Community Psychology*, 25, 535-549.
- Gavira, J. F., Oliver, A. J. S., Puyana, M. G., & Fernández, (2018). Management of new forms of sports habits in an immigrant population during the acculturation process. *Journal of Physical Education and Sport*, 18(1), 33-40.
- Kennett, C. (2005). *Sport, immigration and multiculturalism: a conceptual analysis*. Center d'Estudis Olímpics UAB.
- Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Ha, J.-P., Hums, M. A., & Greenwell, C. T. (2014). The impact of acculturation and ethnic identity on American football identification and consumption among Asians in the United States. *International Journal of Sports Marketing and Sponsorship*, 15(2), 125-142.

- Ha, J.-P., Hums, M. A., & Greenwell, T. C. (2016). Using cultural factors to explore sport consumption behaviors of ethnic minority groups: The case of Asians. *International Journal of Sports Marketing and Sponsorship*, 17(2), 130-152.
- Ha, J.-P., Choi, W., & Ha, J. (2018). Examining culture-specific sport consumption behavior in a host country: The roles of ethnic identity and acculturation. *Journal of Physical Education and Sport*, 18 Supplement (2), 1175-1186.
- Harrolle, M. G., & Trail, G. T. (2007). Ethnic identification, acculturation and sports identification of Latinos in the United States. *International Journal of Sports Marketing & Sponsorship*, 8, 234-253.
- Jang, Y., Kim, G., Chiriboga, D., & King-Kallimanis, B. (2007). A bidimensional model of acculturation for Korean American older adults. *Journal of Aging Studies*, 21(3), 267-275.
- Kim, B. S. K., & Abreu, J. M. (2001). Acculturation measurement: Theory, current instruments, and future directions. In J. G. Ponterotto, M. Casas, L. A. Suzuki, & C. Alexander (Eds.), *Handbook of multicultural counseling* (2nd ed.). (pp. 394-424). Thousand Oaks, CA: Sage.
- Ko, Y. J., Claussen, C. L., Rinehart, R. E., & Hur, Y. (2008). Marketing to Asian American sport consumers. *International Journal of Sport Management*, 9(1), 67-80.
- Kang, S.-M. (2006). Measurement of acculturation, scale formats, and language competence: Their Implications for Adjustment. *Journal of Cross-Cultural Psychology*, 37, 669-693.
- Lee, S.-K., Sobal, J., & Frongillo, E. A. (2003). Comparison of models of acculturation: The case of Korean Americans. *Journal of Cross-Cultural Psychology*, 34(3), 282-296.
- Mendoza, R. H. (1989). An empirical scale to measure type and degree of acculturation in Mexican-American adolescents and adults. *Journal of Cross-Cultural Psychology*, 20(4), 372-385.
- Min, P. G., & Kim, Y. O. (2009). Ethnic and sub-ethnic attachments among Chinese, Korean, and Indian immigrants in New York City. *Ethnic & Racial Studies*, 32, 758-780.
- Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures*. Thousand Oaks, CA: Sage Publications.
- Nguyen, H. H., Messe, L. A., & Stollak, G. E. (1999). Toward a more complex understanding of acculturation and adjustment: Cultural involvements and psychological functioning in Vietnamese youth. *Journal of Cross-Cultural Psychology*, 30(5), 5-31.
- Nguyen, H. H., & von Eye, A. (2002). The acculturation scale for Vietnamese adolescents (ASVA): A bidimensional perspective. *International Journal of Psychology*, 20(1), 5-31.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.) New York: McGraw Hill.
- Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, 7(2), 156-176.
- Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology*, 54(3), 271-281.
- Pons, F., Laroche, M., Nyeck, S., & Perreault, S. (2001). Role of sporting events as ethnoculture's emblems: Impact of acculturation and ethnic identity on consumers' orientation toward sporting events. *Sport Marketing Quarterly*, 10, 231-240.
- Stephenson, M. (2000). Development and validation of the Stephenson Multigroup Acculturation Scale (SMAS). *Psychological Assessment*, 12(1), 77.
- Stodolska, M., & Alexandris, K. (2004). The role of recreational sport in the adaptation of first generation immigrants in the United States. *Journal of Leisure Research*, 36(3), 379-413.
- Suinn, R. M., Rickard-Figueroa, K., Lew, S., & Vigil, P. (1987). The Suinn-Lew Asian Self-Identity Acculturation Scale: An initial report. *Educational and Psychological Measurement*, 47, 401-407.
- Szapocznik, J., Kurtines, W. M., & Fernandez, T. (1980). Bicultural involvement and adjustment in Hispanic-American youths. *International Journal of Intercultural Relations*, 4, 353-365.
- van de Vijver, F. J.R., & Phaet, K. (2004). Assessment in Multicultural Groups: The Role of Acculturation. *Applied Psychology: An International Review*, 53(2), 215-236.
- Ward, C., & Rana-Deuba, A. (1999). Acculturation and adaptation revisited. *Journal of Cross-Cultural Psychology*, 30(4), 422-442.
- Yoh, T., Yang, H., & Gordon, B. (2008). Status of participation in physical activity among international students attending colleges and universities in the United States. *College Student Journal*, 42(4).
- Zea, M. C., Asner-Self, K. K., Birman, D., & Buki, L. P. (2003). The Abbreviated Multidimensional Acculturation Scale: Empirical validation with two Latino/Latina samples. *Cultural Diversity and Ethnic Minority Psychology*, 9(2), 107-126.