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Leadership Scale for Sport (LSS)



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Test Title: The Leadership Scale for Sport (LSS)

Test Authors: P. Chelladurai & S. D. Saleh

Source: Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: development of a leadership scale. *Journal of Sport Psychology*, 2, 34-45.

Purpose:

The development of the Leadership Scale for Sport (LSS) was for a range of purposes. The Multidimensional Model of Sport Leadership was developed by Chelladurai & Saleh (1978) to determine if certain leadership theories were applicable to the sporting environment. The purpose of the development of the LSS (Chelladurai & Saleh, 1980) was to attempt to deal with certain problems relating to leadership in the sport context by testing the Multidimensional Model (Salminen & Liukkonen, 1994).

The first problem identified by Chelladurai & Saleh (1980) was that previous leadership theories for sport did not contain adequate models to measure and test their theory, nor was there any attempt to develop valid scales to assess and describe coaching behaviour. Chelladurai and Saleh also found that there was no

previous verification that leadership models used in other organizational settings were relevant to the sport context and that previous studies of leadership in the sporting context failed to present evidence of validity and reliability.

The LSS has been used in a variety of contexts to measure leadership in sport and the relationship between leadership and other variables. Chelladurai (1990) identified three main purposes for which the LSS has been used. It has been used to study Athletes' Preference for specific leader behaviour (Chelladurai, 1984; Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988; Chelladurai & Carron, 1981; 1983; Chelladurai & Saleh, 1980; Hastie, 1993; 1995; Horne & Carron, 1985; Sherman, Fuller, & Speed, 2000) and Athletes' Perceptions of their coaches' behaviour (Chelladurai et al., 1988; Chelladurai & Saleh, 1980; Horne & Carron, 1985). It has also been used to study Coaches' Perception of their own behaviour (Bennett & Maneval, 1998; Brooks, Ziatz, Johnson, & Hollander, 2000; Dwyer & Fischer, 1988; Horne & Carron, 1985; Salminen & Luikkonen, 1994). Preferred leader behaviour refers to actual behaviours favored by athletes. Athletes' perceptions of leader behaviour are similar to required leader behaviour, and Coaches' perception of their own leader behaviour relates to the actual behaviour of the coach.

The different versions of the LSS have been used to study the relationship between leadership and other important areas in sport. These include Athletic maturity (Chelladurai & Carron, 1983), Discrepancies between preferences and perceptions of leader behaviour (Chelladurai, 1984), Coach-athlete relationships (Horne & Carron, 1985), and the Relationship between the similarity in perceptions of leader behaviour (Laughlin & Laughlin, 1994).

Description:

The Leadership Scale for Sports (LSS) is a questionnaire made up of 40 items that are divided into 5 subscales. 13 items relate to Training and Instruction, 9 items relate to Democratic Behaviour, 5 items relate to Autocratic Behaviour, 8 items relate to Social Support, and 5 items relate to Positive Feedback.

These five dimensions of leader behaviour were defined by Chelladurai (as cited in Chelladurai, 1990). Training and Instruction refers to the behaviour of the coach that is directed towards improving the performance of athlete's. These behaviours include instructing athletes in the skills, techniques, and tactics of their sport, and organising and coordinating activities. Democratic Behaviour relates whether the coach allows athletes to participate in important coaching decisions associated with group goals, practice methods, game tactics and strategies. Autocratic Behaviour refers to the authority and independent decision making of the coach. Social Support is related to the coach's concern for the welfare of his/her athletes, creating a positive environment and interpersonal relationships with athletes, where as, Positive Feedback refers to the coach's behaviour of reinforcing athletes and recognizing and rewarding good performances.

Each item is preceded with a phrase, for example "The coach should...", "I prefer my coach to...", "My coach...", or "In coaching...", depending the scale's purpose in the particular study (either Required Leader Behaviour, Preferred Leader Behaviour, or Actual Leader Behaviour, respectively). The five response categories of the LSS are Always, Often, Occasionally, Seldom, and Never, where "often" is equal to 75% of the time, "occasionally" is equal to 50% of the time, and "seldom" is equal to 25% of the time (Chelladurai, & Saleh, 1980).

Construction:

There were two stages in the construction of the LSS. In the first stage (the development of the Multidimensional Model for Sport Leadership) Chelladurai, & Saleh (1978) chose ninety-nine items from existing leader behaviour scales. These items were then modified for the athletic situation. The phrase "The coach should..." preceded each item and there were five response categories, as listed in the description. The responses to each item were factor analysed, with the most meaningful being a five-factor solution (Chelladurai & Saleh, 1978; 1980). Items were selected if they had a loading of .40 or above on one factor and a loading of below .3 on any other factor (Chelladurai & Saleh, 1978; 1980). That is, items were selected if they had a high loading on one factor and a low loading on all four other factors. Thirty-seven items were retained. The five factors were named Training Behaviour, Autocratic Behaviour, Democratic Behaviour, Social Support and Rewarding Behaviour.

Due to discrepancies with the 'Training Behaviour' and 'Social Support' dimensions, the second stage of the construction of the LSS (Chelladurai & Saleh, 1980) involved adding 7 more items to Training Behaviour and 6 more items to Social Support. Numerical values were given to three of the response categories. 'Often' was equal to 75% of the time, 'occasionally' was equal to 50% of the time, and 'seldom' was equal to 25% of the time (Chelladurai & Saleh). The revised version of the LSS was then given to physical education students, who recorded their preference for leader behaviour, and athletes, who recorded their preference for leader behaviour and their perception of their coach's behaviour. These three sets of results were factor analysed separately and items were selected to constitute the five factors from the first stage of the development of the LSS (Multidimensional Model of Sport Leadership). Items that had the highest loading on the same factor in all three sets of data and did not have a loading higher than .3 in at least two of the data sets were selected, resulting in 40 items being retained (Chelladurai & Saleh, 1980).

Table 1. Items for Training and Instruction (Training Behaviour)

		Always	Often	Occasionally	Seldom	Never
1.	See to it that every athlete is working to his capacity					
2.	Explain to each athlete the techniques and tactics of the sport					
3.	Pay special attention to correcting athletes' mistakes					
4.	Make sure that his part in the team is understood by all the athletes					
5.	Instruct every athlete individually in the skills of the sport					
6.	Figure ahead on what should be done					
7.	Explain to every athlete what he should and should not do					
8.	Expect every athlete to carry out his assignment to the last detail					

9.	Point out each athlete's strengths & weaknesses					
10.	Give specific instructions to each athlete as to what he should do in every situation					
11.	See to it that the efforts are coordinated					
12.	Explain how each athlete's contribution fits into the whole picture					
13.	Specify in detail what is expected of each athlete					

According to Chelladurai & Saleh (1978) factor one was named "Training Behaviour" as it focused on the training process to improve athlete's performance. In the second stage of the development of the LSS Chelladurai & Saleh (1980) changed the name of this factor to Training & Instruction as it was similar to Danielson et al.'s Competitive Training Factor (as cited in Chelladurai & Saleh) and House & Dessler's Instrumental Leadership Dimension (as cited in Chelladurai & Saleh). It incorporates how the coach's behaviour is directed towards improving athlete's performance. See Table 1. for the items listed under Training & Instruction.

Table 2. Items for Autocratic Behaviour

		Always	Often	Occasionally	Seldom	Never
1.	Work relatively independent of the athletes					
2.	Not explain his action					
3.	Refuse to compromise a point					
4.	Keep to himself					
5.	Speak in a manner not to be questioned					

The second factor was named "Autocratic Behaviour" as it referred to the tendency of the coach to stay distant from the athletes and make decisions for them (Chelladurai & Saleh, 1978). That is, the coach keeps to himself and doesn't allow the athletes to participate in the decision making for the team or themselves. See Table 2. for Items relating to Autocratic Behaviour.

Table 3. Items for Democratic Behaviour

		Always	Often	Occasionally	Seldom	Never
1.	Ask for the opinion of the athletes on strategies for specific competitions					

2.	Get group approval on important matters before going ahead					
3.	Let his athletes share in decision making					
4.	Encourage athletes to make suggestions for ways of conducting practices					
5.	Let the group set it's own goals					
6.	Let the athletes try their own way even if they make mistakes					
7.	Ask for the opinion of athletes on important coaching matters					
8.	Let athletes work at their own speed					
9.	Let the athletes decide on the plays to be used in the game					

Chelladurai & Saleh (1978) named the third factor 'Democratic Behaviour' as it related to the democratic style of leadership. Democratic Behaviour refers to the coach allowing athletes to be involved in the decision making process on important matters (Chelladurai & Saleh). That is, athletes are encouraged to voice their opinions and participate in decision making on significant issues. See Table 3. for items relating to Democratic Behaviour.

Democratic Behaviour and Autocratic Behaviour are both related to the decision making style of the coach, which are consistent with the research and literature of House & Dessler, House & Mitchell, Schriesheim *et al.*, and Yukl, (as cited in Chelladurai and Saleh, 1978).

Table 4. Items for Social Support

		Always	Often	Occasionally	Seldom	Never
1.	Help the athletes with their personal problems					
2.	Help members of the group settle their conflicts					
3.	Look out for the personal welfare of the athletes					
4.	Do personal favors to the athletes					
5.	Express affection he feels for his athletes					
6.	Encourage the athlete to confide in him					

7.	Encourage close and informal relations					
8.	Invite athletes to his home					

Chelladurai & Saleh (1980) considered the fourth factor to be similar to the Support factors in Bowers & Seashore’s and House & Dessler’s leadership scales and research by Cartwright & Zander, Mitchell, and Danielson (as cited in Chelladurai & Saleh 1978). Therefore, it was named ‘Social Support’. It refers to the behaviour of the coach that is directed towards the personal needs of athletes. See Table 4. for items listed under Social Support.

Table 5. Items for Positive Feedback (Rewarding Behaviour)

		Always	Often	Occasionally	Seldom	Never
1.	Compliment an athlete on his performance in front of others					
2.	Tell an athlete when he does a particularly good job					
3.	See that an athlete is rewarded for a good performance					
4.	Express appreciation when an athlete performs well					
5.	Give credit when credit is due					

The fifth factor was named "Rewarding Behaviour" as the items were similar to the ‘recognition’ dimension of Hemphill & Coons Leader Behaviour Questionnaire (as cited in Chelladurai & Saleh, 1978), and referred to rewarding athletes for their efforts and performance. It was then renamed "Positive Feedback" by Chelladurai & Saleh (1980) in the second stage of the construction of the LSS as it related to the need of the coach to compliment athletes and give positive feedback on their performances to maintain motivation. See Table 5. for items related to Positive Feedback.

Chelladurai & Saleh (1978; 1980) claimed that the items in each factor were valid as they were similar to factors and leader behaviours from previous leadership research.

Reliability:

Internal consistency estimates (Cronbach's Alpha) were used for the five leadership dimensions of the LSS in studies by Brooks, Ziatz, Johnson, & Hollander (2000), Chelladurai & Carron (1981), Chelladurai, et al. (1988), Chelladurai & Saleh (1980), Dwyer & Fischer (1988), Horne & Carron (1985), Hastie (1993; 1995), Salminen, & Luikkonen (1994), Sherman, Fuller, & Speed (2000) to show the reliability of the LSS. Nunnally (as cited in Dwyer & Fischer, 1988) recommended satisfactory reliabilities of at least .70. That is, factor coefficients closer to one are considered to be reliable.

Table 6. Internal Consistency Estimates for Athletes' Preference Version of the LSS Dimensions of

Leader Behaviour.

Source	Dimensions				
	T&I	DB	AB	SS	PF
Chelladurai & Saleh (1980)					
- physical education students	.76	.77	.66	.72	.79
- Canadian athletes	.83	.75	.45	.70	.82
Chelladurai & Carron (1981)					
- youth sports	.83	.68	.48	.77	.78
Chelladurai et al. (1988)					
- Japanese athletes	.81	.72	.55	.72	.73
- Canadian athletes	.77	.67	.55	.78	.77
Hastie (1993)					
- high school girl volleyball players	.72	.75	.74	.76	.73
Hastie (1995)					
- secondary school volleyball players	.72	.76	.74	.77	.75
Sherman, Fuller, & Speed (2000)					
- Australian athletes	Scores for both T&I and DB were between .71 & .82		.59	.71	.82

The internal consistency estimates for the athletes' preference version of the LSS were similar. Chelladurai & Saleh (1980) stated that coefficients for all 5 dimensions of leader behaviour were acceptable, although coefficients for Autocratic behaviour were the lowest (at .66 for physical education student' preferences and .45 for athletes preferences). This trend was also observed by Chelladurai & Carron (1981) in their study of leadership in youth sports, who reported acceptable coefficients for Training & Instruction, Democratic Behaviour, Social Support, and Positive Feedback, but a low value for Autocratic Behaviour (.48). Research by Chelladurai et al. (1988) and Sherman, Fuller, & Speed (2000) also observed a similar trend in the coefficient values for the five dimensions of leader behaviour (see Table 6.).

Hastie (1993; 1995) reported similar coefficients in his studies. Scores for all leadership dimensions were above .72, and were considered acceptable. Hastie did not observe low values for Autocratic Behaviour, as in previous research (see Table 6.).

These generally high coefficient values indicate that the athletes preference version of the LSS is reliable, however, in a review of Leadership in sports, Chelladurai (1990) recommends low values for Autocratic Behaviour (which have been consistently low) should be viewed cautiously. Chelladurai & Carron (1980) and Chelladurai et al. (1988) also stated in their studies that caution must be taken when looking at the Autocratic Behaviour results.

Table 7. Internal Consistency Estimates for Athletes' Perception Version of the LSS Dimensions of Leader Behaviour.

Source	Dimensions				
	T&I	DB	AB	SS	PF
Chelladurai & Saleh (1980)					
- Canadian athletes	.93	.87	.79	.86	.92
Chelladurai et al. (1988)					
- Japanese athletes	.89	.81	.57	.84	.81
- Canadian athletes	.88	.75	.59	.84	.91

The internal consistency estimates for the athletes' perception version of the LSS were generally higher than for the athletes' preference version (See Table 7.). This trend was also stated by Chelladurai (1990) in his review of Leadership in sport. However, Chelladurai et al. (1988) observed low coefficient values for Autocratic Behaviour for the Athletes Perception version of the LSS, as well as for the athletes' preference version. All scores were considered by the authors (Chelladurai & Saleh, 1980, and Chelladurai et al., 1988) to be satisfactory; however, the results relating to autocratic behaviour must be viewed with caution. These results indicate that the athletes' perception version of the LSS is reliable as similar results have been found in both studies using the Athletes Perception version of the LSS.

Table 8. Internal Consistency Estimates for Coaches' Perceptions of Their Own Behaviour Version of the LSS Dimensions of Leader Behaviour.

Source	Dimensions				
	T&I	DB	AB	SS	PF
Dwyer & Fischer (1988)					
- original subscale	.86	.67	.04	.57	.75
- shortened subscale	.86	.77	.36	.61	.75

Salminen & Liukkonen (1994)					
- Finnish version of LSS on Finnish coaches	.82	.78	.12	.71	.85
Bennett & Maneval (1988)					
- youth baseball coaches	.82	.81	.58	.76	.81
Brooks, Ziatz, Johnson, & Hollander (2000)					
- Strength & Conditioning Coaches LSS	.45	.48	.56	.40	.43

The internal consistency estimates for the version of the LSS that measures the coaches' perception of their own behaviour differ from the results of the athletes' preference and perception versions (See Table 8.). It is, however, still considered to be reliable. Dwyer and Fischer (1988) reported relatively low and unsatisfactory coefficient values for the original subscale for three of the five dimensions. To increase the reliability of the test, the authors deleted items from the Democratic Behaviour, Autocratic Behaviour, and Social Support subscales. The values for the Autocratic behaviour and Social Support were still not at a satisfactory level, and so these results were viewed with caution (Dwyer & Fischer).

Due to the relatively low reliability of the coach's version of the LSS (Dwyer & Fischer, 1988) (when compared to the athletes' perception and preference versions) Salminen & Liukkonen (1994) attempted to verify the reliability of the coaches' version. They administered the Finnish translation of the coaches' version of the LSS to Finnish coaches and reported high and acceptable coefficients for four of the five subscales, with a low value for Autocratic Behaviour. Bennett and Maneval (1988) also reported similar results (See Table 8.).

Brooks et al. (2000) modified the coaches' version of the LSS for use with strength and conditioning coaches (SCCLSS). They reported different internal consistency estimates to the previous research using the coach's perception version of the LSS. The scores for all five subscales were low (See Table 8.), indicating that the subscale items may not be the same construct (Brooks et al.). Therefore, this indicates that the SCCLSS may not be as reliable as the coaches version of the LSS used in studies by Dwyer & Fischer (1988), Salminen & Liukkonen (1994), and Bennett & Maneval (1988). Brooks et al. suggested that similar items be added to each subscale to improve the internal consistencies of the SCCLSS.

The above results for the five subscales of the athletes preference version, athletes perception version and coaches perception version of the LSS indicate satisfactory internal consistencies, with the exception of coefficients for Autocratic Behaviour. That is, the three versions of the LSS are considered reliable, as long as the results for the Autocratic Behaviour subscale are viewed with caution.

Chelladurai & Saleh (1980) also observed test-retest reliability. They administered a revised questionnaire after 4 weeks to 54 of the physical education student to estimate test-retest reliability. They found the reliability coefficients to be adequate, therefore claiming reliability of the LSS. Due to the low internal consistency estimates for the five subscales of the coaches version of the LSS, Brooks et al. (2000) also recommended the establishment of test-retest reliability for the SCCLSS (which would increase the reliability of the scale for strength and conditioning coaches).

Validity:

Validity refers to the extent to which the scale measures what it was designed to measure (Carmines & Zeller, 1979), that is the extent to which the LSS measures Leadership in sports. The LSS has been proven as a valid instrument in the measurement of leadership in sport by a variety of studies. Four different types of validity have been established for the LSS including Factorial Validity, Content Validity, Convergent and Discriminant Validity and Criterion-Related Validity.

Chelladurai & Saleh (1980) claimed Factorial Validity for a number of reasons. The items had a similar factor structure across all three samples (physical education student's preference for leader behaviour and athletes preference and perception of leader behaviour) (Chelladurai, 1990), thus, the factor structure was considered to be stable. As expected, the items and factors extracted were similar to those extracted in the Multidimensional Model of Leadership for Sport. That is, the factors were reproducible. Chelladurai & Saleh also stated Content Validity, as the five subscales of leader behaviour were consistent with previous research and literature on leadership (as described in construction). This consistency shows the significance of the five-factor solution.

Convergent & Discriminant Validity refers to the extent to which the scale relates to other measures of theoretical derived hypotheses concerning leadership (Carmines & Zeller, 1979), that is, whether different versions of the LSS can be used to measure Leadership in sports. Convergent & Discriminant Validity for the LSS was stated by Chelladurai (1990) as different versions of the LSS have been successfully used to measure leadership in Youth Sports (Chelladurai & Carron, 1981), with Japanese Athletes (Chelladurai et al., 1988), the Coach's perception of their own behaviour (Dwyer & Fischer, 1988), Finnish Coaches perception's of their own behaviour (Salminen & Luikkonen, 1994) and Strength & Conditioning coaches (Brooks et al, 2000). These studies provide evidence for the validity of the LSS.

Criterion-Related Validity refers to the ability of the scale to be used to estimate some form of behaviour that is different to what the scale was designed to measure (Carmines & Zeller, 1979), that is, whether the LSS can be used to estimate psychological factors other than leadership. According to Chelladurai (1990, p336) "Criterion Related Validity can be inferred from support for the relationship between the five dimensions of leader behaviour and selected criterion variables". That is, a variety of studies have shown a supportive relationship between the five dimensions of leader behaviour and other psychological factors. These factors include Athletes' Satisfaction (Schliesman, and Weiss & Frederichs, as cited in Chelladurai), Performance levels of athletes (Garland & Barry, as cited in Chelladurai), Performance (Gordon; Summers; Weiss & Frederichs, as cited in Chelladurai), and Dropout behaviour in athletics (Robinson & Carron, as cited in Chelladurai). Coach-athlete compatibility (Horne & Carron, 1985). Other criterion variables that have been studied include Athletic Maturity (Chelladurai & Carron, 1983), Coach-athlete compatibility (Horne & Carron, 1985), and Teacher/Coach Effectiveness (Laughlin & Laughlin, 1994). These studies also provide evidence for the validity of the LSS.

Norms:

There are no norms suggested in studies using the LSS, however, there have been several trends to emerge from the psychometric data. Chelladurai & Carron (1983) found that preference for training and instruction decreased from high school midget to senior basketball players, but then increased for university

basketball players. Where as, players' preference for Social Support increased from high school midget to university players.

Chelladurai & Saleh (1980) found that Japanese athletes preferred more Autocratic Behaviour and Social Support and perceived higher levels of Autocratic Behaviour than Canadian athletes. They also found that Canadian athletes preferred more Training and Instruction and perceived higher levels of Training & Instruction, Democratic Behaviour, and positive feedback. Greater satisfaction with leadership and personal outcomes was also expressed by Canadian athletes, in comparison to the Japanese athletes.

Hastie (1993) administered the preferred version of the LSS to Australian & Canadian Volleyball players. He found that Australian volleyball players preferred more Democratic Behaviour than Canadian volleyball players. He also stated that as players aged (from 15 to 18 years) their preference for Autocratic Behaviour increased. Therefore, only slight differences in nationality and age were found on leadership preferences.

Hastie (1995) also administered the preference version of the LSS to Australian secondary school volleyball players. **He found that boys preferred more Autocratic Behaviour than girls,** who preferred more Positive Feedback. Higher division volleyball players preferred more Social Support than lower division players, who preferred more Positive Feedback.

Bennett & Maneval (1998) found that Elite Dixie Youth Baseball Coaches thought Positive Feedback and Training & Instruction was important, where as Autocratic Behaviour was of least importance.

Sherman et al. (2000) administered the Athletes Preference version of the LSS to Australian Football players, netball players, and basketball players. He found that Australian athletes preferred more Positive Feedback, followed by Training and Instruction, and Democratic Behaviour, and preferred Social Support and Autocratic Behaviour the least. This low preference for Social Support is inconsistent with other studies on Athletes preferences for specific leader behaviour, which suggests that there may be differences between Australians and other nationalities. **Sherman et al. also found a slight difference in preferences across gender. Females preferred more positive feedback and democratic behaviour.** This finding, was consistent with previous research on gender and leadership preferences, however the differences in this study were relatively small, and therefore, more research needs to be conducted to find a conclusive answer to the question of gender differences in preferences for specific leader behaviour.

These trends should not be considered as the norms for a specific sport, culture, or context as there are many factors that may influence leadership, and therefore may have influenced the results for these specific situations. For example, not all Japanese athletes will prefer Autocratic Behaviour and Social Support, and not all Dixie Youth baseball coaches will place more emphasis on positive feedback and training and instruction, however the sampling characteristics in these particular studies have generated these distinct results. Although these results have some meaning in relation to leadership in that particular situation, it is not the only factor that should be considered when studying leadership behaviour in similar situations.

Revision of the LSS:

Zhang, Jenson, & Mann (1997) attempted to revise the three versions of the LSS due to a number of potential problems cited in the literature regarding studies using the LSS. One problem was with regard to different cultures and norms in that culture, that is, coaches in some cultures (countries) may not behave in a certain way that is tested in the LSS due to rules and regulations governing coaching behaviour. Zhang et

al. expected that a more effective tool for measuring leadership in sport would result from careful revision of the original LSS. After revising the original version of the LSS through adding factors and items, validating the content and construct of the revised scale and analyzing the internal consistency reliability of the revised scale, Zhang et al. proposed a revised version of the LSS. The revised version of the LSS (Zhang et al.) maintained the same three versions, with similar preceding phrases, along with the same 5 point response scale. **Two extra factors were added, which take into account the coaches behaviour directed towards group cohesion and consideration of situational factors.** Through the revision process, Zhang et al. discovered that the revised version of the LSS was not a "perfect measurement instrument with respect to measurement standards". However, they did state that it was acceptable to use in the measurement in the same way as the original LSS. Although this revised scale was considered acceptable for measuring leadership, and its relationship with other variables, in the sport context, **I have not come across evidence of its application, and therefore, still believe that the original version of the LSS is still considered valid and reliable in the measurement of leadership in sport.**

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