

## Relationship between sport participation behavior and the two types of sport commitment of Japanese student athletes

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### Abstract:

The purpose of this study was to develop a Japanese version of the enthusiastic and constrained sport commitment scale originally developed by Scanlan et al. (2016), and to investigate the relationship between actual behavior and the two types of commitment. The participants were 587 male Japanese collegiate athletes. The scale was translated into Japanese using the back translation method, and its reliability and validity were examined. Exploratory factor analysis (EFA) was conducted to analyze scale items, and 2 factors (6 items for enthusiastic commitment, 5 items for constrained commitment) were extracted. In addition, reliability and factorial validity were confirmed by Cronbach's alpha and confirmatory factor analyses (CFA). Construct validity was also confirmed in this study. The results suggested that the Japanese version of the enthusiastic and constrained sport commitment scale has sufficient validity and reliability. In addition, the result of examining the relationship between the two types of sport commitment and actual sport participation behavior showed that both enthusiastic commitment and constrained commitment were positively associated with actual behavior, and enthusiastic commitment affected actual behavior more strongly than constrained commitment. In conclusion, the constructed scale was judged to be suitable for measuring the two types of sport commitment in Japanese athletes; the two types indicated differences in effectiveness for actual sport participation behavior.

**Key words:** Japanese athletes, collegiate sports, sports adherence.

### Introduction

Sport commitment is a psychological factor related to sports participation and persistency (Casper, Gray & Stellino, 2007; Kanezaki, 1992, 2013). Sport commitment is defined as “psychological state representing the desire and resolve to continue participation in a particular athletic program, specific sport or sport in general” (Scanlan et al, 1993). Jeon and Ridinger (2009) demonstrated that athletes who showed a higher sport commitment score indicated high frequency of competitive sport participation. In addition, Hagiwara and Isogai (2014) found that Japanese athletes who had a higher sport commitment score demonstrated high frequency of training, intensity of practice, and time spent on a workout. Thus, sport commitment is an important factor to determine competitive sport participation and persistence.

Initially, Scanlan et al. (1993) developed the Sport Commitment Scale (SCS) to assess a psychological construct representing the desire to continue sport participation. SCS is the most widely used measure of sport commitment, and many previous studies around the world have adopted it (Guillet et al., 2002; ; Hagiwara & Isogai, 2014; Scanlan et al., 2003, Scanlan et al., 2008; Weiss & Weiss, 2007). This scale conceptually represents the degree of perceived psychological attachment to sport participation (Hagiwara & Isogai, 2014). Although this notion appears to be intuitive, the nature of commitment in and of itself is not without controversy given that persistence can be motivated through either volitional feelings of choice and personal desire or a sense of external control and obligation (Ryan & Deci, 2000; Wilson et al., 2004). In the field of social psychology, Brickman (1987) proposed that the nature of commitment includes an obligatory component as well as an independent component. Namely, individuals persist in the effort to action because they “want to” and because they “have to.” If individuals can be both independently and obligatorily committed to an activity, behavioral and psychological outcomes might reasonably be expected to differ. Therefore, some studies argued that sport commitment also contains two types of commitment (Weiss & Weiss, 2003, 2006; Wilson et al., 2004), and developed a scale of commitment to include both “want to” and “have to” dimensions in an exercise situation (Wilson et al., 2004). However, its scale was not fit to measure the athlete’s commitment (Scanlan et al., 2016), and there was no measurement scale to clarify multidimensional competitive sport commitment. Therefore, Scanlan et al. (2016) developed a two-factor sport commitment scale that included both enthusiastic (“wanting to commit”) and constrained (“having to commit”) aspects, and demonstrated its reliability and validity. One aspect of sport commitment is enthusiastic commitment, which includes an independent component; it is the psychological construct representing the desire and resolve to persist in sport over time. The other aspect of sport

commitment is constrained commitment, which is the psychological construct representing perceptions of obligation to persist in a sport over time.

In addition, Scanlan et al. (2016) also investigated the relationship between the two types of sport commitment and sport enjoyment. Sport enjoyment is defined as “a positive effective response to the sport experience that reflects generalized feeling such as pleasure, liking, and fun” (Scanlan et al., 1993). The result of their study demonstrated significant positive relations between enthusiastic commitment and sport enjoyment, and significant negative relations between constrained commitment and sport enjoyment (Scanlan et al., 2016). Therefore, the two types of sport commitment indicate differences in psychological outcomes related with sport participation.

However, Scanlan et al. (2016) mentioned that behavioral consequences of the two commitment states are needed in further research. In addition, there is no existing Japanese language version of the two-factor sport commitment scale, which has been developed by a leading scholar of sport commitment research in the English-speaking world.

Therefore, the purpose of this study was to create the Japanese version of the two-factor sport commitment scale with a Japanese sample. In addition, we examined the relationship between actual sport participation behavior and the two commitment states.

## Material & methods

### *Participants and survey procedure*

Participants were 587 male Japanese collegiate athletes. All participants currently play competitive sport at the varsity level or intramural level and their mean age was 19.08 years ( $SD \pm 1.05$ ). Institutional Review Board approval was granted by the National Institute of Fitness and Sport, and the research team informed participants of the purpose of this study and instructions for the survey prior to participation. Data and informed consent were obtained while the participants were attending sports science classes in a classroom. The participation was completely voluntary.

### *Instrument*

The original sport commitment scale (Scanlan et al., 2016) is a self-report inventory measuring the psychological desire and obligation to continue playing sports, and contains 11 items (Table 1). The scale begins with the phrase “The sport that I am currently playing and basing my responses on is...” Enthusiastic commitment is measured by six questions such as “I am willing to overcome any obstacle to keep playing this sport,” “I am dedicated to keep playing this sport,” and “I am determined to keep playing this sport.” Constrained commitment is measured by five questions such as “I feel trapped in this sport,” “Staying in this sport is more of a necessity than a desire,” and “I feel I am forced to keep playing this sport.” These items are rated on a scale of 1 (strongly disagree) to 5 (strongly agree). The items are summed to provide a total score representing the amount of each type of sport commitment.

The actual sport participation behavior was measured by perception of time trained per week. The question is “How many hours do you spend for your athletic activity in a week?”, and participants answered by indicating the summed actual time spent in a last week. The average time spent was 16.13 hours ( $SD = \pm 13.29$ ) per week.

### *Translation process*

We translated the scale into Japanese with the permission of the original author, and then conducted back translation into English to preserve its correspondence with the original scale, other than allowing for linguistic and cultural differences. Four experts with backgrounds in sport psychology and sport management conducted the translation process. They were native Japanese speakers with sufficient English skills and had adequate research experience in the U.S. We translated all items—including both enthusiastic and constrained commitment—into Japanese, a translation company performed the Japanese to English back translation, and we repeated the translation and back translation procedures. The Japanese version of the scale is an 11-item self-report questionnaire (Appendix).

### *Analysis*

Exploratory factor analysis (EFA) using a principal factor analysis with promax rotation was conducted to determine the composition and structure of the two types of commitment. Reliability and validity were confirmed by Cronbach’s alpha and Confirmatory Factor Analysis (CFA) respectively. The goodness of fit index for CFA utilized the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Structural Equation Modelling (SEM) was used in order to examine the relationships between the two commitment states and actual behavior. The considered adequate fit values were GFI, AGFI, CFI  $>.90$ , and RMSEA  $<.08$  (Oshio, 2008). All data were analyzed by IBM SPSS Statistics 21.0 and AMOS 20.0.

**Results**

Demographic characteristics of the respondents (N=587) and their average scores for each items are shown in Table. 1. The scores on the 11 items ranged from 2.04 to 4.29 (SD=.95-1.33).

Table. 1 Scores of mean and standard deviation of each question item

No.	Items	Mean	SD
1	I am dedicated to keep playing this sport	4.14	1.01
2	I am willing to overcome any obstacle to keep playing this sport	3.81	1.03
3	I am determined to keep playing this sport	3.92	1.05
4	I am very attached to this sport	4.10	1.01
5	I will continue to play this sport for as long as I can	3.62	1.11
6	I am willing to do almost anything to keep playing this sport	4.29	.95
7	Staying in this sport is more for a necessity than a desire	2.65	1.23
8	I feel trapped in this sport	2.65	1.29
9	Although I think about quitting this sport, I feel I must keep playing	2.39	1.33
10	I feel I am forced to keep playing this sport	2.10	1.27
11	I feel I have to keep playing this sport, even though I don't want to	2.04	1.28

An exploratory factor analysis using principal factor analysis with promax rotation was conducted for all 11 items. The result indicated that two factors were extracted and all items were adopted. Table. 2 presents the factor loadings for Factor I, which ranged from .69 to .92, whereas factor loadings for Factor II ranged from .72 to .89. Factor loadings in bold reflect the items that correspond to Factor I and II respectively. The two-factor structure accounted for 69.16% of the variance.

We calculated Cronbach's alpha coefficients of the item groups included in each factor of the two commitment states. The alpha coefficients were .93 for Factor I and .91 for Factor II.

Table.2 Scores of contribution, factor loadings and alpha coefficients

No	item	Communality	Factor I	Factor II
<b>Factor I</b>				
EC1	I am dedicated to keep playing this sport	.72	<b>.84</b>	.11
EC2	I am willing to overcome any obstacle to keep playing this sport	.75	<b>.87</b>	.02
EC3	I am determined to keep playing this sport	.84	<b>.92</b>	.04
EC4	I am very attached to this sport	.72	<b>.83</b>	.16
EC5	I will continue to play this sport for as long as I can	.67	<b>.82</b>	.07
EC6	I am willing to do almost anything to keep playing this sport	.50	<b>.69</b>	.15
<b>Factor II</b>				
CC1	Staying in this sport is more for a necessity than a desire	.58	.21	<b>.73</b>
CC2	I feel trapped in this sport	.68	.13	<b>.81</b>
CC3	Although I think about quitting this sport, I feel I must keep playing	.68	.04	<b>.83</b>
CC4	I feel I am forced to keep playing this sport	.79	.04	<b>.89</b>
CC5	I feel I have to keep playing this sport, even though I don't want to	.68	.04	<b>.82</b>
		Contribution	38.24	30.92
		Cumulative contribution		69.16
		α coefficient	.93	.91

To examine the construct validity of the Japanese version of the two-dimension commitment scale, we conducted a CFA (Fig. 1). The goodness of fit values were GFI =.96, AGFI = .92, CFI = .98, and RMSEA = .07.

Regarding the result of examining the relationships between perception of time trained per week and the two commitment states by SEM, the model fit demonstrated GFI =.95, AGFI=.91, CFI=.97, and RMSEA=.07, and all path coefficients were significant (Fig. 2). In addition, the result of comparing path coefficients among enthusiastic and constrained commitment indicated that enthusiastic commitment affects time trained per week more strongly than constrained commitment (p<.01).



