

Coach Leadership and Athlete Outcomes: A Comparative Analysis of the Leadership, Performance and Satisfaction Associations across Two Cohorts of University Athletes

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Abstract

Coach leadership is expected to shape both how athletes perform and how satisfied they feel, but the two outcomes are seldom weighed against each other within a single athlete population. This study compared the leadership–performance and leadership–satisfaction associations among university athletes of Universiti Teknologi MARA (UiTM) Seremban 3. Two cohorts assessed with the same Leadership Scale for Sports were compared. Cohort A ($n = 288$) was measured on self-rated performance using the Athlete's Subjective Performance Scale, and Cohort B ($n = 101$) on athlete satisfaction using the Athlete Satisfaction Questionnaire. A third study from the same campus, in which parental involvement was correlated with the same performance scale ($n = 198$), served as a benchmark. Welch tests compared the leadership dimensions and Fisher's r -to- z test compared the correlations. Training and instruction ranked highest in both cohorts and social support was indistinguishable between them, while autocratic behaviour was markedly lower in Cohort B. Coach leadership explained 7.9 per cent of variance in self-rated performance but 73.8 per cent in satisfaction, $z = 8.55$, $p < .001$, Cohen's $q = 1.00$. Parental involvement explained 37.1 per cent of the same performance measure, which rules out instrument insensitivity as the explanation.

Keywords: Coach Leadership Behaviour, Athlete Satisfaction, Athlete Performance, Leadership Scale for Sports, University Athletes

Introduction

The behaviour of a coach is treated in both research and practice as one of the strongest levers available for improving what happens to an athlete. Two outcomes dominate that

literature. The first is performance, meaning the athlete's capacity to execute skills, contribute to the team and achieve competitive results. The second is satisfaction, meaning the positive affective state that follows from an athlete's evaluation of the structures, processes and outcomes of the sporting experience (Riemer & Chelladurai, 1997). The Multidimensional Model of Leadership specifies both as consequences of the congruence between required, preferred and actual leader behaviour (Chelladurai, 2007; Chelladurai & Saleh, 1980). In everyday coaching discourse the two are often treated as interchangeable, on the assumption that an athlete who is satisfied with the coach will also perform better, and that a coach who produces results will also produce satisfied athletes.

The empirical record is less generous to that assumption. Meta-analytic evidence indicates that the association between coach leadership behaviour and athlete satisfaction is large, whereas the association between leadership and team-level process outcomes such as cohesion is only moderate (Kim & Cruz, 2016). A more recent synthesis of 26 studies and 319 effect sizes reported a moderate overall association between coach leadership and athlete satisfaction, with training and instruction and positive feedback carrying the largest individual effects and autocratic behaviour contributing almost nothing (Zhu et al., 2024). Studies that place performance rather than satisfaction on the outcome side tend to report weaker associations, and the reason is rarely examined. Performance is multiply determined. Physical preparation, opponent quality, competition format, injury and luck all enter the outcome, and the coach controls only part of that chain. Satisfaction, by contrast, is an appraisal of the sporting experience itself, and the coach sits close to the centre of that appraisal.

Testing this proposition properly requires holding the population constant. Comparing a leadership–satisfaction coefficient drawn from one country and sport with a leadership–performance coefficient drawn from another confounds the outcome construct with sampling, culture, competitive level and instrument. What is needed is a setting in which the same leadership instrument has been administered to athletes drawn from the same institution and the same competition system, with different outcome measures attached. The inter-campus university games at UiTM Seremban 3, known locally as KARISMA, provide exactly that setting. Tajri et al. (2024) surveyed 288 of these athletes at this campus using the Leadership Scale for Sports (LSS) and the Athlete's Subjective Performance Scale (ASPS), and reported a statistically significant but low correlation of $r = .281$. The present authors subsequently surveyed a second cohort of athletes at the same campus using the same LSS instrument, but with the Athlete Satisfaction Questionnaire (ASQ) on the outcome side, and obtained $r = .859$.

A third study from the same campus supplies a useful benchmark. Tajri, Sazali, Masri et al. (2024) correlated parental involvement with the identical ASPS instrument in 198 athletes of the same population and obtained $r = .609$, which is more than twice the coefficient the coach obtained against the same outcome. The contrast between the coefficients is large enough to warrant formal examination rather than casual comment. This paper therefore treats the two cohorts as a matched comparison. It asks, first, whether the coaching environment the two cohorts describe is in fact comparable, and second, whether the difference between the two leadership–outcome coefficients exceeds what sampling variation would produce. The contribution is not another single-cohort correlation. It is an explicit, quantified test of which

outcome the leadership pathway binds to more tightly in a Malaysian university sport population, and an account of what that means for how coaching effectiveness is evaluated.

Problem Statement

The phenomenon and the rationale. Coach leadership is routinely treated in sport management practice as a single lever that, pulled correctly, improves how athletes perform and how satisfied they feel at the same time. The Multidimensional Model holds both outcomes to arise from the same underlying fit between required, preferred and actual leader behaviour (Chelladurai, 2007), and decisions about coach training, coach evaluation and resource allocation in university sport programmes are commonly made on the assumption that the two move together. The empirical record for the two outcomes has, however, developed along separate and uneven tracks. Leadership–satisfaction associations are well established and consistently strong (Kim & Cruz, 2016; Zhu et al., 2024), whereas leadership–performance associations are reported far less often and, where reported, appear considerably weaker (Tajri et al., 2024; White & Rezania, 2019). If the two outcomes do not in fact respond to leadership to the same degree, institutions that judge coaching quality primarily through performance and win–loss records are relying on the outcome least responsive to the behaviour being assessed, while the outcome most responsive to it, athlete satisfaction, goes largely unmeasured.

The research gap. This asymmetry has not been tested directly, because the two outcome literatures have rarely been brought into the same study. The available meta-analyses compare leadership–satisfaction associations against leadership–cohesion associations (Kim & Cruz, 2016; Zhu et al., 2024), not against leadership–performance associations, and the few studies that place performance on the outcome side report a single correlation in isolation (Tajri et al., 2024), with no benchmark against which to judge whether a modest coefficient reflects a genuinely weak predictor or an outcome measure that is simply insensitive to social influence in general. No published study has held the leadership instrument, the athlete population and the institutional context constant while varying only the outcome construct, and then tested formally whether the resulting leadership–outcome coefficients differ by more than sampling variation would allow. That is the specific gap this study addresses.

The contribution of this study. Closing this gap calls for a setting in which the same leadership instrument has already been administered to comparable athletes under comparable competitive conditions, with different outcome measures recorded independently. The two KARISMA cohorts at UiTM Seremban 3 already satisfy these conditions, which removes population, instrument and institutional context as competing explanations for any difference observed. The contribution of this study is therefore not an additional single-cohort correlation to sit alongside those already published. It is the first attempt, to the authors' knowledge, to test formally, through Fisher's r -to- z comparison and against an independent benchmark correlation on the same performance measure, whether coach leadership binds more tightly to athlete satisfaction than to athlete performance within one population. The result bears directly on how coaching effectiveness is evaluated in university sport, a point developed further in the Implications section.

Literature Review

Coach Leadership and the Multidimensional Model

The LSS operationalises coach leadership across five dimensions: training and instruction, democratic behaviour, autocratic behaviour, social support and positive feedback (Chelladurai & Saleh, 1980). Training and instruction is task oriented and concerns technical and tactical guidance. Democratic and autocratic behaviour describe opposite ends of decision-making style. Social support and positive feedback are relational and motivational. The Multidimensional Model holds that athlete outcomes depend on the degree of fit between the behaviour the situation requires, the behaviour athletes prefer and the behaviour the coach actually shows (Chelladurai, 2007). Crucially, the model names performance and satisfaction as two distinct consequences of that fit rather than as one combined outcome, which is precisely the distinction that most applied studies collapse.

Athlete Satisfaction as a Leadership Outcome

Athlete satisfaction has been the more frequently studied of the two consequences, and the findings are consistent in direction. Kim and Cruz (2016) synthesised 288 effect sizes from 24 LSS-based studies and reported a large leadership–satisfaction relationship, with training and instruction the strongest single contributor. Zhu et al. (2024) reported the same ordering in a Chinese sample, with training and instruction and positive feedback producing the largest effects and autocratic behaviour only marginally positive. Jin et al. (2022) showed that democratic leadership influenced athlete satisfaction through the quality of the coach–athlete relationship, while autocratic leadership had no direct effect. Davis et al. (2019) added that the communication strategies a coach uses are a direct antecedent of both relationship quality and athlete satisfaction. In Malaysian and regional university sport the pattern is reproduced. Bakri et al. (2022) reported a positive relationship at UiTM Seremban, Mansor et al. (2024) reported significant relationships among inter-campus games athletes at UiTM Perlis, Jawoosh et al. (2022) reported that supportive leadership raised satisfaction in university football teams, and Wan Pa and Mamat (2024) reported lower satisfaction where coaches were perceived as highly authoritarian.

Athlete Performance as a Leadership Outcome

Work placing performance on the outcome side is thinner and the coefficients are smaller. White and Rezania (2019) found that ethical coach leadership predicted athlete voice and performance, but the performance path was the weaker of the two. Tajri et al. (2024) reported $r = .281$ between overall LSS scores and ASPS scores among university athletes. Part of the explanation is definitional. Where performance is measured objectively, the coach is only one input among many. Where it is measured subjectively, as in the ASPS, the athlete is asked to appraise their own capability rather than the coach, so the rating is anchored to the self rather than to the coaching relationship. Either way, the leadership signal is diluted before it reaches the outcome. Motivation research in the same collegiate population supports this reading, showing that intrinsic, extrinsic and amotivational sources all feed into performance independently of the coach (Aina et al., 2023). Tajri, Sazali, Masri et al. (2024) then demonstrated directly that another social agent, the parent, correlated with the same ASPS measure at $r = .609$ in this population, which places the coach well below the parent as a correlate of how these athletes rate their own performance.

Rationale for a Within-Population Comparison

Because the two outcome literatures have developed separately, the apparent gap between them has never been tested where it matters, which is inside a single population with a single leadership instrument. Kim and Cruz (2016) and Zhu et al. (2024) both compared satisfaction with cohesion, not with performance. The present comparison closes that gap for a defined Malaysian university sport population and asks whether the difference survives a formal statistical test.

Research Objectives

The study pursues three objectives. First, to compare the profile of perceived coach leadership behaviour reported by the two athlete cohorts at UiTM Seremban 3. Second, to describe the outcome levels recorded in each cohort. Third, to test whether the leadership–satisfaction correlation differs significantly from the leadership–performance correlation.

H_0 : There is no significant difference between the leadership–performance correlation and the leadership–satisfaction correlation among university athletes of UiTM Seremban 3.

H_1 : The leadership–satisfaction correlation is significantly stronger than the leadership–performance correlation among university athletes of UiTM Seremban 3.

Methodology*Research Design*

The study used a comparative cross-sectional design in which two independent cohorts of university athletes from the same campus were placed side by side. Cohort A is the published sample reported by Tajri et al. (2024). Cohort B is a cohort surveyed by the present authors. Both cohorts were assessed with the same coach leadership instrument, so the leadership side of the comparison is held constant while the outcome construct varies. Comparative statistics were computed from the reported summary statistics of each cohort, an approach that requires only the mean, standard deviation and sample size for descriptive comparisons, and the correlation coefficient and sample size for the comparison of associations.

Table 1

Design features of the two comparison cohorts

Feature	Cohort A	Cohort B
Source	Tajri et al. (2024)	Present study
Population	UiTM Seremban 3 athletes, KARISMA games	UiTM Seremban 3 athletes, KARISMA games
Sample size	288	101
Sampling	Simple random sampling	Purposive sampling
Leadership measure	Leadership Scale for Sports, 40 items	Leadership Scale for Sports, 40 items
Outcome measure	Athlete's Subjective Performance Scale, 6 items	Athlete Satisfaction Questionnaire, 16 items
Outcome construct	Self-rated sport performance	Athlete satisfaction
Response format	5-point Likert scale	5-point Likert scale
Leadership reliability	$\alpha = .913$	$\alpha = .957$ (pilot, $n = 30$)
Outcome reliability	$\alpha = .925$	$\alpha = .940$ (pilot, $n = 30$)
Analysis software	SPSS	jamovi

Note. Reliability for Cohort A was computed on the main sample; reliability for Cohort B was computed on an independent pilot sample of 30 athletes who were not part of the main study.

Participants

Cohort A comprised 288 athletes selected through simple random sampling from athletes representing UiTM in inter-campus competition. Cohort B was drawn from a population of 103 registered university athletes at UiTM Seremban 3. Following Krejcie and Morgan (1970), the minimum sample required was 80, and a 20 per cent buffer was applied to give a target of 96. Purposive sampling was used because the study required athletes with direct training and competition experience under an appointed coach. A total of 101 complete responses were obtained and retained for analysis, which exceeds the required minimum. The profile of Cohort B is reported in Table 2. Demographic detail was not reported for Cohort A, which is acknowledged in the limitations.

Table 2

Respondent profile of Cohort B (n = 101)

Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	46	45.5
Female	55	54.5
Age group		
18–21 years	46	45.5
22–25 years	53	52.5
26–29 years	2	2.0
Type of sport		
Individual	29	28.7
Team	72	71.3
Sport represented		
Badminton	26	25.7
Handball	21	20.8
Netball	19	18.8
Football	14	13.9
Athletics	11	10.9
Futsal	2	2.0
Rugby	2	2.0
Other sports (one athlete each)	6	5.9

Note. Other sports comprised basketball, cycling, hockey, silat, table tennis and volleyball, with one athlete each.

Benchmark Study

A third dataset was introduced as a benchmark rather than as a third arm of the comparison. Tajri, Szali, Masri et al. (2024) surveyed 198 athletes from the same campus and the same competition system, using the Parental Involvement in Sports Questionnaire as the predictor and the identical Athlete's Subjective Performance Scale as the outcome, and reported $r = .609$, $p < .01$. Because the outcome instrument and the population are held constant while the predictor changes, this coefficient allows the leadership–performance association to be judged against something other than zero. It answers the obvious objection that a low coefficient against the ASPS might reflect an insensitive outcome measure rather than a weak predictor.

Instruments

Coach leadership behaviour was measured in both cohorts with the Leadership Scale for Sports (Chelladurai & Saleh, 1980). The perceived version of the scale contains 40 items distributed across training and instruction (13 items), democratic behaviour (9 items), autocratic behaviour (5 items), social support (8 items) and positive feedback (5 items), rated from 1 (strongly disagree) to 5 (strongly agree).

Cohort A measured the outcome with the Athlete's Subjective Performance Scale (Nahum, 2016), a six-item instrument covering general performance, team contribution and personal ability. Cohort B measured the outcome with a 16-item adaptation of the Athlete Satisfaction Questionnaire (Riemer & Chelladurai, 1998) covering quality of training, mental and emotional health, competitive performance and competitive experience. Both outcome instruments used the same 5-point response format.

Reliability and Ethical Procedure

Internal consistency was acceptable in both cohorts. Cohort A reported Cronbach's alpha of .913 for the LSS and .925 for the ASPS. Cohort B conducted a pilot study with 30 athletes from the same faculty who were excluded from the main sample, and obtained alpha values of .957 for the LSS and .940 for the ASQ. All values exceed the .80 threshold that Taber (2018) treats as good reliability for research instruments. Ethical clearance was obtained from the university before data collection for Cohort B. Permission was secured from the relevant sports authorities, participants were briefed on the purpose of the study, participation was voluntary, and responses were anonymous and treated as confidential.

Data Analysis

Cohort B primary data were analysed in jamovi using descriptive statistics and Pearson correlation. The comparative analyses reported here were computed from the summary statistics of both cohorts. Four procedures were applied. First, each of the five LSS dimensions was compared between cohorts using Welch's t test for unequal variances (Welch, 1947), with Cohen's d computed on the pooled standard deviation as the effect size and a Bonferroni-adjusted criterion of $\alpha = .01$ applied across the five comparisons. Second, rank-order agreement between the two leadership profiles was assessed using Spearman's rho. Third, 95 per cent confidence intervals were constructed for each outcome correlation using Fisher's variance-stabilising transformation (Fisher, 1921). Fourth, the correlations were compared pairwise using Fisher's r-to-z test for independent samples, with Cohen's q reported as the effect size for the difference between correlations, where values of .10, .30 and .50 denote small, medium and large differences (Cohen, 1988). All computations used SciPy 1.17 in Python 3.

Results

Comparison of Perceived Coach Leadership Behaviour

Table 3 compares the five LSS dimensions across cohorts. Training and instruction recorded the highest mean in both cohorts, which is the single most stable feature of the comparison. Beyond that point the profiles diverge. Training and instruction was significantly higher in Cohort A than in Cohort B, with a medium effect ($\Delta = 0.38$, $d = 0.63$). Autocratic behaviour showed a difference of similar magnitude in the same direction ($\Delta = 0.40$, $d = 0.59$). Both differences remained significant under the Bonferroni-adjusted criterion. Positive feedback was higher in Cohort A but did not survive the adjustment. Democratic behaviour was higher in Cohort B and did not reach significance. Social support was effectively identical across cohorts, with a difference of 0.02 scale points and a negligible effect size.

Table 3

Comparison of perceived coach leadership dimensions between cohorts

LSS dimension	Cohort A (n = 288) <i>M (SD)</i>	Cohort B (n = 101) <i>M (SD)</i>	Δ (A – B)	95% CI of Δ	t (df)	p	d
Training and instruction	4.38 (0.58)	4.00 (0.66)	+0.38	[0.23, 0.53]	5.15 (158)	< .001**	0.63
Positive feedback	4.16 (0.66)	3.97 (0.73)	+0.19	[0.03, 0.35]	2.30 (161)	.023	0.28
Democratic behaviour	3.82 (0.76)	3.97 (0.67)	-0.15	[-0.31, 0.01]	-1.86 (196)	.064	-0.20
Autocratic behaviour	3.96 (0.62)	3.56 (0.83)	+0.40	[0.22, 0.58]	4.42 (141)	< .001**	0.59
Social support	3.80 (0.72)	3.82 (0.69)	-0.02	[-0.18, 0.14]	-0.25 (182)	.805	-0.03
Overall composite	4.06 ^a	3.87 (0.58)	—	—	—	—	—

Note. Δ = mean difference. d = Cohen's d computed on the pooled standard deviation. Degrees of freedom from Welch's correction are rounded. ** significant at the Bonferroni-adjusted criterion of $\alpha = .01$ for five comparisons. ^a Cohort A did not report an overall composite; the value shown is the item-weighted mean of the five reported subscale means and is presented for description only, not for significance testing.

Rank-order agreement between the two leadership profiles was moderate but not statistically reliable, Spearman's rho = .62, $p = .269$, which is unsurprising given that only five ranked dimensions are available. The most visible reordering concerns autocratic behaviour, which sat third in Cohort A and last in Cohort B. Figure 1 displays the two profiles.

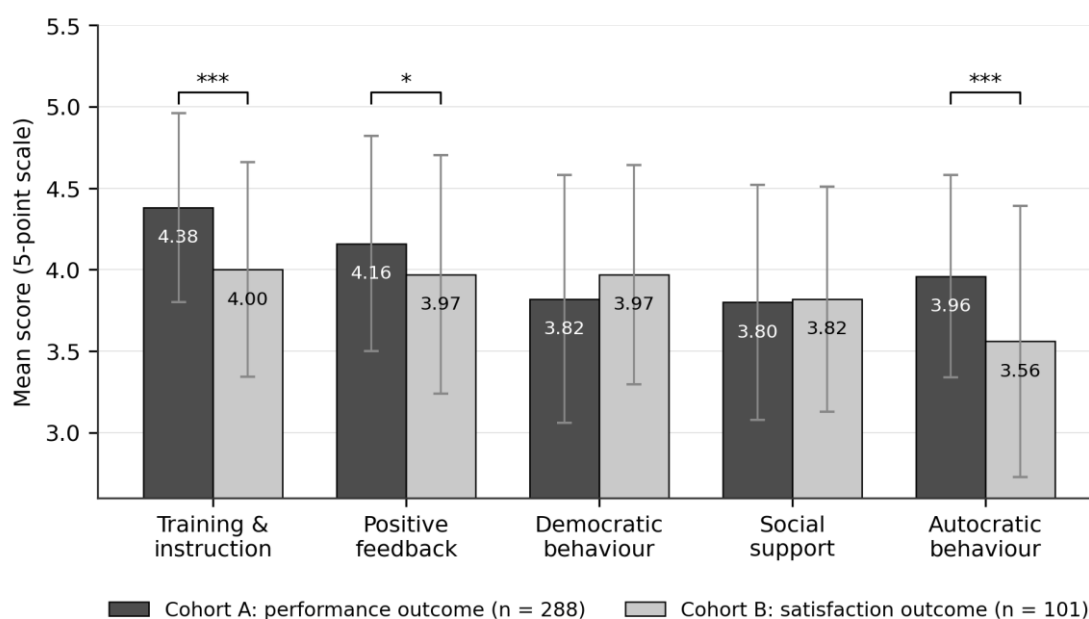


Figure 1 *Perceived coach leadership dimensions in the two athlete cohorts. Error bars show one standard deviation. * $p < .05$; *** $p < .001$.*

Outcome Levels in Each Cohort

Table 4 presents the outcome descriptives. In Cohort A, team contribution recorded the highest subjective performance rating and general performance the lowest. In Cohort B, competitive experience recorded the highest satisfaction rating and mental and emotional health the lowest, although all four dimensions fell within the high band. The two outcome sets cannot be compared directly because they measure different constructs, and they are reported here to establish that neither cohort showed a floor or ceiling problem that would restrict the range of its correlation.

Table 4

Outcome descriptives for both cohorts

Cohort and outcome instrument	Dimension	M	SD	Rank
Cohort A — ASPS (<i>n</i> = 288)	Team contribution	4.03	0.74	1
	Personal ability	4.01	0.75	2
	General performance	3.93	0.80	3
Cohort B — ASQ (<i>n</i> = 101)	Competitive experience	4.05	0.73	1
	Quality of training	4.01	0.71	2
	Competitive performance	3.98	0.74	3
	Mental and emotional health	3.96	0.72	4
	Overall satisfaction	4.00	0.66	—

Note. ASPS = Athlete's Subjective Performance Scale. ASQ = Athlete Satisfaction Questionnaire. Cohort A did not report an overall composite for the ASPS.

Comparison of the Predictor–Outcome Associations

Both cohorts produced a statistically significant positive association between perceived coach leadership and its respective outcome, but the two coefficients differ by a wide margin. In Cohort A, overall perceived leadership correlated with self-rated performance at $r = .281$, 95% CI [.171, .384], accounting for 7.9 per cent of outcome variance. In Cohort B, overall perceived leadership correlated with athlete satisfaction at $r = .859$, 95% CI [.797, .903], accounting for 73.8 per cent of outcome variance. The two confidence intervals do not overlap at any point. Fisher's r -to- z test confirmed that the difference is far larger than sampling variation would produce, $z = 8.55$, $p < .001$, with Cohen's $q = 1.00$, which is twice the conventional threshold for a large difference between correlations. The null hypothesis was therefore rejected. Expressed as explained variance, the leadership–satisfaction association is 9.3 times larger than the leadership–performance association.

The benchmark coefficient places that result in context. Parental involvement correlated with the same ASPS instrument, in the same population, at $r = .609$, 95% CI [.513, .690], accounting for 37.1 per cent of outcome variance. The ASPS is therefore capable of registering a strong association with a social predictor. What it did not register was a strong association with perceived coach leadership. The three coefficients form an ordered gradient, and every adjacent pair differs significantly (Table 6).

Table 5

Predictor–outcome correlations in the same athlete population

Association	r	n	95% CI	r ²	p
Coach leadership → self-rated performance (Cohort A; LSS → ASPS)	.281	288	[.171, .384]	.079	< .001
Parental involvement → self-rated performance (benchmark; PISQ → ASPS)	.609	198	[.513, .690]	.371	< .01
Coach leadership → athlete satisfaction (Cohort B; LSS → ASQ)	.859	101	[.797, .903]	.738	< .001

Note. Confidence intervals constructed using Fisher's r-to-z transformation. Benchmark coefficient reported by Tajri, Sazali, Masri et al. (2024). LSS = Leadership Scale for Sports; PISQ = Parental Involvement in Sports Questionnaire; ASPS = Athlete's Subjective Performance Scale; ASQ = Athlete Satisfaction Questionnaire.

Table 6

Pairwise comparison of the three correlations

Comparison	What varies	z	p	q
Coach → performance vs coach → satisfaction	Outcome	8.55	< .001	1.00
Coach → performance vs parents → performance	Predictor	4.50	< .001	0.42
Parents → performance vs coach → satisfaction	Both	4.70	< .001	0.58

Note. q = Cohen's q. The second comparison assumes the two 2024 samples are independent. They differ in size and report materially different ASPS means, which indicates different respondent sets, but partial overlap cannot be excluded and this comparison should therefore be read as indicative rather than definitive.

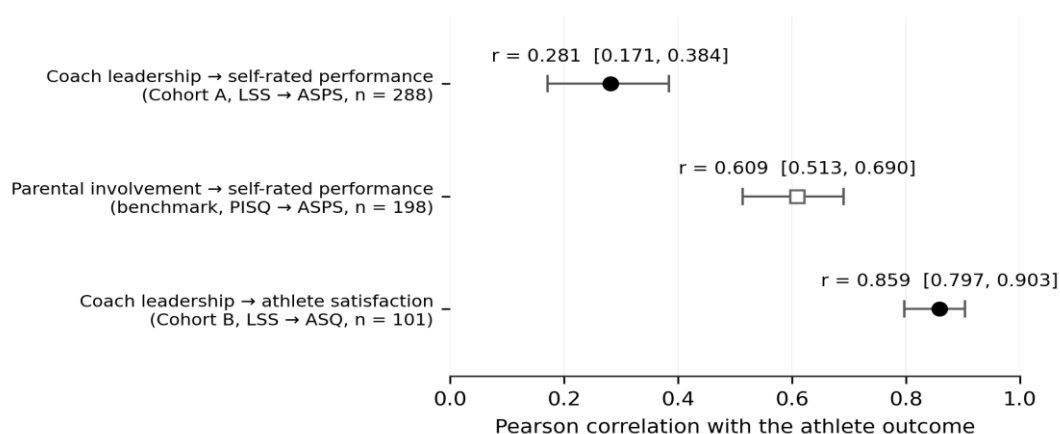


Figure 2 The three predictor–outcome correlations with 95 per cent confidence intervals. The open marker is the benchmark coefficient reported by Tajri, Sazali, Masri et al. (2024).

Discussion

The comparison produced one stable finding, two divergences between cohorts, one large difference in outcome association and one unanticipated result from the benchmark. Each is considered in turn.

Training and Instruction is the Constant

Training and instruction ranked first in both cohorts despite different sampling methods, different cohorts and different outcome instruments. This replicates the dominant finding of the LSS literature. Kim and Cruz (2016) identified training and instruction as the highest contributor to both satisfaction and cohesion, and Zhu et al. (2024) reported the largest single effect size for the same dimension. Within Malaysian university sport the pattern also holds, with Mokhtar et al. (2021) and Mansor et al. (2024) reporting the same ordering. The practical reading is that these athletes consistently experience their coaches as technically instructive, and that this is the behaviour they register most strongly. The absolute level did drop between cohorts, from 4.38 to 4.00, which is a medium effect and worth monitoring, but the ordering did not.

Autocratic Behaviour Moved, and Moved Most

The largest single difference between the cohorts concerns autocratic behaviour, which fell from 3.96 to 3.56 and dropped from third rank to last. Two readings are available and the data cannot separate them. The first is substantive. Coaching practice at the campus may have shifted towards a less controlling style between the two survey points, which would be consistent with the corresponding rise in democratic behaviour from 3.82 to 3.97, the only dimension to increase materially. The second is a sampling artefact. Cohort B was recruited purposively and is dominated by team sports at 71.3 per cent, and athletes in different sport types are known to experience decision-making style differently. Because Cohort A did not report its sport composition, this cannot be ruled out. Whichever reading is correct, the direction is favourable. Jin et al. (2022) found that autocratic leadership had no direct positive effect on the coach–athlete relationship, Zhu et al. (2024) found that autocratic behaviour contributed only marginally to satisfaction and negatively to cohesion, and Zhao and Jowett (2023) reported that athletes experienced better outcomes under relationship-oriented rather than controlling leadership.

Social Support Has Not Moved at All

Social support was statistically indistinguishable across the two cohorts, at 3.80 and 3.82, with an effect size of -0.03 . This is the quietest result in the study and arguably the most useful one for practice. Tajri et al. (2024) flagged social support as the lowest-ranked leadership dimension in Cohort A and identified it as a gap in holistic athlete management. The present comparison shows that the gap did not close. It also aligns with the outcome side of Cohort B, where mental and emotional health recorded the lowest satisfaction mean of the four dimensions. Two independent measurements, taken from different cohorts with different instruments, point at the same weak spot in the same coaching environment. That convergence is stronger evidence than either measurement alone, and it matters given the documented vulnerability of student-athletes in the region to psychological strain (Sazali et al., 2023) and the pressures on their mental resilience from outside the training environment (Noor Apandi et al., 2023).

Why the Satisfaction Pathway Binds More Tightly

The central result is that perceived coach leadership explained 73.8 per cent of variance in athlete satisfaction but only 7.9 per cent of variance in self-rated performance, a difference that is significant at $z = 8.55$ and large by any effect size convention. Three explanations are consistent with the Multidimensional Model and with the wider literature.

The first is causal proximity. Satisfaction is an evaluation of the athletic experience, and the coach is the most visible agent shaping that experience through training design, decision-making, feedback and interpersonal treatment (Riemer & Chelladurai, 1997). Performance, by contrast, is the endpoint of a longer causal chain that includes physical capacity, opponent strength, competition format and chance. The coach influences that chain but does not dominate it, so the leadership signal is attenuated by the time it reaches the performance outcome.

The second is the referent of the measurement. The ASQ asks athletes to evaluate the sporting environment, which the coach substantially constitutes. The ASPS asks athletes to evaluate their own capability and contribution, so the two ratings are free to move independently. This explanation is attractive but only partially survives contact with the benchmark. If the ASPS were simply insensitive to social predictors, parental involvement should also have correlated weakly with it. It did not. The same instrument, in the same population, returned $r = .609$ against parental involvement. The referent of the outcome scale therefore cannot carry the full explanation, and the low leadership coefficient has to be treated as specific to the predictor rather than as an artefact of the criterion.

The third is consistency with meta-analytic evidence. Kim and Cruz (2016) reported that leadership relates to satisfaction more strongly than to cohesion, and the present finding extends that ordering by placing performance further down the same gradient. Read together, the evidence suggests a hierarchy in which coach leadership binds most tightly to affective appraisals of the coach and the environment, less tightly to group-level processes, and least tightly to achievement outcomes.

Parents Outrank Coaches on the Same Performance Measure

The benchmark produces a finding that was not anticipated when the comparison was designed. Against the identical outcome instrument and within the same athlete population, parental involvement explained 37.1 per cent of the variance in self-rated performance while perceived coach leadership explained 7.9 per cent, a difference of $z = 4.50$, $p < .001$. Read at face value, these university athletes attribute their own performance more closely to what their parents do than to what their coaches do. Two readings are plausible. The first is developmental. Parental involvement accumulates across the whole athletic career and is entangled with the athlete's self-concept, whereas the university coach enters late and for a limited period. The second is the measurement of the predictor itself. The parental study reported very high scores on pressure and directive behaviour, and highly salient parental behaviour of that kind may simply be easier for an athlete to recall and connect to their own results than the routine instructional behaviour of a coach. The comparison should be treated as indicative for the reasons set out in the note to Table 6, but it is a result worth replicating deliberately, because it bears directly on where universities place their athlete-development resources.

Alternative Explanations

Intellectual honesty requires that a difference this large be tested against methodological explanations before it is accepted as substantive. Two deserve attention.

The first is common method and construct overlap. Both the LSS and the ASQ were completed by the same respondents at the same sitting, and several ASQ dimensions, particularly quality of training, refer to aspects of the sporting experience that the LSS items also describe. Under those conditions the correlation is inflated by shared method variance and by partial conceptual overlap between predictor and criterion (Podsakoff et al., 2003). The ASPS is less exposed to this because its items refer to the athlete rather than to the coach. A coefficient of .859 between two self-report scales administered together should therefore be read as an upper bound rather than as a pure estimate of association.

The second is sample and design difference. Cohort A used simple random sampling and Cohort B used purposive sampling, and the two differ in size by a factor of nearly three. Purposive recruitment of athletes willing to evaluate their coaches may favour those with clearer and more polarised views, which widens the range of both variables and raises the correlation. The Fisher test assumes the two samples are independent, and while the cohorts were surveyed at different points, partial overlap of individual athletes across years cannot be excluded because neither dataset carries identifiers.

Neither explanation accounts for the whole difference. Common method bias typically inflates correlations by a modest amount rather than by the order of magnitude observed here, the leadership means themselves were measured with the same instrument in both cohorts and produced only small to medium differences, and the benchmark rules out criterion insensitivity. The most defensible conclusion is that the outcome construct is the main driver of the gap, with method factors contributing a secondary share.

Implications

For coaches, the finding reframes what leadership behaviour can reasonably be expected to deliver. Improving instruction, feedback and decision-making is highly likely to improve how athletes feel about their sporting experience, and far less likely to move self-rated performance by itself. That is not an argument for reducing coaching effort. It is an argument against evaluating coaching solely through results, since the outcome most responsive to leadership behaviour is the one most institutions do not measure. The benchmark sharpens the point further: on the same performance scale, the family accounted for roughly five times as much variance as the coach.

For university sports management, the stability of social support across both cohorts is an actionable signal. Coach development at UiTM Seremban 3 has evidently sustained technical instruction and has reduced controlling behaviour, but has not raised the relational dimension. Given that mental and emotional health also recorded the lowest satisfaction mean in Cohort B, targeted development in athlete welfare, communication and emotional support is the intervention with the clearest evidence behind it in this setting.

For researchers, the study is a caution against treating satisfaction and performance as interchangeable indicators of coaching effectiveness. Studies reporting a strong leadership

effect on satisfaction and studies reporting a weak effect on performance are not in conflict. They are measuring different links in the same chain, and a single study that reports only one of them will systematically overstate or understate what leadership does.

Limitations

Four limitations bound these conclusions. First, the comparison is built on summary statistics rather than pooled raw data, so it cannot test interactions, control for demographic covariates, or verify the distributional assumptions of the original analyses. Second, demographic information was not reported for Cohort A, which prevents confirmation that the two cohorts are comparable on gender, age and sport type; this matters because gender has been shown to moderate the leadership–satisfaction relationship (Kim & Cruz, 2022).

Third, both designs are correlational and cross-sectional, so no causal or temporal claim is available, and the description of change between cohorts is an observation about two samples rather than a demonstration of trend. Fourth, the outcome instruments differ in length and in referent, six items in the ASPS against sixteen in the ASQ, which affects reliability and range and therefore the ceiling of each correlation. Fifth, the benchmark comparison assumes that the two 2024 samples are independent, and the datasets carry no identifiers with which to verify this. Future work should administer the LSS, the ASPS and the ASQ to the same athletes at the same time, which would remove the cohort difference entirely and allow the two outcome pathways to be modelled simultaneously, ideally with structural equation modelling and with a marker variable to estimate common method variance directly.

Conclusion

This study compared two independent cohorts of university athletes at UiTM Seremban 3 who were assessed with the same coach leadership instrument but different outcome measures. Training and instruction was the highest-rated leadership dimension in both cohorts, confirming a stable feature of the coaching environment. Autocratic behaviour was substantially lower in the later cohort and democratic behaviour slightly higher, while social support remained unchanged at a comparatively low level in both. The central finding is that perceived coach leadership was associated with athlete satisfaction far more strongly than with self-rated performance, $r = .859$ against $r = .281$, a difference confirmed by Fisher's r -to- z test at $z = 8.55$, $p < .001$, with Cohen's $q = 1.00$. A benchmark study from the same campus, in which parental involvement correlated with the identical performance scale at $r = .609$, shows that the weak leadership–performance coefficient is not an artefact of an insensitive outcome measure. Coach leadership behaviour in this population is bound much more tightly to how athletes evaluate their sporting experience than to how they rate their own performance. Coaching development and coaching evaluation at university level should be designed with that asymmetry in mind, and the persistent weakness in social support identified across both cohorts is the most immediate target for intervention.

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Conflict of Interest

The authors declare no conflict of interest.

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