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Coach identity leadership behaviours are positively associated with athlete resource appraisals: The mediating roles of relational and group identification.

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Abstract

Background: There is growing evidence identifying the positive effects of sport and exercise leaders engaging in identity leadership. Yet we have limited knowledge of how identity leadership is associated with athletes' resource appraisals (e.g., self-efficacy) and performance, the underpinning mechanisms that explain such relationships, and changes in relationships across a sporting season.

Methods: In Study 1, 412 amateur and professional athletes completed seven questionnaires directly prior to athletic competition in a cross-sectional design. In Study 2, 136 athletes completed seven questionnaires directly before competition, and one questionnaire directly after competition both at the start and the end of the athletic season.

Results: In Study 1, relational identification and group identification mediated the positive relationship between identity leadership and self-efficacy, control, approach goals and social support. In Study 2, identity leadership at the start of the season predicted self-efficacy at the end of the season through relational identification. Group identification did not significantly mediate the identity leadership-resource appraisal relationship. Perceived social support at the start of the season predicted greater performance satisfaction at the end of the competitive season.

Conclusions: Findings provide evidence that sport coaches' engagement in identity leadership is key to forming a shared social identity, which in turn, is broadly adaptive for stress appraisals and performance satisfaction both cross sectionally and longitudinally.

Keywords: *Leadership; Social Identity; Identification; Appraisal; Performance*

57 Social identity theorizing has identified that group processes are central to cognition  
58 and behaviour (Tajfel & Turner, 1979; Turner et al., 1987). A significant part of group  
59 processes (e.g., communication, commitment to group goals) stem from the leader (Haslam et  
60 al., 2011), and this is particularly salient within competitive sport, where it is often the  
61 individual representing the group that inspires athletes to unite and mobilize their efforts (see  
62 Rees et al., 2015). Recent theorizing into the social identity approach to leadership (Haslam  
63 et al., 2011; Steffens et al., 2014a) has endeavoured to identify how such leaders influence a  
64 group and create a cohesive and unified environment. When this cohesive environment is  
65 created, members will define the self as characteristic of an in-group (e.g., a sport team),  
66 seeing themselves as not just “I” but as one of “us”. Organizational evidence has indicated  
67 that a leader who creates a shared social identity enhances follower trust (Giessner & van  
68 Knippenberg, 2008), job performance (Zhu et al., 2015) and the perceived effectiveness and  
69 charismatic tendencies of the leader (van Knippenberg & van Knippenberg, 2005).

70 Identity leadership comprises of four principles (Haslam et al., 2011; Steffens et al.,  
71 2014a), whereby leaders: (1) represent the unique qualities that define the group that they  
72 lead (i.e., they need to be “one of us”—prototypical); (2) advance and promote the core  
73 interests of the group (i.e., they need to “do it for us”—advancement); (3) bring people  
74 together by creating a shared sense of “we” and “us” (i.e., they need to craft a sense of us—  
75 entrepreneur); and (4) organise events and activities that give weight to the group's existence  
76 (i.e., they need to make us matter—impresarioship). In recent years, growing evidence in  
77 sport and exercise settings has supported the assertion that leaders who create, embody,  
78 advance, and embed a collective sense of “us” are more effective. For example, successful  
79 performance directors at the London 2012 Olympic games consistently communicated a  
80 positive, distinctive, and enduring sense of social identity in their media communication  
81 (Slater et al., 2015). Further, engagement in identity leadership (vs. not) has been associated

82 with greater intentional and behavioral mobilization of effort (Slater et al., 2018). In addition  
83 to sport coaches, team captains embodying identity leadership are perceived to have greater  
84 influence, instill team confidence, and strengthen group identification and task cohesion  
85 (Steffens et al., 2014a: Study 4). Researchers have also identified that perceived leader-  
86 entrepreneurship bolsters physical performance and effort within cycling trials (Stevens et al.,  
87 2019a). In exercise settings too, leaders that are perceived to create a sense of “us” enhance  
88 attendance and participation in sport and exercise classes (Stevens et al., 2019b).

89         The mechanisms through which this enactment of identity leadership influences  
90 variables such as performance, effort and attendance include both relational (i.e., coach) and  
91 group identification. Stevens and colleagues (2019b) found that the enactment of identity  
92 leadership has a positive effect on sport and exercise attendance through group identification.  
93 Group identification refers to the extent to which individuals feel an emotional attachment  
94 and a sense of belonging to groups of which they are part (Tajfel & Turner, 1979). Zhu and  
95 colleagues (2015) identified that leaders who strengthen follower group identification are  
96 likely to improve follower job performance too. Specifically, because leaders can influence  
97 followers to internalize a group as part of their self-concept, this becomes the basis for  
98 follower attitude, behaviour, and mobilization to engage with the group they identify with,  
99 and in turn, perform better. As an antecedent to group level identification as an influence on  
100 variables such as attendance and performance, relational identification with a leader has been  
101 found to play a role too. Sluss and Ashforth (2007, p. 15) defined relational identification as  
102 “a (partial) definition of oneself in terms of a given role-relationship-what the relationship  
103 means to the individual”. Sluss and Ashforth (2007) posited that to identify with a collective  
104 (i.e. group identification), an individual must identify with the individuals that embody and  
105 sustain the role-relationship. Simply, an individual is likely to see the collective (i.e. group  
106 identification) as an extension of the dyadic role-relationship (Sluss & Ashforth, 2007).

107 Echoing this argument, Sluss and colleagues (2012) evidence that strong relational  
108 identification with a leader can, in turn, positively influence group identification. Further,  
109 these effects are more pronounced when the leader is highly prototypical of an organisation.  
110 A heightened level of relational identification has been shown to influence follower creativity  
111 (Gu et al., 2015), perceptions of social support (White et al., 2020), and positive appraisals of  
112 motivated performance situations (i.e., important/stress-inducing events such as a competitive  
113 sport match; Slater et al., 2018). Compared to poor relational identification, perceiving a  
114 strong relational identification with a leader positively influences follower efficacy, perceived  
115 control, approach goals, and cognitive performance within competitive (non-sport) situations  
116 (Slater et al., 2018). Equally, it has also been evidenced that a sense of relational  
117 identification with a leader can be inferred from a follower's social identification with a  
118 group that unites follower and leader, in turn influencing charisma (Steffens et al., 2014b). To  
119 this tune, evidence points to both relational identification with a leader influencing group  
120 identification (Sluss et al., 2012), and group identification in turn influencing relational  
121 identification (Steffens et al., 2014b). Accordingly, both identification with a leader and  
122 group can influence psychological- and performance-related variables. To elucidate  
123 inconsistencies, researchers have not yet identified: (1) whether the full identity leadership  
124 theoretical model influences psychological resources (i.e., the four identity leadership  
125 principles); (2) whether relational and group identification are evidence based mechanisms  
126 (i.e., serial mediators) of the identity leadership-resource appraisal relationship; and (3)  
127 whether identity leadership and psychological stress variables are meaningfully related within  
128 an ecologically valid competitive sporting environment. In other words, an investigation of  
129 whether identity leadership influences psychological resources (i.e. self-efficacy, control,  
130 approach goals, and avoidance goals) through identification (relational and group) within  
131 team-based sporting environments would contribute to identity leadership theory.

132           In the current paper, the notion of psychological resources (i.e., self-efficacy, control,  
133 approach and avoidance goals) stem from the Theory of Challenge and Threat States in  
134 Athletes (TCTSA; Jones et al., 2009). Jones et al. (2009) proposed that when psychological  
135 resources meet or exceed perceived situational demands, an individual is likely to approach  
136 competition in a *challenge* state, which is adaptive for sports performance and well-being  
137 (Turner et al., 2014). In contrast, when psychological resources do not meet or exceed  
138 perceived situational demands, an individual is likely to approach competition in a *threat*  
139 state, which is maladaptive for sports performance (Jones et al., 2009; Meijen et al., 2020;  
140 Turner et al., 2014). These psychological resources are appraisals of an individual's level of  
141 skill, knowledge and ability in the order to meet or surpass the demands of the situation  
142 (Blascovich et al., 2003). Collectively, researchers have found that an athlete who is self-  
143 efficacious, perceives control over their actions and has approach goals, is more likely to be  
144 challenged by a stressful performance situation, performing better as a result (e.g., Turner et  
145 al., 2012; Turner et al., 2014). Within the TCTSA, avoidance goals (i.e. motivated towards  
146 avoiding incompetence) have also been conceptualised as a resource, though being a  
147 contributor towards threat responses and poorer performance rather than challenge responses  
148 and enhanced performance (Jones et al., 2009). Moving beyond individual resources (i.e.  
149 self-efficacy, perceived control and approach goals and avoidance goals), within the revised  
150 TCTSA (TCTSA-R: Meijen et al., 2020), social support has been conceptualised as a  
151 resource appraisal. This addition follows advances in research that has considered social  
152 support a key contributor to the stress process (Blascovich et al., 2003; Blascovich &  
153 Mendes, 2000; Dixon & Turner, 2018; Meijen et al., 2020). Empirical research has identified  
154 that social support improves sport coaches' stress related coping (Dixon & Turner, 2018).  
155 Though proposed as part of the stress process (Meijen et al., 2020), and evidence identifying  
156 the benefits of social support (Dixon & Turner, 2018), it is yet to be operationalised as a

157 resource appraisal in published research. As part of the coping process, the identity leadership  
158 perspective extends on the premise that a dyadic relationship can predict appraisals by  
159 considering the dynamicity of a group. A leader can endorse a shared social identity—by  
160 behaving in-line with the 4 principles of identity leadership—consequently, athletes develop  
161 interpersonal connections with the leader and therefore the group that they are part of  
162 (Haslam et al., 2011). With previous reviews suggesting that shared social identities can  
163 influence cognitive appraisals (Slater et al., 2016), we suggest that identity leadership can  
164 influence athletes' appraisals of a sporting event through developing connections with a  
165 leader and group. Formally, we examine the following hypotheses in Study 1:

166         H1: There will be a positive atemporal association between perceived identity  
167 leadership and self-efficacy, perceived control, approach goals, and social support, and a  
168 negative association with avoidance goals.

169         H2: The atemporal association between perceived identity leadership and resource  
170 appraisals will be mediated by relational and group identification.

171         Regarding performance, previous researchers have found mixed evidence regarding  
172 how psychological states (e.g., resource appraisals) relate to sports performance. In the  
173 TCTSA (Jones et al., 2009) and TCTSA-R (Meijen et al., 2020) it is posited that when self-  
174 efficacy, perceived control, approach focus and perceptions of support meet or exceeds  
175 perceived demands, an individual is likely to show a challenge response, in turn positively  
176 influencing performance and well-being. In-line with this thinking, researchers have  
177 evidenced that considering the appraisal of the event carries implications for performance  
178 (González-Morales, & Neves, 2015; Moore et al., 2012). Specifically, challenge-based  
179 appraisals have been found to positively influence subjective performance (Nicholls et al.,  
180 2012). That said, some researchers have found that psychological resources do not  
181 significantly relate to performance (Turner et al., 2012). To add to the inconsistency, Slater



182 and colleagues (2018) found mixed effects for both resource appraisals and cardiovascular  
183 indices (of challenge and threat) on cognitive performance. Specifically, perceiving a  
184 stronger identification with a leader was concordant with greater resource appraisals,  
185 mobilization of effort, and cognitive performance on a concentration grid activity (Study 2).  
186 Yet, no such findings were apparent on a separate cognitive task (Study 3). These mixed  
187 results urged Slater and colleagues (2018) to call for future research to investigate the  
188 relationships between identity leadership, resource appraisals and performance in more  
189 ecologically valid settings. Given that leadership success is evaluated over time, Slater and  
190 colleagues (2018) also evidenced the need for longitudinal field investigations into the  
191 influence of identity leadership.

192 In the current research, we aim to address Slater and colleagues' (2018) calls, and  
193 bring together leadership (Haslam et al., 2011) and stress theory (Meijen et al., 2020), by  
194 examining whether athletes' perceptions of their coach's identity leadership can predict  
195 resource appraisals, and performance satisfaction across an athletic season. We also  
196 investigate whether relational and group identification mediate these temporal relationships.  
197 Identifying to what extent sport coaches influence appraisal and performance holds  
198 implications for theoretical development given that leadership is not currently considered in  
199 the predominant theory (Jones et al., 2009; Meijen et al., 2020). Formally, we examine the  
200 following hypotheses in Study 2:

201 H3: There will be a positive temporal association between perceived identity  
202 leadership and self-efficacy, perceived control, approach goals and social support, and a  
203 negative association with avoidance goals.

204 H4: The temporal association between perceived identity leadership and resource  
205 appraisals will be mediated by relational and group identification.

206 H5: Identity leadership, relational identification, group identification and resource  
207 appraisals at wave one will account for a significant proportion of variance in performance  
208 satisfaction at wave two, when controlling for wave one performance satisfaction.

## 209 **Overview of studies**

210  
211 The present research uses both a cross-sectional and longitudinal design in  
212 understanding the influence of identity leadership, being an approach taken in comparable,  
213 recent research (Stevens et al., 2020). Study 1, to our knowledge, is the first to examine the  
214 atemporal mechanisms (i.e., relational and group identification) by which engagement in  
215 identity leadership by sport coaches predicts athletes' resource appraisals in the lead up to a  
216 competitive event. Extending our first study, in Study 2 we longitudinally examine  
217 associations between identity leadership, relational and group identification, resource  
218 appraisals, and sports performance (i.e. satisfaction) in two waves across an athletic season.  
219 By assessing variables longitudinally, we can identify whether perceptions of leadership  
220 influence athletes' resource appraisals through the mechanisms of relational and group  
221 identification across a season. Further, we identify the antecedents that contribute towards  
222 sports performance over a competitive season. By recognising the influence of these social  
223 processes on resource appraisals (Study 1 and 2) and performance (Study 2), we aim to  
224 advance stress (Meijen et al., 2020) and leadership (Haslam et al., 2011) theory.

## 225 **Study 1**

### 226 **Participants and Design**

227  
228 We adopted an atemporal cross-sectional design to investigate indirect effects of  
229 identity leadership on resource appraisals when approaching competition. Four hundred and  
230 twelve athletes ( $M_{\text{age}} = 23.86 \pm 5.38$ ; 299 males; white British,  $n = 383$ ) of various sporting  
231 experience ( $M_{\text{years}} = 11.29 \pm 6.46$ ) within amateur (64%) and professional sport (36%) took  
232 part in the study. Athletes competed across 34 sports, including; football ( $n = 89$ ), rugby ( $n =$

233 42), lacrosse ( $n = 21$ ), hockey ( $n = 24$ ) netball ( $n = 20$ ), cricket ( $n = 19$ ), ultimate frisbee ( $n =$   
234 12), swimming ( $n = 10$ ), dance ( $n = 4$ ), tennis ( $n = 5$ ), american football ( $n = 4$ ), athletics ( $n =$   
235 4), hurling ( $n = 2$ ), basketball ( $n = 23$ ), cheerleading ( $n = 4$ ), kickboxing ( $n = 3$ ), handball ( $n$   
236 = 4), futsal ( $n = 15$ ), volleyball ( $n = 18$ ), badminton ( $n = 5$ ), water polo ( $n = 13$ ), airsoft ( $n =$   
237 2), ice hockey ( $n = 7$ ), karate ( $n = 2$ ), gymnastics ( $n = 2$ ), softball ( $n = 8$ ), golf ( $n = 4$ ), archery  
238 ( $n = 1$ ), mixed martial arts ( $n = 1$ ), running ( $n = 20$ ), korfbal ( $n = 3$ ), curling ( $n = 2$ ),  
239 equestrian ( $n = 9$ ) and boxing ( $n = 10$ ).

## 240 **Procedure**

241       Following institutional ethical approval, convenience and snowball sampling  
242 techniques were adopted, contacting coaches via emails, word of mouth, and social media.  
243 Convenience sampling was achieved by liaising with athlete groups. Snowball sampling was  
244 achieved by encouraging athletes on completion to send details of the study to other potential  
245 athletes that may be interested. Once approved by the team coach (via convenience sampling)  
246 and athletes (via snowball sampling) a Qualtrics survey was sent to the athletes within an  
247 hour of competition. All surveys were completed on the participants' electronic device. To  
248 ensure participants filled the forms authentically, the athletes were asked questions which  
249 were reversed coded, and were asked how imminent commencement of competition was.  
250 Those who did not fill the forms authentically were removed from analyses.

## 251 **Measures**

252       **Identity leadership.** The Identity Leadership Inventory (ILI) is a 15-item questionnaire  
253 that measures the four principles of identity leadership (Steffens et al. 2014a). The ILI is a  
254 robust measure of identity leadership and has been validated across 20 countries (van Dick et  
255 al., 2018). The questionnaire includes items such as “*My coach embodies what the team*  
256 *stands for*” (Identity-prototypical,  $\alpha = .92$ ), “*My coach stands up for the team*” (Identity-  
257 advancement,  $\alpha = .88$ ), “*My coach creates a sense of cohesion within the team*” (Entrepreneur

258 of identity,  $\alpha = .93$ ), and “*My coach devises activities that bring the team together*”  
259 (Impresario of identity,  $\alpha = .91$ ). In-line with Stevens and colleagues’ (2019b), a global  
260 identity leadership measure (comprised of all 15 items) demonstrated excellent internal  
261 consistency (Cronbach’s  $\alpha = .97$ ). Though a four-factor model of the ILI has been  
262 conceptualized, Steffens and colleagues (2014a) identified that the intercorrelations between  
263 the four principles have significant overlap. Given that this is the case, and to maintain  
264 sufficient statistical power, subsequent analyses are run on global identity leadership.

265 **Group and relational identification.** A 3-item questionnaire was used to identify how  
266 strongly athletes identified with their sport team (Slater et al., 2018): “*I feel a strong*  
267 *connection with the team*”, “*I identify strongly with the team*” and “*I feel no connection with*  
268 *the team*” (reverse scored). Responses were on a Likert scale from 1 (*not at all*) to 7 (*very*  
269 *true*). This measure has been used by identity leadership researchers (e.g., Slater et al., 2018)  
270 and demonstrated good reliability in the current study ( $\alpha = .86$ ). The same three items and  
271 scale used for group identification were edited, replacing the words “*the team*” to “*my*  
272 *coach*”. These changes, in-line with Slater and colleagues’ (2018) procedure, identified an  
273 athletes’ level of relational identification with the leader. The measure showed good internal  
274 consistency ( $\alpha = .89$ ).

275 **Self-efficacy.** Derived from the self-efficacy scale using Bandura’s (2006) guidelines,  
276 two items measured how confident each athlete felt to perform well in the upcoming match  
277 (Turner et al., 2012). Specifically, the questionnaire asked; “*In the next fixture, to what extent*  
278 *do you feel confident that you can perform well?*” and “*In the next fixture, to what extent do*  
279 *you feel confident that you can fulfil your potential?*”. Participants reported on a Likert scale  
280 from 1 (*not at all*), to 5 (*very much so*). Cronbach’s alpha was acceptable ( $\alpha = .76$ ).

281 **Perceived control.** Adapted from the Academic Control Scale (Perry et al., 2001;  
282 Turner et al., 2012), a single item was used to identify perceived control over their upcoming

283 performance: “*The more effort I put into the following fixture, the better I will do?*”. Typical  
284 of research measuring resource appraisals (e.g. Turner et al., 2014), the item was recorded on  
285 a 5-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

286 **Achievement goals.** The Achievement Goal Questionnaire (AGQ: Conroy et al., 2003;  
287 Turner et al., 2012) was used to identify an athlete’s motivational disposition towards  
288 performance. This was condensed to a 4-item measure for brevity, with a single item for each  
289 subscale. The scale in this capacity has been individually validated (Conroy et al., 2003) in  
290 measuring resource appraisals (e.g., Slater et al., 2018; Turner et al., 2013). These 4 items  
291 were used to create two subscales, approach (from mastery approach and performance  
292 approach) and avoidance (from mastery avoidance and performance avoidance). Approach ( $\alpha$   
293 = .64) and avoidance ( $\alpha = .72$ ) subscales were internally consistent.

294 **Athletes’ received support.** A 22-item questionnaire identified an athlete’s perception  
295 of received support (ARSQ: Freeman et al., 2014). This measure identifies 4 dimensions of  
296 social support: emotional, esteem, informational, and tangible. All items followed from the  
297 stem “*In the build up to the upcoming fixture, to what extent has someone*”... “*cheered you*  
298 *up*” (emotional,  $\alpha = .92$ ), “*comforted you*” (esteem,  $\alpha = .94$ ), “*given you tactical advice*”  
299 (informational,  $\alpha = .93$ ), and “*helped manage your training sessions*” (tangible,  $\alpha = .95$ ).  
300 Freeman and colleagues (2014) found support for both a four-factor and a unidimensional  
301 model. Much like Freeman and colleagues, Cronbach’s alpha for all subscales combined was  
302 excellent ( $\alpha = .96$ ). Given that the intercorrelations between the four principles have  
303 significant overlap, and aiming to maintain sufficient statistical power, subsequent analyses  
304 are run on overall social support.

305 **Task importance.** A single item identified whether the upcoming fixture is important  
306 to them, from 1 (*not at all*) to 5 (*very much so*). This item is commonly used in TCTSA  
307 research, providing valid data in measuring task importance (e.g., Slater et al., 2018; Turner

308 et al., 2014). Task importance is a prerequisite of challenge and threat responses (Jones et al.,  
309 2009).

### 310 **Data analysis**

311

312 For main analyses, we identify the indirect effects of identity leadership on resource  
313 appraisals when approaching competition (Chadha et al., 2019; Cohen et al., 2003).

314 Specifically, we identify the extent to which identification with a leader and group indirectly

315 effect the relationship between perceived identity leadership and self-efficacy, perceived

316 control, approach goals, avoidance goals and received support. Given that power analyses

317 calculations are necessary for robust research (Schinke et al., 2020), Monte Carlo estimations,

318 via the MARlab application (Schoeman et al., 2017) were conducted. For path  $a^1$ ,  $a^2$  and  $d^{21}$

319 parameter estimations between, and standard deviations of identity leadership (X) and group

320 identification (M2) reported by Stevens and colleagues (2018) within sports teams were used.

321 For paths  $b^1$ ,  $b^2$  and  $c'$ , estimations are based on previous associations between identity

322 leadership parameters and resource appraisals (Slater et al., 2018). From this, small to

323 medium ( $R^2$ ;  $b^1$ ,  $b^2$  and  $c' = .28$ ) associations for paths  $b^1$ ,  $b^2$  and  $c'$  are anticipated (Slater et

324 al., 2018; Thoemmes et al., 2010). Inline with previous studies (Stevens et al, 2019b), alpha

325 was set at .05, and 5000 replications were conducted. From this, sample size estimates for the

326 mediated paths indicated at least 135 participants to achieve a power of .80 ( $a^1b^1 N = 92$ ,  $a^2b^2$

327  $N = 125$ ,  $a^1d^{21}b^2 N = 135$ ). Analyses were conducted via the lavaan package of R software (v.

328 4.0.0). Structural equational model estimates (with two serial mediators) are reported

329 alongside cluster-robust standard errors to control for non-independence of errors (i.e.

330 controlling for a suspected correlation between error terms within each sports team). Given

331 that (a) research has evidenced that relational identification informs social identification

332 (Sluss & Ashforth, 2007; Sluss et al., 2012), and (b) that relational identification can be

333 inferred as a result of group identification (Steffens et al., 2014b), both mediators (i.e.,

334 relational and group identification) are tested as mediator 1 and mediator 2. Simply, relational  
335 identification is placed in the models as mediator one, with group identification being placed  
336 as mediator two. Then, group identification is placed in the models as mediator one, with  
337 relational identification being placed as mediator two. Robust clustering enabled calculation  
338 of 95% confidence intervals (CI's) for all indirect effects. If the CI does not cross zero, a  
339 significant indirect effect has occurred (Zhao et al., 2010). Further, a good-fitting model is  
340 required to interpret paths of a structural model (Imai et al., 2010). Hence, the robust  
341 comparative fit index (i.e., the discrepancy between the data and the hypothesized model;  
342 CFI), the standardised root mean square residual (i.e., standardized difference between the  
343 observed correlation and the predicted correlation; SRMR), and the robust root mean square  
344 error of approximation (i.e., absolute measure of fit; RMSEA) were reported. Values close to  
345 .08 for the robust RMSEA and .06 for the robust SRMR are indicative of a good model fit.  
346 Equally, values close to .95 for CFI (Hu & Bentler, 1999) constitute good model fit. An  
347 intercorrelation matrix (see Table 1) identified that intercorrelations between variables  
348 (excluding the four identity leadership principles) were below the .80 cut-off (Barry &  
349 Feldman, 1985). See Figure 1 for a generic model of the serial multiple mediation with two  
350 mediators.

351 [insert Figure 1]

352 [insert Table 1]

## 353 **Results**

### 354 **Preliminary Analyses**

356 No missing data were revealed within all subscales. Following Smith's (2011)  
357 guidelines, data-points with z scores greater than two were winsorized. This is a process in  
358 which extreme values are replaced to reduce the influence of outliers on the data. Overall,  
359 5.24% of the data were winsorized. The multicollinearity assumption was met, and cook's

360 distance values were less than 1. Variance inflation factor values ( $\leq 5.432$ ) and tolerance  
361 values ( $\geq .184$ ) were acceptable (Hair et al., 1995). The independent errors assumption was  
362 satisfied, with Durbin-Watson values (1.64 – 1.937) all within the  $\geq 1$  to  $\leq 3$  range (Field,  
363 2017). Normally distributed errors, linearity and homoscedasticity assumptions were satisfied  
364 across models.

365 **Perceived Importance.** Perceived importance is a prerequisite of challenge and threat  
366 responses (Jones et al., 2009). A one-sample *t*-test indicated that athletes reported the  
367 competition to be of significant importance (i.e., significantly different to zero,  $t(412) =$   
368  $94.34, p < .001, M = 4.16 \pm .90$ ).

### 369 **Serial Mediation Model Analyses**

370 When including relational identification as mediator 1, all models were a good fit  
371 (Std. RMR  $\leq .05$ , RMSEA  $< .08$ , CFI  $> .95$ ). When group identification was included as  
372 mediator 1, all models were also a good fit (Std. RMR  $\leq .06$ , RMSEA  $< .08$ , CFI  $> .95$ ).  
373 Within the following analyses, global identity leadership forms the predictor variable (X),  
374 with *relational identification* as mediator 1 (MV), and *group identification* as mediator 2  
375 (MV). The dependent (Y) variable is the respective resource appraisal. Total effects of  
376 identity leadership on resource appraisals were significant in most models (see Table 2). The  
377 total effect for identity leadership on avoidance goals was not significant ( $\beta = .04, 95\% \text{ CI} = -$   
378  $.14, .22$ ).

379 There was a non-significant indirect effect for identity leadership on the resource  
380 appraisals of self-efficacy, control, approach goals, avoidance goals and social support  
381 through relational identification ( $\beta \leq .08, 95\% \text{ CI} = -.23, .19$ ). There was a significant indirect  
382 effect for identity leadership on self-efficacy, control and approach goals through group  
383 identification ( $\beta = .05, 95\% \text{ CI} = .01, .08$ ). No such effect was found for social support ( $\beta =$   
384  $.02, 95\% \text{ CI} = -.001, .05$ ) or avoidance goals ( $\beta = -.02, 95\% \text{ CI} = -.05, .02$ ). Furthermore,





411 efficacy, control, approach goals and social support. Against our expectations, the positive  
412 associations between identity leadership and self-efficacy, control, approach goals and social  
413 support were not significantly mediated by relational identification. Further, the negative  
414 associations between identity leadership and avoidance goals were not significantly mediated  
415 by relational identification, group identification, or in serial (H2). When group identification  
416 was added as mediator 1, and relational identification was added as mediator 2, all indirect  
417 effects were non-significant. The non-significant reversed models' evidence that, supporting  
418 Sluss and colleagues' findings (2012), a dyadic emotional connection with the leader is more  
419 likely as a result of identity leadership, which then influences group level identification and  
420 athletes' appraisals of events. Extending identity leadership and stress theory, Study 1  
421 provides initial evidence that there is a positive relationship between identity leadership and  
422 resource appraisals, which is explained by relational and therefore group identification. While  
423 this is a useful step forward, Study 1 involved cross-sectional data, and thus, in Study 2, we  
424 adopted a longitudinal design to assess these relationships at two waves at the start and the  
425 end of an athletic season. Sport performance satisfaction indicators were also included in  
426 Study 2 to assess whether social variables and an athlete's approach to competitive situations  
427 is conducive to better perceived performances (Turner et al., 2012; Turner et al., 2014).

## 428 **Study 2**

429  
430 Study 1 data indicated that there was a positive relationship between athletes'  
431 perceptions of their coach's identity leadership, and the athletes' resource appraisals, and  
432 these relationships were explained by relational and group identification. Extending  
433 leadership theory, broadly, these findings show that those who perceive greater self-efficacy,  
434 control, approach goals and social support perceive greater emotional connections with their  
435 coach and team as a result of sport coaches' enactment of identity leadership principles.  
436 Advancing Study 1, and to contribute theoretically to social identity and challenge and threat

437 approaches, in Study 2 we examined the relationships between identity leadership and  
438 resource appraisals (with relational and group identification as mediators) over time. Given  
439 an athlete's appraisal of a competitive event has implications for performance (González-  
440 Morales & Neves, 2015), in Study 2, we additionally examined whether identity leadership,  
441 identification (relational and group), and resource appraisals predicted performance  
442 satisfaction across an athletic season.

## 443 **Method**

### 444 **Participants and Design**

445  
446 A two-wave longitudinal design was adopted to investigate serial mediation models.  
447 One-hundred and thirty-six athletes ( $M_{\text{age}} = 24.73 \pm 5.39$ ; 118 males) of various sporting  
448 experience ( $M_{\text{years}} = 12.82 \pm 6.45$ ) within amateur (43%) and professional sport (57%) took  
449 part. The sample included athletes who participated in football ( $n = 81$ ), rugby ( $n = 37$ ) and  
450 netball ( $n = 18$ ). Comparable with similar research (Stevens et al., 2020), a separate sample of  
451 136 team sport athletes is assessed over time (whilst study 1 used a broader sample of athletes  
452 [individual and team sports]) in order to understand the effects of identity leadership in a  
453 targeted, under-researched population (within identity leadership research).

### 454 **Measures**

455 We used the same 7 questionnaires as in Study 1, prior to the competitive fixture. In  
456 addition, after the fixture (within an hour), we measured perceived performance satisfaction  
457 (Biddle, Hanrahan, & Sellars, 2001), with a single item: "*Please indicate how satisfied you*  
458 *are with your performance in the match you have just participated in?*". This is a previously  
459 validated questionnaire anchored at 1 (*totally dissatisfied*) to 10 (*totally satisfied*). Cronbach's  
460 alpha on self-efficacy ( $\alpha = .54$ ) at wave 2 was questionable. The results from these variables  
461 should be interpreted with caution. All other subscales on all items across wave 1 and 2 were  
462 at least acceptable ( $\alpha \geq .79$ ).

463 **Procedure**

464           Following institutional ethical approval, convenience and snowball sampling  
465 techniques were adopted, contacting coaches via email, word of mouth, and social media.  
466 Once approved by the team's coach (via convenience sampling) and athletes (via snowball  
467 sampling), paper surveys were given to the athletes within an hour of competition. Wave 1  
468 surveys were handed out within the first two weeks of the season. On the first page it was  
469 noted that this was a two-wave study, and that the procedure will be repeated towards the end  
470 of the season. If consent was not granted, athletes were thanked for their consideration.  
471 Athletes then completed demographic information and the 7 questionnaires. After the  
472 competition fixture, within an hour of completion, the players were asked to rate their  
473 performance. Wave 2, which was an exact replication of the above, was completed in the  
474 final two weeks of the season (8 months later).

475 **Data Analysis**

476           Main analyses involved two stages. First, serial mediation analyses (Cohen et al.,  
477 2003) were conducted. We tested whether identification (relational and group) at wave 2  
478 mediated the relationship between perceived identity leadership at wave 1 and resource  
479 appraisals at wave 2. Like Study 1, initially, relational identification at wave 2 formed  
480 mediator 1, and group identification at wave 2 formed mediator 2. Then, mediators were  
481 reversed, placing group identification at wave two as mediator 1, and relational identification  
482 at wave 2 as mediator 2. Typical when assessing longitudinal autoregressive models, wave 1  
483 repeated variables were used as controls (Adachi & Willoughby, 2015). As with Study 1, for  
484 indirect effects, analyses were conducted via the lavaan package of R software (v. 4.0.0).  
485 Structural equation model estimates (with two serial mediators) are reported using the  
486 Satorra-Bentler correction (see Chou et al., 1991) alongside cluster-robust standard errors to  
487 control for non-independence of errors (i.e. controlling for a suspected correlation between

488 error terms within each sports team) and multivariate non-normality. Robust clustering was  
489 enabled, with statistical significance of indirect effects being determined using 95% CI's  
490 (Zhao et al., 2010). Retaining the power analyses used for study 1<sup>1</sup>, sample size estimates for  
491 the mediated paths indicated at least 135 participants to achieve a power of .80 across all  
492 paths ( $a^1b^1 N = 92$ ,  $a^2b^2 N = 125$ ,  $a^1d^2b^2 N = 135$ ). Further, mediational research assessing  
493 the longitudinal associations between identification (Stevens et al., 2019b; Wakefield, Bowe,  
494 Kellezi, Butcher, & Groeger, 2020) and dependent variables has used similar participant  
495 numbers to the present study ( $N = 186$ , Stevens et al., 2018;  $N = 122$ , Wakefield et al., 2020).  
496 Second, typical of challenge and threat research within ecologically valid settings  
497 (Blascovich et al., 2004; Turner et al., 2012), hierarchical multiple regression analyses (via R  
498 software 4.0.0) were conducted to identify whether facets of social factors and resource  
499 appraisals at wave one predicted wave 2 performance satisfaction.

## 500 Results

### 501 Preliminary Analyses

502 Missing values analyses revealed that all missing data at both time points were  
503 missing completely at random ( $\chi^2 \geq .322$ ,  $p \geq .149$ ), with .1% of overall data responses being  
504 missing. From this, multiple imputations were conducted, and following Smith's (2011)  
505 guidelines, data-points with  $z$  scores greater than two were winsorized. Across all regression  
506 models, Cook's distance values were less than 1, the multicollinearity assumption was met  
507 and variance inflation factor ( $\leq 1.094$ ) and tolerance values ( $\geq .914$ ) were acceptable (Hair et  
508 al., 1995). Independent errors (Durbin-Watson, 1.767 – 2.308), normally distributed errors,  
509 linearity, and homoscedasticity assumptions were satisfied across models. The assumption of  
510 multivariate normality (Mardia Skewness  $< .05$ ) was violated across all endogenous

---

<sup>1</sup> The monte carlo power estimations using the current software packages do not account for control variables as part of power analyses (Schoeman, Boulton, & Short, 2017). The present power calculation should be considered an approximate estimate. That said, these results ensure confidence that our final sample ( $N = 136$ ) for study 2 was sufficient for mediation analyses.

511 variables. In dealing with this, the Satorra-Bentler model was run, and robust-cluster standard  
512 errors are reported (see Chou et al., 1991). Intercorrelation matrices for wave 1 and wave 2  
513 can be seen in Table 3.

514 **Perceived Importance.** Two one-sample *t*-tests indicated that athletes (at both waves)  
515 reported the competition to be of significant importance (i.e., significantly different to zero:  
516 wave 1,  $t(145) = 48.69, p < .001, M = 3.86 \pm .96$ ; wave 2,  $t(135) = 57.35, p < .001, M = 4.01$   
517  $\pm .82$ ). A paired samples *t*-test identified that there was a non-significant increase in  
518 perceived importance from wave one to wave two,  $t(135) = -1.55, p = .123$ .

519 [insert Table 3]

### 520 **Serial Mediation Model Analyses**

521 When including relational identification as mediator 1, self-efficacy, approach goals,  
522 avoidance goals and social support models were an acceptable fit (Std. RMR  $\leq .06$ , Robust  
523 RMSEA  $< .08$ , Robust CFI  $> .90$ ). With mediators in this order, acceptable fit was not  
524 identified within the control model (Std. RMR =  $.06$ , Robust RMSEA =  $.13$ , Robust CFI =  
525  $.87$ ). When group identification was included as mediator 1, the self-efficacy, control,  
526 approach, avoidance and social support [models were an acceptable fit (Std. RMR  $\leq .06$ ,  
527 Robust RMSEA  $< .08$ , Robust CFI  $> .90$ ). Within the following analyses, perceived identity  
528 leadership at wave 1 forms the predictor variable (*X*), with *relational identification* at wave  
529 two forming M1. *Group identification* at wave two formed M2 and respective resource  
530 appraisal at wave two formed the Y variable. Lastly, all wave one variables were used as  
531 covariates to control for stability effects. Total effects of identity leadership at wave one on  
532 self-efficacy at wave two was significant ( $p = .05$ ). All remaining total effects of identity  
533 leadership at wave one on resource appraisals at wave two were non-significant. Complete  
534 mediation models can be seen in the supplementary file.

535           **Self-efficacy and control.** There was a significant indirect effect for identity  
536 leadership at wave 1 on self-efficacy and control at wave 2 through relational identification at  
537 wave 2 ( $\beta \geq .10$ , 95% CI = .02, .20). There was a non-significant indirect effect for identity  
538 leadership at wave 1 on self-efficacy and control at wave 2 through group identification at  
539 wave 2 ( $\beta < .001$ , 95% CI = -.04, .03). Furthermore, there was a non-significant indirect  
540 effect for identity leadership at wave 1 on self-efficacy and control at wave 2 through both  
541 relational and group identification at wave 2 ( $\beta \leq .01$ , 95% CI = -.02, .04). Further, there was  
542 a significant positive direct effect for identity leadership at wave 1 on self-efficacy at wave 2  
543 ( $\beta = .10$ ,  $p = .03$ ).

544           **Approach goals, avoidance goals and social support.** There was a significant  
545 indirect effect for identity leadership at wave 1 on social support at wave 2 through relational  
546 identification at wave 2 ( $\beta = .06$ , 95% CI = .004, .12). The association between identity  
547 leadership at wave 1 and approach goals, avoidance goals and social support at wave two was  
548 not significantly mediated by group identification at wave two ( $\beta \leq .04$ , 95% CI = -.03, .09).  
549 There was a significant indirect effect for identity leadership at wave 1 on approach goals at  
550 wave 2 through both relational and group identification at wave 2 ( $\beta = .07$ , 95% CI = .02,  
551 .13). Both relational and group identification at wave 2 did not significantly mediate the  
552 relationship between identity leadership at wave 1 and social support at wave two ( $\beta = -.01$ ,  
553 95% CI = -.05, .02). Further, there was a non-significant direct effect for identity leadership  
554 at wave 1 on approach goals, avoidance goals and social support at wave 2 ( $\beta \leq .10$ ,  $p > .05$ ;  
555 see supplementary file).

556           When analyses were run with group identification at wave two placed before  
557 relational identification at wave two, all indirect effects through *both* mediators were non-  
558 significant (see supplementary file). Equally, when group identification at wave two was  
559 included as mediator 1, and relational identification at wave two as mediator 2, there was a

560 significant direct effect of identity leadership at wave one on self-efficacy ( $\beta = .10, p = .03$ ),  
561 and this was mediated by relational identification at wave two ( $\beta = .12, 95\% CI = .06, .18$ ).  
562 In assessing bi-directional relationships (e.g. self-efficacy at wave one predicting identity  
563 leadership at time 2), no significant associations were found. A summary of standardised  
564 coefficients for total, direct and indirect effects of identity leadership at wave one on resource  
565 appraisals at wave two can be found in Table 4. Further, all mediation models in Study 2  
566 (with mediators in both directions) can be found in the supplementary file.

567 [insert Table 4]

### 568 **Performance Satisfaction**

569 Within hierarchical multiple regression models, wave one performance satisfaction  
570 was added at Step one, followed by identity leadership (Step 2), relational identification (Step  
571 3), group identification (Step 4), and all resource appraisals (Step 5). For wave one  
572 performance satisfaction (Step 1:  $R^2 = .002, p > .05$ ), identity leadership (Step 2:  
573  $R^2 = .01, p > .05$ ), relational identification (Step 3:  $R^2 = .02, p > .05$ ) and group identification  
574 (Step 4:  $R^2 = .03, p > .05$ ), there was a non-significant proportion of variance accounted for  
575 after each addition. For resource appraisals, a significant proportion of variance was  
576 accounted for by the addition of step 5 (Step 5:  $R^2 = .08, p < .05$ ). Specifically, wave one  
577 social support was significantly associated with performance satisfaction at wave two  
578 ( $\beta = .40, p = .019$ ).

### 579 **Discussion**

580 Overall, Study 2 indicated mixed support for our hypotheses. In-line with  
581 expectations, identity leadership at wave 1 was positively associated with self-efficacy at  
582 wave 2 (H3), and this was mediated by relational (but not group, in simple or serial  
583 mediation) identification at wave 2 (H4). Contrary to our expectations, identity leadership  
584 was not associated with perceived control, approach goals or social support temporally (H3).



585 When group identification was added as the M1 variable, and relational identification as the  
586 M2 variable, all indirect effects (i.e. through both group and relational identification) were  
587 non-significant. Further, when assessing bi-directional relationships (e.g. self-efficacy at time  
588 one predicting identity leadership at time two), all models were non-significant. With this  
589 finding, the present research supports that perceptions of leadership serve as an antecedent to  
590 the outcome, being athletes' resource appraisals. From this it can be argued that an  
591 individual's appraisal of an event is based on feedback received from an individual's  
592 subjective reality, inclusive of the leader (see Slater et al., 2018). In-line with our hypotheses,  
593 perceived social support at the start of the season predicted greater performance satisfaction  
594 at the end of the season (H5), but contrary to expectations, no other social factors or resource  
595 appraisals did. Collectively, our findings evidence that sport coaches who are perceived to  
596 display identity leadership at the start of the season are likely to positively influence athletes'  
597 self-efficacy on approach to sporting competition at the end of the season. Further, the  
598 association between identity leadership and self-efficacy is explained through a greater  
599 relational connection with the coach.

## 600 **General Discussion**

601 The purpose of this programme of research was to examine the influence of athletes'  
602 perceptions of sport coach's identity leadership on relational and group identification,  
603 resource appraisals, and athletic performance. In sum, findings provided mixed support for  
604 our hypotheses. In-line with H1, in Study 1, perceptions of coach identity leadership were  
605 positively associated with athletes' self-efficacy, perceived control, approach goals, and  
606 social support. In support of H2, relational and group identification (in this order) mediated  
607 the positive association between identity leadership and self-efficacy, control, approach goals  
608 and social support. Further, alone, group identification mediated the positive relationship  
609 between identity leadership and self-efficacy, control and approach goals. In contrast to H2,

610 alone, relational identification did not significantly mediate the relationship between identity  
611 leadership and all resource appraisals. Lastly, group identification did not significantly  
612 mediate the positive relationship between identity leadership and social support. Overall,  
613 identity leadership did not negatively associate with avoidance goals, nor was the relationship  
614 mediated by relational nor group identification. In Study 2, supporting H3, perceptions of  
615 coach's identity leadership at wave 1 were positively associated with athletes' self-efficacy  
616 (but not control, approach goals, avoidance goals and social support) at wave 2. When  
617 relational identification at wave 2 was included as a mediator, there was a positive  
618 association between identity leadership at wave 1 and self-efficacy at wave 2 (H4). In  
619 contrast to H4, in serial mediation models, relational and group identification at wave 2 did  
620 not explain the relationship between identity leadership at wave 1 and resource appraisals at  
621 wave 2. Further, when mediators were reversed (i.e., group identification placed before  
622 relational identification), no significant indirect effects were identified. Thus, over time, a  
623 strong relational identification with a leader did not, in turn, positively influence group  
624 identification (Sluss & Ashforth, 2012), nor was a sense of relational identification inferred  
625 from a follower's group identification (Steffens et al., 2014b). Regarding performance  
626 satisfaction, supporting H5, perceptions of social support at the start of the season predicted  
627 greater performance satisfaction at the end of the season. No other social factors or resource  
628 appraisals at the start of the season predicted performance satisfaction at the end of the  
629 season.

### 630 **Theoretical Contributions**

631 Overall, our two studies contribute to theory in three noteworthy ways. First,  
632 extending leadership theory, across Study 1 and 2, broadly, we find evidence that perceptions  
633 of coaches' identity leadership positively influenced athletes' resource appraisals towards  
634 motivated performance situations as a result of a sense of connection with their coach and

635 sport team. One reason for this could be due to a sport coaches role in influencing athletes to  
636 internalize their coach-athlete relationship as part of their self-concept (i.e., relational  
637 identification), and this may have been the basis for athletes' attitude and behaviour,  
638 mobilizing athletes to engage with the group they identify with, in turn appraising the  
639 competition more adaptively (i.e., greater resources appraisals). Slater and colleagues (2018)  
640 found similar results in that relational identification with a leader aided intentional  
641 mobilization and resource appraisals. Extending Slater and colleagues' (2018) findings, our  
642 research suggests that relational and group identification serve as mechanisms through which  
643 identity leadership influences appraisals within an ecologically valid setting.

644         Second, Study 2 advances identity leadership theory by providing initial evidence  
645 pointing to the temporal mechanisms behind sport team dynamics and athletes' stress  
646 appraisals. We found that perceived identity leadership played a part in creating a strong  
647 relationship between athlete and coach over time, in turn, predicting greater perceptions of  
648 self-efficacy. That said, similar to Slater et al. (2018), we present inconsistent findings  
649 regarding resource appraisals. A potential reason for this may be the meaning behind the  
650 dyadic relationship (i.e., shared identity content; Slater, Coffee, Barker, Haslam, & Steffens,  
651 2019), not explored in ours, nor Slater et al's (2018) study. The belief that a leader and  
652 follower have similar ideas about the meaning of the group, such as being results-focused,  
653 influences follower mobilization of efforts toward a performance task. As the leader and  
654 followers share collective meaning (e.g., to approach tasks with confidence), dyadic  
655 identification is likely to be endorsed, and thus psychological resources are likely to be  
656 bolstered alongside enhanced mobilization (Slater et al., 2019). To this end, there is scope for  
657 future research to identify whether shared identity content serves as the mechanism through  
658 which resource appraisals are improved, and performance is enhanced.

659 Inconsistent with our first study, in Study 2, we found that identity leadership did not  
660 contribute to creating a strong relationship between athlete and group over time, nor did  
661 group identification predict elevated appraisals. Because perceived identity leadership  
662 influenced relational identification, to then influence group identification in the serial  
663 mediation models (Study 1), our evidence suggests that the emotional connection between  
664 leader and athlete that was formed may supersede group identification, as per Sluss and  
665 colleagues' (2012) propositions. In other words, self-efficacy may form as a result of  
666 relational identification rather than group identification. In sum, evidence from Study 2  
667 indicates that it is pivotal within competitive sport that sport coaches make every effort to  
668 display identity leadership consistently across athletic seasons in order to retain and develop  
669 relational identification, which in turn enhances perceptions of efficacy in their athletes. It  
670 may be so that a leader's influence is bolstered as a result of a dyadic connection, (see Slater  
671 et al., 2018) thus persuasion to engage in activities may be endorsed by a follower, improving  
672 efficacy over time (Maddux, & Gosselin, 2003).

673 Third, broadly, the findings from Study 1 and 2, reflecting two independent samples of  
674 athletes, show that identity leadership and identification (with a leader and group) influences  
675 athletes' self-efficacy, perceived control, approach goals, and social support, indicating  
676 support for the propositions within the TCTSA-R (Meijen et al., 2020). Our research points to  
677 social antecedents of stress appraisals, such as perceptions of leadership. Particularly, we  
678 evidence that identity leadership may serve as a dispositional factor within the stress process,  
679 influencing the transaction between the environment and the stress response. It is important  
680 for an athlete to perceive that support is available from those who they share a strong  
681 connection with (i.e., a leader or group) to in turn use opportunities for support in anticipating  
682 motivated performance situations. This is particularly noteworthy given that leadership and  
683 other social factors (e.g., number of positive group memberships) have been found to be vital

684 in other approaches to health/stress (e.g., the social cure; Haslam et al., 2018). Thus, our  
685 findings support the notion of social resources, in that resources (friends; memberships in  
686 clubs and organizations) have been found to attenuate stressful situations (Billings & Moos,  
687 1981). In turn, these social resources predict greater overall performances as a result of  
688 collective supportive climates (Peñalver et al., 2019), which are products of leadership (Zhu  
689 et al., 2015). To this tune, our findings add to initial conceptualizations (Slater et al., 2016)  
690 and evidence (Slater et al., 2018) that identity-based leadership serves as a significant  
691 antecedent to resource appraisals on approach to motivated performance situations (Meijen et  
692 al., 2020). Specifically, athletes believing that their coach shows identity leadership  
693 behaviours is likely to be associated with greater self-efficacy, perceived control, approach  
694 goals and perceived support cross sectionally (Study 1), and self-efficacy over time (Study 2).

695 As evidenced, some inconsistencies were found across our studies. In Study 1, group  
696 identification, cross-sectionally, influenced the process through which perceived coach  
697 identity leadership influenced athlete resource appraisals. Further, we found that perceptions  
698 of identity leadership positively influenced relational identification, in turn, positively  
699 influencing group identification and resource appraisals (excluding avoidance). However, in  
700 Study 2, longitudinally, only relational identification (not group identification) proved  
701 influential in the process through which perceptions of identity leadership at the start of the  
702 season influenced resource appraisals at the end of the season (i.e., only self-efficacy).  
703 Because our findings point to a relationship between perceptions of identity leadership and  
704 psychological appraisals over time, practically, identity leadership interventions such as the  
705 3R's (Haslam et al., 2011) may prove pivotal in improving athletes' competitive appraisals  
706 and performance satisfaction. By this, leaders should aim to understand the social identities  
707 within a group (i.e., *reflect*), act in line with group expectations and norms (i.e., *represent*),  
708 and help set structures to achieve group goals (i.e., *realize*). In doing this, identification (i.e.

709 relational and group) is likely to be enhanced (Haslam et al., 2011), and competitive  
710 appraisals and performance satisfaction improved. In response to Slater et al. (2018) and  
711 Nicholls et al.'s (2012) calls, our data adds to previous findings, identifying that there are  
712 psychological consequences of identity leadership (Study 1) over time (Study 2), and that  
713 performance satisfaction can be influenced by social support across an athletic season (Study  
714 2). Indeed, practically speaking, given the positive influence of social support at wave 1  
715 predicting performance satisfaction at wave 2, we recommend that at the start of athletic  
716 seasons, coaches and sport psychologists should look to develop social support interventions  
717 (e.g., proactively during pre-season).

### 718 **Limitations and Future Research Directions**

719 Our studies are not without limitations. First, in both studies, we did not measure  
720 athletes' appraisals of the event in the few seconds immediately before the event started due  
721 to ethical reasons (Tenenbaum et al., 2002). Evidence has indicated that appraisals are fluid  
722 (Blascovich & Mendes, 2000; Chadha et al., 2019), and thus, it is plausible that the appraisals  
723 athletes reported an hour before the competition changed in the imminent seconds before the  
724 start. Though we know reappraisal happens in the moments before competition, we captured  
725 data as close to competition as feasible. Second, we based our research on stress theory  
726 (Jones et al., 2009), but the polychotomous propositions of the TCTSA-R were not included  
727 in this research (Meijen et al., 2020). By this without measuring Lazarusian appraisals of  
728 motivational relevance (i.e., the intensity of the competitive stress response) and goal  
729 congruence (i.e., the pursuit of goals that align with goals that the group intend to achieve;  
730 Lazarus & Folkman, 1984), it was not possible to test the TCTSA-R in this study (Meijen et  
731 al., 2020). There is merit in future studies identifying whether physiological reactivity to  
732 stressful situations can be influenced by identity leadership and identification variables over  
733 time, as well as researchers developing measurement tools that align with the TCTSA-R

734 (Meijen et al., 2020). Speaking of measurement, there has been evidence that single item  
735 measures (i.e. AGQ; Conroy et al., 2003; Turner et al., 2012), compared to full-length scales,  
736 may not be sufficient indicators of a construct, reducing reliability (Hays et al., 2012).  
737 Although this is the case, the used scales have proven valid in measuring resource appraisals  
738 (Slater et al., 2018; Turner et al., 2013). Although study 2 measured intraindividual  
739 associations over time, there was a gender imbalance, and thus it may be beneficial for future  
740 research to incorporate stratified sampling techniques ensure a gender balance (e.g. Fransen  
741 et al., 2015). Those who took part in the study Finally, regarding performance, other pertinent  
742 markers were not considered. Future research may benefit in taking a holistic perspective  
743 when measuring performance, such as individual-objective (i.e., km ran, percentage pass  
744 completion) parameters.

#### 745 **Conclusion**

746 In the present research we examined whether the perceptions of sport coach's identity  
747 leadership predicted athletes' resource appraisals cross-sectionally (Study 1) and  
748 longitudinally (Study 2), and whether these relationships were explained by relational and  
749 group identification. We also explored the influence of identity leadership on performance  
750 satisfaction across a season (Study 2). Broadly, we find evidence that perceptions of identity  
751 leadership influenced athletes' self-efficacy, perceived control, approach goals and perceived  
752 support, through identification with both the coach and the team (Study 1). In addition, we  
753 identified that perceptions of identity leadership at the start of a season was associated with  
754 athletes' self-efficacy at the end of the season through relational (but not group) identification  
755 (Study 2). Additionally, receiving social support at the start of the season positively predicted  
756 increased performance satisfaction at the end of the season. These findings stimulate the need  
757 for sport coaches to understand both: (1) the importance of displaying identity leadership  
758 behaviours for their athletes' resource appraisals and performance satisfaction, and 2) how

759 relational and group identification may be key mechanisms through which resource  
760 appraisals are optimized.

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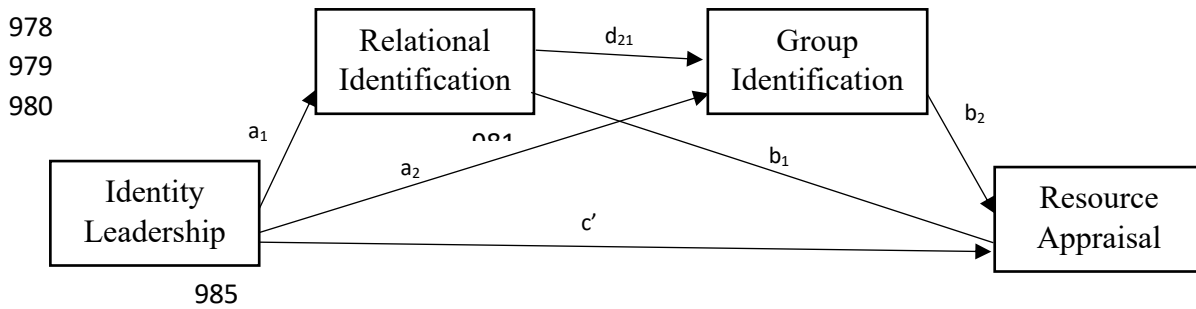
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976 **Figure 1**

977 Serial multiple mediation model with two mediators within study 1.



986 Notes: X—Independent variable; Y—Dependent Variable; M1, M2—Mediators. a1, a2, b1,  
 987 b2, d21, c'—Regression coefficients.

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**Table 1**

*Study 1 Scale Reliabilities, Descriptive Statistics and Inter-correlations*

	Mean +/- SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Prototypical	5.08 +/- 1.32	.92											
2. Advancement	5.16 +/- 1.27	.87*	.88										
3. Entrepreneurship	4.71 +/- 1.53	.79*	.74*	.93									
4. Impresarioship	4.69 +/- 1.53	.71*	.71*	.83*	.91								
5. Global Identity Leadership	4.92 +/- 1.27	.91*	.90*	.93*	.90*	.97							
6. Relational Identification	5.16 +/- 1.45	.76*	.72*	.73*	.67*	.79*	.89						
7. Group Identification	5.61 +/- 1.09	.50*	.48*	.49*	.46*	.53*	.56*	.86					
8. Self-efficacy	3.95 +/- .86	.45*	.44*	.41*	.40*	.47*	.45*	.48*	.76				
9. Control	4.16 +/- .79	.44*	.42*	.40*	.40*	.46*	.41*	.47*	.59*	---			
10. Approach	5.62 +/- 1.12	.41*	.41*	.31*	.30*	.39*	.37*	.37*	.50*	.42*	---		
11. Avoidance	4.45 +/- 1.56	.08	.11*	.04	.07	.08	.03	-.01	.02	-.01	.42*	---	
12. Overall Support	4.13 +/- 1.26	.45*	.44*	.51*	.47*	.51*	.46*	.36*	.34*	.39*	.26*	.13*	.96

Note:  $p \leq .05^{**}$ ,  $p \leq .01^*$

**Table 2**

*Summary of Total, Direct and Indirect Effects Study 1*

	Self-Efficacy	Control	Approach	Avoidance	Social Support
Total Effect	$\beta = .21^*$	$\beta = .23^*$	$\beta = .24^*$	$\beta = .04$	$\beta = .41^*$
Direct Effect	$\beta = .15^*$	$\beta = .18^*$	$\beta = .18^*$	$\beta = .06$	$\beta = .38^*$
Relational Identification	$\beta = .06$	$\beta = .003$	$\beta = .06$	$\beta = -.04$	$\beta = .08$
Group Identification	$\beta = .05^*$	$\beta = .05^*$	$\beta = .05^*$	$\beta = -.02$	$\beta = .02$
Relational*Group Identification	$\beta = .06^*$	$\beta = .06^*$	$\beta = .05^*$	$\beta = -.02$	$\beta = .03^*$
Group*Relational Identification	$\beta = .008$	$\beta \leq .001$	$\beta = .008$	$\beta = -.005$	$\beta = .01$

*Note:*  $p \leq .05^*$ , Relational\*Group Identification = Relational identification as mediator 1, and group identification as mediator 2. Group\*Relational Identification = Group identification as mediator 1, and relational identification as mediator 2.

Running head: IDENTITY LEADERSHIP, APPRAISALS, AND PERFORMANCE

**Table 3**

*Study 2 Pearson's correlations coefficients (r) between the variables across timepoints*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Prototypical	-	.86*	.80*	.76*	.93*	.70*	.39*	.58*	.44*	.50*	18**	.48*	.46*	.39*	.32*	.45*	.27*	.10
2. Advancement	.88*	-	.79*	.74*	.93*	.69*	.40*	.65*	.40*	.52*	.17**	.48*	.46*	.34*	.32*	.44*	.23*	.08
3. Entrepreneur	.74*	.66*	-	.84*	.93*	.68*	.39*	.65*	.46*	.48*	.17**	.47*	.46*	.40*	.38*	.47*	.24*	-.00
4. Embedder	.62*	.63*	.79*	-	.89*	.61*	.34*	.60*	.41*	.46*	.21**	.46*	.43*	.38*	.36*	.45*	.29*	.04
5. Global identity leadership	.92*	.89*	.90*	.84*	-	.74*	.43*	.68*	.46*	.54*	.19**	.51*	.49*	.41*	.38*	.49*	.28*	.06
6. Relational Identification	.84*	.77*	.78*	.72*	.88*	-	.64*	.57*	.45*	.48*	-.02	.37*	.35*	.25*	.20**	.32*	.27*	.11
7. Group Identification	.42*	.43*	.46*	.44*	.51*	.54*	-	.41*	.31*	.47*	-.14	.23*	.18*	.03	.01	.12	.16	.16
8. Self-efficacy	.47*	.43*	.43*	.40*	.50*	.43*	.45*	-	.51*	.53*	.20**	.40*	.38*	.26*	.18**	.32*	.27*	.16
9. Control	.51*	.41*	.34*	.31*	.46*	.46*	.43*	.65*	-	.53*	.07	.40*	.39*	.20**	.16	.30*	.19**	.07
10. Approach	.46*	.45*	.36*	.33*	.46*	.36*	.43*	.54*	.58*	-	.23*	.43*	.36*	.28*	.26*	.35*	.21**	.19**
11. Avoidance	.36*	.30*	.38*	.28*	.38*	.26*	.29*	.40*	.40*	.71*	-	.21**	.08	.21**	.22*	.19**	.15	.06
12. Emotional	.46*	.36*	.46*	.40*	.49*	.47*	.41*	.49*	.56*	.53*	.46*	-	.87*	.74*	.62*	.87*	.24*	.11
13. Esteem	.42*	.32*	.51*	.42*	.48*	.44*	.4*	.47*	.51*	.47*	.47*	.87*	-	.77*	.68*	.91*	.25*	.09
14. Informational	.31*	.29*	.44*	.36*	.40*	.38*	.27*	.25*	.35*	.22*	.34*	.62*	.66*	-	.72*	.90*	.24*	.08
15. Tangible	.25*	.24*	.36*	.28*	.33*	.31*	.16	.17*	.23*	.04	.22**	.43*	.47*	.74*	-	.87*	.11	.02
16. Overall Support	.42*	.35*	.52*	.43*	.49*	.47*	.36*	.40*	.47*	.34*	.42*	.83*	.86*	.90*	.81*	-	.24*	.06
17. Performance Satisfaction	.24*	.21*	.13	.20**	.23*	.30*	.18**	.19**	.21**	.26*	.16	.21**	.20**	.18**	.05	.18**	-	.03

*Note:* Wave 1 correlations are below the diagonal, and wave 2 correlations are above the diagonal,  $p \leq .05^{**}$ ,  $p < .01^*$

**Table 4**

*Summary of Total, Direct and Indirect Effects Study 2*

	Self-Efficacy	Control	Approach	Avoidance	Social Support
Total Effect	$\beta = .11^*$	$\beta = -.001$	$\beta = .06$	$\beta = .07$	$\beta = .02$
Direct Effect	$\beta = .10^*$	$\beta = -.002$	$\beta = -.01$	$\beta = .10$	$\beta = .03$
Relational Identification	$\beta = .10^*$	$\beta = .11^*$	$\beta = .03$	$\beta = .03$	$\beta = .06^*$
Group Identification	$\beta = -.01$	$\beta = -.001$	$\beta = -.08$	$\beta = .04$	$\beta = .02$
Relational*Group Identification	$\beta = .01$	$\beta = .001$	$\beta = .07^*$	$\beta = -.03$	$\beta = -.01$
Group*Relational Identification	$\beta = -.02$	$\beta = -.02$	$\beta = -.004$	$\beta = -.004$	$\beta = -.01$

*Note:*  $p \leq .05^*$ , Relational\*Group Identification = Relational identification at wave two as mediator 1, and group identification at wave two as mediator 2. Group\*Relational Identification = Group identification at wave two as mediator 1, and relational identification at wave two as mediator 2.