# Validation of a 6-Item Coaching Servant Leadership Scale

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*There has been a growing interest in servant leadership within the sport coaching domain; however, a brief and valid scale to measure the servant leadership of the coaches is lacking. Therefore, this study examined the validity of a 6-item shortened form of (CSL-6) Takamatsu's (2022) coaching servant leadership scale. The psychometric properties of CSL-6 were examined across three studies. The samples for the studies were 89 Japanese college athletes, 1015 Japanese college athletes, and 278 U.S. college athletes, respectively. This study demonstrated the psychometric properties, reliability, and criterion-related validity of CSL-6. Further, it shows that using CSL-6 reduces the respondents' burden and allows for more complex theories and models to be examined in future studies.*

Key Words: Coach, Athlete, Servant leader, Coach-athlete relationship.

## Introduction

Greenleaf (1970) has proposed the concept of servant leadership, and numerous studies on servant leadership have been conducted in the business management domain. Servant leadership is an other-oriented approach that prioritises the needs, interests, and goals of the individual follower and directs the follower's concern for self toward others (Eva et al., 2019). Owing to its advancement, servant leadership can be considered as a construct comprising multidimensional factors (Liden et al., 2008; Sendjaya et al., 2008; Van Dierendonck & Nuijten, 2011), and its relationship with other variables examined in previous studies is introduced in review papers (Eva et al., 2019). Several other types of leadership have recently been studied. Hoch et al. (2016) have conducted a meta-analysis of previous research on the major positive leadership styles: transformational, authentic, ethical, and

servant leadership styles. Their results indicate that authentic leadership ($\rho$ = .75) and ethical leadership ($\rho$ = .70) show high correlation coefficients with transformational leadership, suggesting that they do not need to be measured simultaneously because of redundancy. Servant leadership shows a moderate correlation with transformational leadership ($\rho$ = .52), further indicating that more variances can be explained using servant leadership. The results support the uniqueness (i.e., focusing on follower growth) of servant leadership and indicate the importance of accumulating studies on servant leadership.

While servant leadership, through its moral component and focus on followers, can ameliorate ethical issues prevalent in sport (Burton & Peachey, 2013), it is a relatively new field of study (Peachey et al., 2015). Focusing on sport coaching research, a new scale has been developed to measure the servant leadership of coaches (Takamatsu, 2022). Based on Hinkin's (1995) guidelines for scale development, Takamatsu (2022) has collected potential items that may comprise coaching servant leadership through deductive (i.e., a review of previous studies) and inductive (i.e., surveys of 103 coaches and 34 university students) approaches in Phase 1. In Phase 2, content validity ratios are calculated using 10 expert ratings, and items that do not meet the criteria are eliminated, narrowing the list to 74 potential items. In Phase 3, construct validity is tested through exploratory and confirmatory factor analyses, and the coaching servant leadership scale, comprising six factors (acceptance, shared vision, empowerment, dedication, humility, and winning second) and 17 items, is developed. Finally, in Phase 4, the applicability of the scale in another country (i.e., the United States) is demonstrated. Takamatsu (2022) has defined coaching servant leadership as "an athlete-first approach to leadership that prioritises athletes' needs and interests and serves them for a common goal of the team by investing in their growth and wellbeing" (Takamatsu, 2022, p. 3).

In early research, servant leadership is considered a multidimensional construct. However, subsequent quantitative studies have shown that the correlations among the factors that comprise servant leadership are considerably high, and it has become common for servant leadership to be measured by the second-order, servant leadership, and first-order factors. Furthermore, recent studies have attempted to extract items that are representative of each first-order factor and capture them as a one-dimensional construct. For instance, Liden et al. (2015) have developed a 7-item servant leadership scale based on Liden et al.'s (2008) original scale, and Sendjaya et al. (2019) have developed a 6-item servant leadership behaviour scale based on Sendjaya et al.'s (2008) original scale. According to Sendjaya et al. (2019), numerous items on a scale can cause the tiredness and boredom of participants and increase response bias in surveys. Thus, they developed a shortened form of

the servant leadership scale to minimise the issues related to response rate and quality. Coaching servant leadership in the sport domain is no exception; Takamatsu (2022) has also reported high correlations among the factors in the process of developing the coaching servant leadership scale, suggesting that coaching servant leadership is a hierarchical model capturing global and multidimensional constructs.

There are several significant reasons for developing a shortened form of the coaching servant leadership scale. As Horn's (2008) model of coaching effectiveness shows, to examine the influence of coaches on athletes, not only one scale (e.g., coach leadership) in isolation but also the sociocultural context, organizational climate, and other factors must be considered. If these factors can be incorporated into the analytical model, complex theories can be tested, and deep insights can be gained. As too many questionnaire items lead to low response rates and quality from survey participants (Sendjaya et al., 2019), a shortened form of the coaching servant leadership scale would be considerably practical. Moreover, the finding that servant leadership can be measured by a single factor is supported primarily in the business management domain. This study contributes to the servant leadership literature by demonstrating this result in the sport coaching domain.

To ensure that the shortened form maintains the psychometric properties of the original scale and to minimize the errors associated with the measurement scale, this study follows a multi-study scale development procedure based on previous research (Liden et al., 2015; Sendjaya et al., 2019). Regarding content validity, the short form has been largely established in previous research as it consists of items extracted from the original scale (Takamatsu, 2022). Therefore, this study examines the psychometric properties, reliability, and criterion-related validity of the scale. First, this study attempts to create CSL-6, a shortened form of the coaching servant leadership scale comprising six items, by extracting one item from each factor in the original scale. The six items that comprise CSL-6 are hypothesised to load onto a single factor that reflects the coaching servant leadership. This is because high-order confirmatory factor analyses show that the six factors of the original scale, measured by 17 items, are distinct; however, they all load onto high-order factors that capture the coaching servant leadership (Takamatsu, 2022). Additionally, because CSL-6 extracts representative items from the original scale, a high correlation is assumed between CSL-6 and the original scale (CSL-17). Next, Takamatsu (2022) examines the criterion-related validity of CSL-17 by setting leader-related (i.e., satisfaction with a head coach), behavioural (i.e., team citizenship behaviour), attitudinal (i.e., team commitment), and performance (i.e., team efficacy) outcomes based on the review by Eva et al. (2019).

Therefore, it was hypothesized that CSL-6 and each outcome are related in this study. Finally, the applicability of CSL-6 to another country (i.e., the United States) is confirmed, and its relevance to the quality of a coach-athlete relationship is examined. The coach-athlete relationship is defined as "a social situation that coaches and athletes created by the ways in which feelings, thoughts, and behaviours are mutually and causally interdependent" (Yang & Jowett, 2016, p.55). A coach-athlete relationship questionnaire, a measure of the coach-athlete relationship, has been developed by Jowett and Ntoumanis (2004). The coach-athlete relationship is measured using three factors: commitment, closeness, and complementarity. According to Zhao and Jowett (2023), "closeness refers to the affective tone of the relationship and includes such relational properties as mutual trust, respect, appreciation, and interpersonal liking. Commitment refers to coaches' and athletes' thoughts, intentions, and willingness to maintain a bond or close ties over time. Complementarity captures coaches and athletes' cooperative acts of interactions" (p. 634). Jowett (2005) has noted that an effective coach-athlete relationship focuses on the growth and development of the individual. An effective relationship includes basic elements, such as empathic understanding, honesty, support, acceptance, cooperation, caring, and respect. Additionally, it has been reported that in creating an effective coach-athlete relationship, stereotypical perceptions that depend on athlete success are not supported, and an athlete-centred approach is necessary (Jowett & Cockerill, 2003). Werthner (2009) has conducted interviews with Olympic and Paralympic athletes and coaches and found that it is important for coaches to listen to athletes' opinions, be willing to seek help from other professionals for athletes' development, and to be caring. The coach behaviour scale for sport (Côté et al., 1999) and transformational leadership (Gosai et al., 2023; Lopez de Subijana et al., 2021; Vella et al., 2013; Zhao & Jowett, 2023) have been utilised to examine coaches' behaviours and the quality of the coach-athlete relationship. Servant leadership and the quality of the coach-athlete relationship are similar, as they focus on the growth of the followers (i.e., athletes). Thus, the quality of the coach-athlete relationship is considered a suitable construct for examining the criterion-related validity of CSL-6. Based on this, the following three hypotheses are developed:

H1: CSL-6 is a psychometrically unidimensional representation of CSL-17, specifically constitutes a single factor for measuring coaching servant leadership, and is positively correlated with CSL-17.

H2: Coaching servant leadership, as measured by CSL-6, is positively associated with satisfaction with the head coach, team citizenship behaviour, team commitment, and team efficacy.

H3: Coaching servant leadership, as measured by CSL-6, is positively related to the quality of the coach-athlete relationship.

The specific procedures for this study include testing the psychometric properties and reliability of CSL-6 in Study 1 (H1). In Study 2, the psychometric properties and reliability of CSL-6 are tested, as well as its criterion-related validity (H1 and H2). Finally, in Study 3, the psychometric properties and reliability of CSL-6 are confirmed in a U.S. sample, and its association with the quality of the coach-athlete relationship is tested (H3).

## Methods

ITEM SELECTION FOR THE 6-ITEM COACHING SERVANT LEADERSHIP SCALE

First, an attempt was made to extract six items from CSL-17. One item was selected from each factor to ensure that each item covered one of the six CSL-17 factors. A careful procedure was followed to select the items that demonstrated both empirical and content validity. Specifically, based on Takamatsu's (2022) results of two confirmatory factor analyses (the Japanese and U.S. samples), the items with the highest factor loadings for each factor were coincident; thus, they were selected. Additionally, whether they could theoretically represent each factor was examined. Resultantly, the six items listed in Table 1 were extracted for CSL-6. The psychometric properties of CSL-6 observed in Studies 1-3 are also listed in Table I.

### *Study 1*

The study design was approved by the research ethics committee of the author's university, and all study participants provided informed consent. Data were collected from 89 Japanese university student-athletes to test the psychometric properties of the six items comprising CSL-6. During the screening phase, participants were identified as members of a university athletic club and were regularly coached by a head coach. The average age was 20.0 years (SD = 1.19; 14.6% male and 85.4% female). They included freshmen (30.3%), sophomores (15.7%), juniors (30.3%), and seniors (23.6%). Sports that accounted for more than 5% of the participants included basketball (53.9%), softball (13.5%), baseball (11.2%), and tennis (9.0%). Within their respective hierarchies, individual athletes and teams competed in Divisions 1 (43.8%) and 2 (56.2%).

Each item of the coaching servant leadership scale was measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). A confirmatory factor analysis (CFA) was conducted to check the psychometric properties of CSL-6. Based on Kline's (2016) recommendation, the following fit indices were assessed for the model fit: the normed chi-square ($\chi^2/df$), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR). According to Hair et al. (2010), $\chi^2/df$ ratios of 3:1 or less, CFI values above 0.90, RMSEA values of <0.08, and SRMR values of 0.08 or less are associated with a better-fitting model. The analyses in Studies 1-3 were conducted using IBM SPSS Statistics 28 and IBM SPSS Amos 27.

TABLE I
*CSL-6 Psychometric Properties In Studies 1-3*

| Item number | | Items | Study 1 | Study 2 | Study 3 |
|---|---|---|---|---|---|
| CSL-17 | CSL-6 | | FL | FL | FL |
| A4 | 1 | My head coach proactively listens to the athletes' opinions. | .74 | .71 | .70 |
| SV2 | 2 | My head coach understands the goals of the team. | .67 | .65 | .68 |
| E2 | 3 | My head coach helps athletes realize their full potential. | .80 | .73 | .73 |
| D3 | 4 | My head coach supports the athletes no matter what situation they are in. | .79 | .70 | .70 |
| H2 | 5 | My head coach learns from criticism and failures. | .76 | .71 | .64 |
| WS2 | 6 | My head coach provides athletes with opportunities to learn, even if there are no immediate results. | .76 | .70 | .74 |
| | | Skewness | -0.83-0.27 | -0.67 to -0.43 | 0.88 to 0.50 |
| | | Kurtosis | -1.22-1.07 | -0.64 to -0.25 | -0.51-0.49 |
| .95 | .89 | Study 1 McDonald's ω | | | |
| .94 | .85 | Study 2 McDonald's ω | | | |
| .93 | .85 | Study 3 McDonald's ω | | | |
| | | Chi-square (df) | 14.22 (9) | 8.44 (9) | 9.14 (9) |
| | | Chi-square significance | .12 | .49 | .43 |
| | | Chi-square/df | 1.58 | 0.94 | 1.02 |
| | | CFI | 0.98 | 1.00 | 1.00 |
| | | RMSEA | 0.08 | 0.00 | 0.01 |
| | | SRMR | 0.03 | 0.01 | 0.02 |
| | | Correlation between CSL-17 and CSL-6 | .96 | .95 | .96 |

*Note.* Study 1: Japanese college athletes (n = 89); Study 2: Japanese college athletes (n = 1015); and Study 3: U.S. college athletes (n = 278). CSL-17 = original coaching servant leadership scale; CSL-6 = shortened form of the coaching servant leadership scale; A = acceptance; SV = shared vision; E = empowerment; D = dedication; H = humility; WS = winning second; FL = standardised factor loadings.

## Study 2

The data for this sample were collected via an online panel survey company in Japan. Here, 1015 university athletes completed an online questionnaire. During the screening phase, participants were identified as members of a university athletic club and were regularly coached by a head coach. The average age was 20.5 years (SD = 1.40; 32.8% male and 67.2% female), and the participants included freshmen (25.9%), sophomores (25.2%), juniors (23.4%), seniors (24.7%), and others (0.7%). Sports that accounted for more than 5% of the sample included soccer (9.9%), basketball (8.9%), tennis (8.2%), badminton (7.8%), and volleyball (6.5%). Within their respective hierarchies, individual athletes and teams competed in Divisions 1 (29.2%), 2 (31.1%), 3 (15.6%), and others (24.1%).

To test the criterion-related validity of CSL-6, the participants completed questions on team citizenship behaviour (Martínez, 2013; Martínez & Tindale, 2015), team commitment (Kim et al., 2016), satisfaction with the head coach (Myers et al., 2011), and team efficacy (Bruton et al., 2015), as in Takamatsu's study (2022). Team citizenship behaviour was measured using 13 items. A sample item was "I help each other out if someone falls behind in her practice." The McDonald's Omega score for this measure was .88. Team commitment was measured using five items. A sample item was "This team has a great deal of personal meaning for me." The McDonald's Omega value for this measure was .79. Satisfaction with the head coach was measured using three items. A sample item was "If you were able to play next year, how much would you like to have the same head coach again?" The McDonald's Omega score was .76. Team efficacy was measured using one item: "Rate your team's confidence in their ability to perform to a high level sufficient to achieve success in their next competitive performance." Team efficacy was rated on a scale of 0 (not at all confident) to 100 (completely confident), whereas all other variables were scored on a 7-point Likert scale.

## Study 3

Studies 1 and 2 involved Japanese college athletes. Thus, to further enhance the generalisability of CSL-6, Study 3 was designed to survey a sample of U.S. college athletes and was conducted using the same sample as Takamatsu (2022). Data were collected from 278 college athletes (40.6% male and 59.4% female) in the United States through a global research firm with a branch office. During the screening phase, participants were identified as members of a university athletic club and were regularly coached by a head coach. The participants' age ranged from 18 to 25 years (mean = 20.80 ± 1.83 years), and they were freshmen (15.1%), sophomores (22.3%), juniors (27.3%), seniors (33.5%), or fifth-year students (1.8%). They competed in Divisions 1 (31.3%), 2 (48.6%), or 3 (20.1%) and belonged to the National Collegiate Athletic Association (58.6%), the United States Collegiate Athletic Association (11.5%), the National Junior College Athletic Association (9.7%), the National Association of Intercollegiate Athletics (6.4%), or others. The sports that represented more than 5% of the respondents were basketball (25.2%), soccer (13.7%), volleyball (10.4%), football (9.0%), and tennis (6.5%).

In addition to CSL-6, the participants were asked to complete the coach-athlete relationship questionnaire (Jowett & Ntoumanis, 2004). The coach-athlete relationship questionnaire consists of 11 items: three measuring commitment (e.g., "I feel close to my coach"), four measuring closeness (e.g., "I like my coach"), and four measuring complementarity (e.g., "When I am coached by my coach, I feel at ease"). The McDonald's Omega values were 0.81, 0.82, and 0.81, respectively. All variables were scored on a 7-point Likert scale.

## Results

### Study 1

As shown in Table I, the skewness values for the CSL-6 items ranged from -0.83 to 0.27, and the kurtosis values ranged from -1.22 to 1.07, indicating normality in the data distribution. McDonald's Omegas for CSL-6 and CSL-17 were .89 and .95, respectively. The CFA suggested that CSL-6 showed an acceptable fit to the data ($\chi^2$ (9) = 14.22 ($p$ = .12), $\chi^2$/df = 1.58, CFI = .98, RMSEA = .08, SRMR = .03). The standardised factor loadings were .67 to .80. Additionally, the correlation between CSL-6 and CSL-17 in this sample was .96. These results supported the factor structure and reliability of SL-6 and provided evidence that SL-6, as well as the original scale (SL-17), can measure coaching servant leadership. Accordingly, H1 was supported.

### Study 2

As shown in Table 1, the skewness values for the CSL-6 items ranged from -0.67 to -0.43, and the kurtosis values ranged from -0.64 to -0.25, indicating normality in the data distribution. The McDonald's Omegas for CSL-6 and CSL-17 in the Study 2 sample were .85 and .94, respectively. The CFA for CSL-6 demonstrated a good fit to the data ($\chi^2$ (9) = 8.44 ($p$ = .49), $\chi^2$/df = 0.94, CFI = 1.00, RMSEA = .00, SRMR = .01). The standardized factor loadings were .65 to .73, and the correlation between CSL-6 and CSL-17 was .95. These results further supported the psychometric properties and reliability of CFA-6 identified in Study 1.

Table 2 presents the means, standard deviations, and correlations for each variable. Correlation analysis showed that CSL-6 was significantly and positively related to team citizenship behaviour ($r$ = .57, $p$ < .001), team commitment ($r$ = .38, $p$ < .001), satisfaction with the head coach ($r$ = .63, $p$ < .001), and team efficacy ($r$ = .35, $p$ < .001). Thus, the criterion-related validity of CSL-6 was confirmed, supporting H2.

### Study 3

As shown in Table 1, the skewness values for the CSL-6 items ranged from -0.88 to -0.50, and the kurtosis values ranged from -0.51 to 0.49, indicating normality in the data distribution. The McDonald's Omegas for CSL-6 and CSL-17 in the Study 3 sample were .85 and .93, respectively. The CFA for CSL-6 demonstrated a good fit to the data ($\chi^2$ (9) = 9.14 ($p$ = .43), $\chi^2$/

TABLE II
*Means, Standard Deviations, And Correlations In Study 2*

|          | M     | SD    | 1   | 2   | 3   | 4   | 5 |
|----------|-------|-------|-----|-----|-----|-----|---|
| 1. CSL-6 | 4.81  | 1.18  |     |     |     |     |   |
| 2. TCB   | 5.01  | 1.06  | .57 |     |     |     |   |
| 3. TC    | 5.08  | 1.13  | .38 | .44 |     |     |   |
| 4. S     | 4.91  | 1.29  | .63 | .48 | .43 |     |   |
| 5. TE    | 55.22 | 27.96 | .35 | .33 | .25 | .29 |   |

*Note.* All correlation coefficients were significant ($p < .001$). M = mean; SD = standard deviation; CSL-6 = shortened form of the coaching servant leadership scale; TCB = team citizenship behaviour; TC = team commitment; S = satisfaction with a head coach; and TE = team efficacy.

df = 1.02, CFI = 1.00, RMSEA = .01, SRMR = .02). The standardized factor loadings were .64 to .74, and the correlation between CSL-6 and CSL-17 was .96. Thus, as in Studies 1 and 2, the psychometric properties and reliability of CSL-6 were confirmed.

Table 3 presents the means, standard deviations, and correlations for each variable. The correlation analysis showed that CSL-6 was significantly and positively related to commitment ($r = .63$, $p < .001$), closeness ($r = .70$, $p < .001$), and complementarity ($r = .64$, $p < .001$). Thus, the criterion-related validity of CSL-6 was confirmed, supporting H3.

TABLE III
*Means, Standard Deviations, And Correlations In Study 3*

|                     | M    | SD   | 1   | 2   | 3   | 4 |
|---------------------|------|------|-----|-----|-----|---|
| 1. CSL-6            | 6.06 | 0.67 |     |     |     |   |
| 2. Commitment       | 5.88 | 0.86 | .63 |     |     |   |
| 3. Closeness        | 6.22 | 0.68 | .70 | .66 |     |   |
| 4. Complementarity  | 5.97 | 0.71 | .64 | .63 | .70 |   |

*Note.* All correlation coefficients were significant ($p < .001$). CSL-6 = shortened form of the coaching servant leadership scale; M = mean; SD = standard deviation.

## Discussion

This study aims to develop and validate a shortened form of Takamatsu's (2022) coaching servant leadership scale. The results showed that CSL-6 can be used as an alternative to the original scale, CSL-17, when future researchers attempt to examine coaching servant leadership as a composite variable. All hypotheses were supported throughout the three studies, and the psychometric properties, reliability, and criterion-related validity of CSL-6 were demonstrated.

Although the original coaching servant leadership scale was developed through a rigorous procedure, a concise scale for assessing coaching servant leadership is clearly needed to facilitate theoretical testing. Several servant leadership studies have been conducted in the sport coaching domain, starting with Hammermeister et al. (2008). However, they used the servant leadership scale developed in the business management domain, and no studies have identified specific servant leadership for coaches and examined its effects. Therefore, Takamatsu (2022) defined servant leadership for coaches and developed a measurement scale. Consistent with the trend of servant leadership research in the business management domain, this study examined whether servant leadership can be measured as a one-dimensional construct that reflects multidimensional factors. One representative item from each of the six factors (i.e., acceptance, shared vision, empowerment, dedication, humility, and winning second) of the CSL-17 was extracted. Additionally, six items that adequately covered the coaching servant leadership scale were selected. After conducting three studies, a concise CSL-6 was developed to measure coaching servant leadership efficiently, providing the basis for further servant leadership research.

This study theoretically and practically contributes to the development of servant leadership research in several ways. First, the psychometric properties and reliability of CSL-6 were demonstrated and related to multiple factors to confirm the criterion-related validity. Similar to Takamatsu (2022), whose study was based on Eva et al.'s (2019) review, this study set behavioural, attitudinal, leader-related, and performance outcomes as variables to test the criterion-related validity of coaching servant leadership and found that they were significantly related. These results demonstrate that CSL-6 can be used as an alternative to CSL-17. Additionally, the association with all four outcomes suggests that using CSL-6, a variety of coaching servant leadership effects can be examined. In the future, more insights can be gained by incorporating CSL-6 into complex models to explain the relationships between coaches and athletes and by including multiple leadership measures in survey designs.

Second, coaching servant leadership was found to be related to the quality of the coach-athlete relationship. This finding contributes to the literature on both servant leadership and coach-athlete relationships. Although the coach behaviour scale for sport and transformational leadership have been used as coach-related factors associated with the quality of the coach-athlete relationship, the association with servant leadership, which has similar characteristics of focusing on follower development, has not been examined. The relationship between the quality of the coach-athlete relationship and coaches' transformational leadership has been reported to be not only positive (Zhao & Jowett, 2023). One possible reason is that transformational leaders focus on organizational goals as a motivation for organizational development. Since servant leadership has a moral advantage considering its focus on the needs of individual followers (Parolini et al., 2009), coaches with high servant leadership are more likely to have good relationships with their athletes. Through meta-analyses, servant leadership has been found to predict intrinsic motivation better than transformational leadership (Xue et al., 2022). However, unlike the rich body of literature on transformational leadership and the quality of the coach-athlete relationship, the body of literature on servant leadership and the quality of the coach-athlete relationship is lacking, indicating that further studies are required.

Third, the results of this study indicate that CSL-6 is more practical for researchers and can be used to train and develop coaches in the field. Wu et al. (2021) conducted a survey using Liden et al.'s (2015) 7-item servant leadership scale to create high and low servant leadership conditions. This enabled the survey participants to identify the characteristics of high and low servant leadership in the virtual survey. A simple instrument, such as CSL-6, can facilitate the conduction of such a survey and indicate a person's characteristics (e.g., servant leader) based on measurement items. The six items can also be easily used to assess coaches in the field, even if not for research purposes.

## LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study has some limitations and suggestions for future research. First, this study design did not allow the team-level validation of CSL-6. Liden et al. (2015) and Sendjaya et al. (2019) clarified the reliability and validity at the group level when developing a shortened form of the servant leadership scale. To examine the role of head coaches in their sport teams and their effects on athletes at the team level, future studies should demonstrate that CSL-6 can be measured at the team level.

Second, this study failed to examine the relationships between other leadership styles (e.g., transformational leadership) and servant leadership scales commonly used in the business management domain. To further enhance the validity of CSL-6, multiple leadership styles should be incorporated into the analytical model, and their associations should be tested. Hoch et al. (2016) found similarities and differences between each leadership style in their meta-analysis. Thus, if moderate correlations could be identified between CSL-6 and other leadership styles, the uniqueness of CSL-6 would be ensured, and the usefulness of including CSL-6 in future research models could be demonstrated.

Third, given the strong support for CSL-6, researchers are encouraged to test a comprehensive model of the antecedents and consequences of coaching servant leadership in future research, based on models such as Horn's (2008) and various theories. Furthermore, incorporating moderators and mediators that are consistent with these theories would deepen our understanding of leadership and coaching. A relatively short coaching servant leadership scale would facilitate the validation of complex and large models and could make a significant contribution to existing leadership research. Furthermore, CSL-6 would reduce the burden on respondents and enable the use of other leadership measures, thereby providing a detailed explanation of the outcomes and characteristics of coaching servant leadership.

## Conclusion

This study attempted to develop a shortened form of a scale to measure coaching servant leadership. A psychometrically sound CSL-6 was developed using three samples. During the development process, three studies in Japan and the United States provided evidence of the validity of CSL-6. The goodness of fit of CSL-6 determined by CFA was relatively high. The CSL-6 reliabilities (McDonald's Omega) in each study were .85 to .89, and the correlations between CSL-6 and CSL-17 were .95 to .96, demonstrating the reliability and validity of CSL-6. Since CSL-6 was also associated with the quality of the coach-athlete relationship, high criterion-related validity was confirmed. Accordingly, CSL-6 can significantly contribute to future research in sport coaching and leadership domains.

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