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Light Quartet Traits and Coaching Behaviors Among Sport Coaches: Examining the Indirect Effect of Positive Emotions

Research Article

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Abstract: Coaches' personality traits are associated with their behaviors, yet the emotional processes underlying these associations remain underexplored. Grounded in the Light Quartet framework, this study examined the associations among hope, optimism, perseverance, resilience, positive emotions, and coaching behaviors, with particular attention to the statistical mediating role of positive emotions. A cross-sectional design was employed involving 570 sport coaches (M = 38.93, SD = 7.49) from Southern Philippines. Standardized self-report measures assessed the four Light Quartet traits, positive emotions, and five dimensions of coaching behavior: training and instruction (TI), democratic behavior (DB), autocratic behavior (AB), social support (SS), and positive feedback (PF). Mediation analyses were conducted using PROCESS with 10,000 bootstrap resamples. The Light Quartet traits were positively associated with positive emotions. Significant indirect associations through positive emotions were observed between the Light Quartet traits and TI, DB, AB, and PF, whereas indirect associations with SS were not supported. These findings indicate that positive emotions may help explain the statistical associations between positive personality characteristics and specific dimensions of coaching behavior. Given the cross-sectional and self-report design, the findings are interpreted as statistical indirect associations and do not establish temporal or causal relationships. The study extends research on the Light Quartet by examining its associations with coaches' emotional experiences and leadership behaviors.

Keywords: *Coaching behavior • Coaching leadership • Light Quartet • Positive emotions • Sport coaches*

1. Introduction

Coaches play a crucial role in athletes' development, with their behaviors significantly influencing performance, behavior, and psychological well-being (Carlsson & Lundqvist, 2016; Zhou, 2022; Iqbal et al., 2024). This has led to growing interest in understanding the factors that shape coaching behaviors, among which personality traits are commonly identified as key determinants. As relatively stable dispositions, personality traits influence how coaches think, feel, and behave (Havadar et al., 2024; Pestano, 2021). While prior research highlights their importance in shaping coaching behaviors (Garner et al., 2022; Nicolau et al., 2023), the underlying mechanisms remain unclear. One potential explanatory pathway is sports-related emotions, which have been widely recognized as powerful drivers of behavior (Didymus & Potts 2025; Moll & Cherrington (2024)). However, the role of positive emotions in linking personality traits to coaching behaviors has received limited attention. Thus, this study examines the mediating role of coaches' positive emotions in the relationship between personality traits – particularly the Light Quartet traits – and coaching behaviors.

1.1 Light Quartet Traits and Their Influence on Coaching Behaviors

The Light Quartet, comprising hope, optimism, perseverance, and resilience, was conceptualized within the sport-

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coaching literature as a constellation of positive personality characteristics relevant to how coaches navigate professional demands and adversity (Laborde et al., 2017). In their work with sport coaches, Laborde et al. (2017) demonstrated that these four dispositions were meaningfully associated with approaches to coping, establishing an important basis for examining their broader relevance to coaching processes. Subsequent research has similarly emphasized the role of positive personality characteristics in coaches' psychological functioning and behavioral tendencies (Carson et al., 2022). Within this framework, the Light Quartet offers a theoretically coherent basis for examining individual differences in coaches' emotional experiences and leadership behaviors.

Although the four traits share a positive dispositional orientation, they represent conceptually distinct psychological processes. Hope extends beyond wishful thinking and reflects goal-directed cognition involving the perceived capacity to initiate goal pursuit and identify viable pathways toward desired outcomes (Sääksi et al., 2024; Yang et al., 2020). Within coaching, hope may be reflected in proactive goal-setting and the ability to formulate alternative strategies when obstacles arise. It has also been associated with persistence in overcoming challenges (Minda & Piasecka, 2019), the development of positive social environments (Dong et al., 2024; Doorley et al., 2022), and athlete engagement in the coaching process.

Optimism, by contrast, reflects a generalized expectation that favorable outcomes are likely to occur and may therefore influence how coaches interpret success, failure, and uncertainty (Zhang et al., 2025). Optimistic coaches may be more inclined to regard setbacks as temporary and manageable, thereby maintaining a constructive orientation toward athlete development and team goals (Cnen et al., 2021; Sehrawat et al., 2024). Such an outlook has also been associated with encouragement, constructive feedback, a positive training climate, and greater athlete confidence under demanding conditions (Espinosa et al., 2022).

Perseverance is distinguished by continued effort and sustained commitment to goal pursuit despite difficulties, setbacks, or failure (Cormier et al., 2024). In coaching settings, perseverance may be particularly salient when athlete development requires prolonged effort despite limited or inconsistent progress. Coaches characterized by greater perseverance may remain committed to developing athletes' skills under challenging conditions (Birr et al., 2024), encourage athletes to construe mistakes as opportunities for learning (Gano-Overway, 2024; Roy et al., 2021), and adapt their coaching strategies to support continued improvement (Cormier et al., 2025).

Resilience refers to adaptive functioning in response to adversity, stress, and change (Gupta & McCarthy, 2022). Resilient coaches may be better able to maintain psychological functioning when confronted with competitive demands, setbacks, and uncertainty. Previous studies have associated resilience with adaptive responses to stressors (Llanos-Muñoz et al., 2023; Sarkar & Hilton, 2020), recovery from setbacks and failure (Sipondo & Terblanche, 2024), and continued support for athletes during challenging situations (Aronen et al., 2021; Varela et al., 2020).

These conceptual distinctions suggest that hope, optimism, perseverance, and resilience may contribute differently to coaches' emotional experiences and leadership behaviors. Hope emphasizes agency and pathways toward goals, optimism concerns generalized future expectations, perseverance reflects sustained effort, and resilience captures adaptive functioning following adversity. Accordingly, examining these traits individually provides greater theoretical specificity in understanding how positive dispositional characteristics are associated with coaching processes. Building on the Light Quartet framework established in sport coaching (Laborde et al., 2017), the present investigation considers these traits in relation to coaches' emotional experiences and leadership behaviors.

1.2 Light Quartet Traits and Emotions

Personality traits have long been associated with systematic differences in emotional experience because they influence how individuals perceive, interpret, and respond to emotionally salient situations (Hughes et al., 2020). These associations may also operate through processes such as emotion regulation (Tang, 2023) and cognitive appraisal (Scherer, 2021). Within this perspective, the Light Quartet traits may be associated with positive emotional experiences through distinct dispositional processes.

Hope has been associated with positive emotions such as happiness (Bloore et al., 2020), enthusiasm, and satisfaction (Longakit et al., 2025; Velez et al., 2024), as well as lower anger (Walter et al., 2021), anxiety (Richardson, 2023), and negative affect (Bloore et al., 2020). Among coaches, higher hope may correspond with more favorable emotional experiences under pressure and with interpersonal environments in which athletes and staff can express emotions openly (Cooke et al., 2024; Freitas et al., 2020). The agency and pathways components of hope may be particularly relevant to emotional experience when

coaches perceive progress toward goals or identify alternative means of pursuing them. Optimism has likewise been associated with the frequency and intensity of positive emotions, particularly when individuals anticipate favorable outcomes and interpret ambiguous circumstances constructively (Cnen et al., 2021; Laborde et al., 2017). Positive emotional states associated with optimism include excitement, joy, satisfaction, and enthusiasm (Peris-Delcampo et al., 2024). In coaching settings, such emotional experiences may be especially relevant when setbacks are interpreted as temporary and manageable rather than as enduring threats (Cnen et al., 2021).

Perseverance reflects sustained effort and commitment despite adversity (Cormier et al., 2024). Coaches characterized by perseverance may display determination and patience when confronted with setbacks (Moen & Olsen, 2020). The trait has also been associated with passion, satisfaction, and enjoyment (Sigmundsson & Haga, 2024; Cho et al., 2021), as well as lower stress (Yang et al., 2023) and anxiety (Tedesqui & Young, 2020). These findings suggest that sustained engagement with meaningful goals may be accompanied by more favorable emotional experiences even under demanding conditions. Resilience denotes the capacity to endure and recover from adversity while maintaining psychological well-being (Fletcher & Sarkar, 2012). Resilient coaches may exhibit greater confidence, flexibility, and supportive attitudes in high-pressure circumstances (Adiloğulları et al., 2025; Varela et al., 2020). Resilience has also been associated with happiness and enthusiasm (Huang et al., 2021), gratitude (Lasota et al., 2020), and an enhanced capacity to experience positive affect while managing psychological distress (Riehm et al., 2021; Adiloğulları et al., 2025). Collectively, these observations indicate that the four Light Quartet characteristics are linked to favorable emotional experiences, while the psychological foundations of these connections may vary among the attributes. Their distinct personality traits offer a valuable foundation for analyzing the diversity in coaches' positive emotional experiences.

1.3 Emotions and Coaching Behavior

Emotions have become a fundamental aspect of sport contexts (Baier-Fuentes et al., 2020), shaping how individuals perceive, respond to, and behave in demanding situations. Although much of the existing literature has focused on athletes, coaches also experience affective states that are associated with their professional functioning and interactions with athletes. Emerging evidence indicates that coaches' emotions are related to sport-specific attitudes and behaviors (Nam et al., 2025; Tamminen & Dunn, 2022). Positive emotional experiences have been associated with task performance (Cho et al., 2021; Decarli et al., 2024), work satisfaction (Peixoto et al., 2023), and work motivation (Tur-Porcar & Ribeiro-Soriano, 2020). Coaches experiencing happiness, excitement, and enthusiasm may also be more likely to engage constructively with athletes. Cheerfulness and inspiration have been associated with supportive interactions, constructive feedback, and positive training environments (Cooke et al., 2024; Freitas et al., 2020), while pride and happiness associated with athletes' accomplishments have been linked with greater engagement and commitment to coaching activities (Decarli et al., 2024).

The potential influence of positive emotions on coaching behavior can be explained through the broaden-and-build theory of positive emotions (Fredrickson, 2001, 2004). The theory proposes that positive emotions broaden individuals' momentary thought–action repertoires, expanding their attention, cognition, and range of possible actions. Over time, these broadened patterns of thinking and action may contribute to the development of enduring psychological, intellectual, behavioral, and social resources. Applied to coaching, experiencing positive emotions may enable coaches to approach situations with greater cognitive flexibility, consider alternative strategies, communicate more constructively, and remain open to athletes' perspectives. Such broadened thought–action tendencies may consequently facilitate adaptive coaching behaviors, including more effective training and instruction (TI), greater athlete participation in decision-making, and constructive feedback, while reducing reliance on rigid or controlling approaches. Consistent with this theoretical perspective, Cho et al. (2021) demonstrated the relevance of positive emotions to sport coaches' functioning, particularly their task performance and well-being. More recent evidence also supports the broader association among positive emotions, personal resources, and favorable outcomes, although the precise role of cognitive broadening within the theoretical sequence continues to be examined (Roth et al., 2024).

Positive emotions may be particularly important in coaching because coaches operate in environments characterized by performance demands, uncertainty, interpersonal interactions, and frequent decision-making. In such circumstances, the cognitive and behavioral flexibility associated with positive emotional experiences may allow coaches to respond more adaptively to athletes' needs and changing competitive demands. Conversely, negative emotional experiences, particularly when poorly regulated, may constrain coaches' responses and contribute to less

adaptive behaviors. Dejection and agitation, for example, may interfere with coaches' composure, decision-making, and communication (Ackeret et al., 2022; Kang & Lee, 2025), while frustration and sadness have been associated with excessive criticism or withdrawal from athletes (Yang et al., 2023). Anxiety and anger may likewise contribute to stress, burnout, and detachment, potentially undermining coach–athlete relationships and team morale (Decarli et al., 2024). Nevertheless, given the present study's emphasis on positive psychological characteristics, positive emotions are particularly relevant as a potential mechanism through which coaches' dispositional strengths may translate into constructive coaching behaviors.

Taken together, existing literature and the broaden-and-build theory provide a theoretical basis for examining positive emotions as a potential explanatory pathway in the indirect associations between positive personality traits and coaching behaviors. Coaches reporting greater positive emotions may also report broader and more adaptive patterns of interaction with athletes, including supportive, flexible, and development-oriented leadership behaviors. Accordingly, positive emotions may represent an important affective correlate through which individual differences in the Light Quartet traits are associated with coaching behaviors. This possibility provides the theoretical basis for examining indirect associations between coaches' positive personality traits, emotional experiences, and leadership behaviors.

1.4 Current Study

Building on the Light Quartet framework (Laborde et al., 2017) and the broaden-and-build theory of positive emotions (Fredrickson, 2001, 2004), the present study examined the associations among hope, optimism, perseverance, resilience, positive emotions, and coaching behaviors. Positive emotions were examined as a mediator of the associations between each Light Quartet trait and five dimensions of coaching behavior: TI, democratic behavior (DB), autocratic behavior (AB), social support (SS), and positive feedback (PF).

Accordingly, the following hypotheses were proposed:

H1: Light Quartet traits (hope, optimism, perseverance, and resilience) are positively associated with positive emotions. **H2:** Positive emotions are associated with coaching behaviors (TI, DB, AB, SS, and PF). **H3:** Positive emotions statistically mediate the associations between Light Quartet traits (hope, optimism, perseverance, and resilience) and coaching behaviors (TI, DB, AB, SS, and PF).

2. Methods

2.1 Participants

The sample comprised 570 sports coaches from public and private higher education institutions (HEIs) across Southern Philippines, specifically in Lanao del Norte, Misamis Occidental, Misamis Oriental, and Zamboanga del Sur. Participants coached athletes in individual, dual, and team sports and were selected through purposive sampling. To be eligible for inclusion, participants were required to (a) be actively involved in coaching athletes in an HEI, (b) have at least 5 years of coaching experience, and (c) have coached athletes in competitions at least at the regional level. The participants ranged in age from 20 to 60 years (M = 38.93, SD = 7.49), with females comprising the majority of the sample (55.6%, n = 317).

2.2 Data Gathering Procedure

Prior to data collection, the study was reviewed and approved by the Research Ethics Committee of Mindanao State University–Iligan Institute of Technology. All respondents provided informed consent and were informed of the study's purpose, voluntary participation, confidentiality, and their right to withdraw at any time without penalty. The questionnaires were administered face-to-face, with researchers available only for clarification when needed. Given the potentially sensitive nature of some coaching behavior items, respondents were provided adequate privacy, and researchers did not observe or inspect their responses during completion. Respondents' information and completed questionnaires were handled confidentially and securely in accordance with Republic Act No. 10173, or the Data Privacy Act of 2012. Data collection was conducted with due consideration for respondents' privacy, comfort, availability, and preferred schedule.

2.3 Measures

The Hope Scale (THS; Snyder et al., 1991) is a 12-item self-report measure assessing individuals' goal-directed thinking, specifically their perceived capacity to generate pathways toward goals and maintain agency in pursuing them. A sample item is, "I can think of many ways to get out of a jam." Responses are rated on an 8-point Likert scale ranging from 1 (definitely false) to 8 (definitely true) with higher scores indicating higher levels of dispositional

hope (i.e., greater likelihood of pursuing goals and generating alternative solutions). Previous research supports the reliability and validity of the THS (Rogers et al., 2024). In the present study, the scale demonstrated good internal consistency (Cronbach's α = 0.82).

Life Orientation Test-Revised (LOT-R) was used to assess "dispositional optimism" (Scheier et al., 1994). This scale is consist of 10-item scale where respondents rated their agreement using a 5-point scale, ranging from 0 (strongly disagree) to 4 (strongly agree). Sample items include "In uncertain times, I usually expect the best," "I'm always optimistic about my future." Higher scores recommend greater optimism, while lower scores define pessimism. The validity and reliability of the scale have been well-studied (Schou-Bredal et al., 2017). For the current study, LOT-R has a Cronbach alpha of 0.77.

The Perseverance of Effort subscale of the Grit Scale was used to assess participants' tendency to sustain effort and persist in pursuing goals despite difficulties and setbacks (Duckworth & Quinn, 2009). The subscale consists of six items, including statements such as "I finish whatever I begin," rated on a 5-point Likert scale ranging from 1 (not at all like me) to 5 (very much like me). Higher scores indicate greater perseverance of effort. Previous research has supported the psychometric properties of the scale (Frontini et al., 2022). In the present study, the Perseverance of Effort subscale demonstrated acceptable internal consistency of 0.78.

Ego Resiliency Scale-Revised is a scale that estimates the individual's flexibility in managing emotional responses in actively changing circumstances (Alessandri et al., 2012). The 14 items (i.e., "Most of the people I meet are likable," "I like to do new and different things") were answered using a 7-scale point, from 1 (never) to 7 (always) with higher scores indicating greater ego resiliency. The scale has been found to be reliable and valid using diverse populations (Vecchio et al., 2019). A Cronbach alpha of 0.93 was obtained in this study.

The positive emotion subscales of the Sports Emotion Questionnaire (SEQ; Jones et al., 2005) were adopted to assess coaches' positive emotions toward their coaching experience. The positive emotion component consists of eight items representing excitement and happiness, including emotional states such as *excited, enthusiastic,* and *happy*. The items were contextualized to coaching by asking participants to indicate the extent to which they experienced each emotion in relation to their coaching experience. Responses were rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely), with higher scores indicating greater intensity of positive emotions. The SEQ has demonstrated established psychometric properties (Arnold & Fletcher, 2015; Hagan et al., 2022). In the present study, the positive emotion subscale demonstrated good internal consistency of 0.92

The Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980) was used to assess coaches' leadership behaviors across five dimensions: TI, DB, AB, SS, and PF. The scale consists of 40 items (e.g., "See to it that every athlete is working to his capacity"), rated on a 5-point Likert scale ranging from 1 (never) to 5 (always), with higher scores indicating greater endorsement of the respective coaching behavior. Previous studies have supported the reliability and validity of the scale (Lee & Nam, 2022; Teques et al., 2020). In the present study, the five LSS subscales demonstrated acceptable to good internal consistency: TI (Cronbach's α = 0.949), DB (α = 0.896), AB (α = 0.837), SS (α = 0.886), and PF (α = 0.853). The overall scale also demonstrated high internal consistency (Cronbach's α = 0.938).

2.4 Data Analysis

Prior to the main analyses, the data were screened for missing values. A total of 25 item-level responses were identified as missing, indicating a minimal amount of missing data across the dataset. Missing item responses were estimated using the expectation-maximization algorithm prior to the computation of composite scores (Dong & Peng, 2013). Descriptive statistics and Pearson correlation coefficients were computed to examine the distributions and bivariate relationships among the study variables. Mediation analyses were subsequently conducted using the PROCESS macro for SPSS 20.0 to examine whether positive emotions mediated the relationships between each Light Quartet trait (hope, optimism, perseverance, and resilience) and each dimension of coaching behavior (TI, DB, AB, SS, and PF). Indirect effects were evaluated using a nonparametric bootstrapping procedure with 10,000 resamples and 95% confidence intervals, with an indirect effect considered statistically significant when the confidence interval did not include zero.

3. Results

3.1 Bivariate Correlations

As shown in Table 1, the Light Quartet traits exhibited varying associations with the dimensions of coaching behavior. Although several correlations were statistically significant, the observed associations were generally small to moderate in magnitude. Positive emotions were also

	1	2	3	4	5	6	7	8	9	10
1. Hope										
2. Optimism	0.56**									
3. Perseverance	0.31**	0.39**								
4. Resilience	0.50**	0.64**	0.49**							
5. TI	0.24**	0.32**	0.30**	0.32**						
6. DB	0.25**	0.33**	0.17**	0.19**	0.62**					
7. AB	0.09*	0.22**	0.08	0.03	0.07	0.44**				
8. SS	0.10*	0.17**	0.09*	0.13**	0.26**	0.40**	0.48**			
9. PB	0.24**	0.22**	0.16**	0.21**	0.59**	0.49**	0.16**	0.47**		
10. Positive Emotions	0.13**	0.18**	0.22**	0.264**	0.35**	0.20**	−0.079	0.01	0.17**	
Mean value	5.21	1.90	3.79	5.41	4.36	4.12	3.24	3.78	4.28	2.85
SD	0.90	0.50	0.60	0.89	0.58	0.64	0.96	0.78	0.68	0.58

Note: TI – training and instructions; DB – democratic behavior; AB – autocratic behavior; SS – social support; PB – positive feedback. Significant at level *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 1. Correlation among constructs.

significantly associated with several coaching behavior dimensions, with varying effect sizes across the outcomes. Given the sample size, the findings were interpreted based on both statistical significance and the magnitude and precision of the correlation coefficients. Accordingly, 95% confidence intervals are reported for the primary correlations to provide an indication of the precision of these estimates.

3.2 Mediation Analysis

Table 2 presents the direct, indirect, and total associations between the Light Quartet traits (hope, optimism, perseverance, and resilience) and the five dimensions of coaching behavior through positive emotions. The bootstrap analyses showed significant positive indirect associations through positive emotions for TI, DB, and PF, as the corresponding 95% bootstrap confidence intervals did not include zero. In contrast, the indirect associations with SS were not statistically supported, as the corresponding bootstrap confidence intervals included zero. For AB, significant negative indirect associations through positive emotions were observed across the Light Quartet traits, despite the positive direction of the corresponding direct associations. This pattern suggests that the association between the Light Quartet traits and AB may operate differently through positive emotions than through their direct associations with this coaching behavior. Thus, positive emotions may offset part of the positive direct associations between the Light Quartet traits and AB rather than indicating that these traits are simply associated with reduced autocratic coaching. Overall, the findings indicate that positive emotions statistically account for part of the associations between the Light Quartet traits and specific dimensions of coaching behavior, although the direction and presence of these indirect associations vary across coaching behaviors.

4. Discussion

This study examined the associations between coaches' Light Quartet traits and coaching behaviors, with particular attention to the statistical indirect role of positive emotions. The findings showed that the light quartet traits (i.e., hope, optimism, perseverance, and resilience) were significantly and positively associated with coaches' positive emotions. Positive emotions, in turn, accounted for significant indirect associations between the Light Quartet traits and several dimensions of coaching behavior, particularly TI, DB, PF, and AB. Notably, positive emotions did not mediate the relationship between Light Quartet traits and SS. These results highlight that although Light Quartet traits substantially affect SS, positive emotions do not fully explain this link, suggesting that other mediating factors may be involved and warrant further investigation.

4.1 From Light Quartet Traits to Positive Emotions

The findings showed that hope, optimism, perseverance, and resilience were consistently associated with greater

Predictor	Outcome	*(a)*	*(b)*	Direct effect (*c′*)	Indirect effect (*ab*)	Total effect (*c*)	SE (*ab*)	95% Boot CI
Hope	TI	0.056	0.516	0.134	0.028	**0.163****	0.009	(0.011, 0.049)
	DB	0.056	0.209	0.122	0.011	**0.134****	0.004	(0.004, 0.022)
	AB	0.056	−0.094	0.044	−0.005	**0.039****	0.003	(−0.013, −0.007)
	SS	0.056	−0.008	0.055	−0.0004	**0.055****	0.003	(−0.008, 0.006)
	PB	0.056	0.105	0.068	0.005	**0.074****	0.002	(0.002, 0.011)
Optimism	TI	0.165	0.479	0.400	0.079	**0.479****	0.019	(0.046, 0.122)
	DB	0.165	0.180	0.344	0.029	**0.374****	0.009	(0.013, 0.053)
	AB	0.165	−0.124	0.226	−0.020	**0.206****	0.008	(−0.041, −0.007)
	SS	0.165	−0.032	0.212	−0.005	**0.207****	0.010	(−0.025, 0.015)
	PB	0.165	0.100	0.135	0.016	**0.152****	0.005	(0.007, 0.029)
Perseverance	TI	0.289	0.472	0.488	0.136	**0.625****	0.029	(0.087, 0.204)
	DB	0.289	0.209	0.215	0.060	**0.276****	0.017	(0.031, 0.102)
	AB	0.289	−0.104	0.132	−0.030	**0.102****	0.013	(−0.061, −0.007)
	SS	0.289	−0.018	0.156	−0.005	**0.150****	0.018	(−0.042, 0.033)
	PB	0.289	0.106	0.117	0.030	**0.147****	0.009	(0.014, 0.053)
Resilience	TI	0.098	0.453	0.146	0.044	**0.191****	0.008	(0.029, 0.064)
	DB	0.098	0.200	0.066	0.019	**0.085****	0.005	(0.010, 0.032)
	AB	0.098	−0.096	0.022	−0.009	**0.012****	0.004	(−0.019, −0.001)
	SS	0.098	−0.038	0.066	−0.003	**0.062****	0.006	(−0.015, 0.009)
	PB	0.098	0.091	0.049	0.009	**0.058****	0.003	(0.003, 0.015)

Note. TI = training and instruction; DB = democratic behavior; AB = autocratic behavior; SS = social support; PB = positive feedback. *a* = effect of the predictor on positive emotions; *b* = effect of positive emotions on the outcome; *c′* = direct effect; *ab* = indirect effect; *c* = total effect; Boot SE = bootstrap standard error; Boot CI = bootstrap confidence interval. Indirect effects were evaluated using 10,000 bootstrap resamples and were considered statistically significant when the 95% bootstrap confidence interval did not include zero. Significant at the $^{**}p < 0.01$ level.
Table 2. Mediation results.

positive emotions among coaches. This pattern corresponds with previous research linking positive emotional experiences with hope (Yang et al., 2020), optimism (TenHouten, 2023), persistence (Gano-Overway, 2024), and resilience (Adiloğulları et al., 2025). Although these characteristics share a positive dispositional orientation, their associations with positive emotions may reflect different psychological processes consistent with their distinct conceptual foundations.

Hope was positively associated with coaches' positive emotions, consistent with previous studies linking hope with happiness, joy, confidence, excitement, interest, zest, and gratitude (Mathis et al., 2009; Nabeta et al., 2023; Feldman & Jazaieri, 2024; Głaz, 2022; TenHouten, 2023; Heinitz et al., 2018; Hausler et al., 2017). This relationship is consistent with Snyder's conceptualization of hope in terms of agency, pathways, and goal-directed thinking (Corrigan & Schutte, 2023). Coaches who perceive themselves as capable of pursuing valued goals and identifying alternative pathways when difficulties arise may also experience more favorable emotional states associated with goal progress and perceived possibilities for success.

Similarly, optimism was positively associated with coaches' positive emotions. Optimism reflects a generalized expectation of favorable future outcomes (Scheier & Carver, 2018) and has been associated with emotional states such as joy, happiness, excitement, enthusiasm, and gratitude (Scheier & Carver, 2018; TenHouten, 2023). The tendency to interpret present circumstances constructively and maintain favorable expectations about future outcomes may correspond with more positive emotional experiences, particularly when coaches encounter uncertainty or setbacks. Such an interpretation is also consistent with evidence linking optimistic cognitive appraisals with more favorable responses to challenging circumstances (Krafft et al., 2021).

Perseverance was likewise positively associated with positive emotions. Construed as sustained effort toward goal attainment despite difficulties and setbacks (Cormier et al., 2024), perseverance has been associated

with determination, patience, pride, passion, satisfaction, enjoyment, curiosity, and zest (Hausler et al., 2017; Heinitz et al., 2018). Continued engagement with meaningful goals and perceptions of progress may therefore coincide with favorable emotional experiences, particularly when coaches persist through demanding developmental or competitive circumstances. Persistent individuals may also continue pursuing long-term objectives despite negative feedback or initial failure (Lee et al., 2024), while progress toward meaningful goals has been associated with positive affect and well-being.

Resilience was also positively associated with positive emotions. Previous research has linked resilience with the capacity to adapt to adversity and manage stressful experiences (Kuldas & Foody, 2022; Linnemann et al., 2020) and with positive emotional experiences under challenging circumstances (Adiloğulları et al., 2025; Varela et al., 2020). Gratitude, interest, curiosity, joy, contentment, and enthusiasm have similarly been associated with resilient functioning (Aronen et al., 2021; Varela et al., 2020; Fredrickson, 2004). A potential foundation for this association resides in affirmative cognitive reappraisal, wherein difficult situations are construed in manners that maintain significance, potential, or avenues for adjustment (Riehm et al., 2021). Within coaching contexts, such patterns may be particularly relevant when coaches encounter competitive setbacks, performance pressures, and uncertainty.

Taken together, these findings reinforce the conceptual value of examining the Light Quartet traits separately. Although the four characteristics were positively related to one another, hope reflects agency and pathways, optimism reflects generalized positive expectancies, perseverance reflects sustained effort, and resilience reflects adaptive functioning in adversity. Their common associations with positive emotions therefore do not necessarily indicate interchangeable psychological processes, but rather potentially distinct dispositional correlates of coaches' emotional experiences.

4.2 Positive Emotions and Coaching Behaviors

The findings further showed that positive emotions accounted for significant indirect associations between the Light Quartet traits and several dimensions of coaching behavior. This pattern is consistent with the broaden-and-build theory, which proposes that positive emotional experiences are associated with broader thought–action repertoires and the development of psychological and behavioral resources (Fredrickson, 2004; Thompson et al., 2021). Within coaching contexts, positive emotional experiences may therefore accompany greater cognitive flexibility, openness to alternative strategies, and responsiveness to athletes' needs.

The positive indirect associations with TI are consistent with previous evidence linking coaches' positive emotions with task performance (Cho et al., 2021), exploration of tactical alternatives, and creative responses to training challenges (Tobias et al., 2024). Coaches reporting greater positive emotional experiences may also report greater engagement in instructional and developmental practices because such emotional states are associated with broader attention and greater openness to alternative courses of action.

Positive emotions were also associated with democratic coaching behavior. Previous studies have linked positive affect with autonomy-supportive coaching practices, including providing choices, acknowledging athletes' perspectives, and explaining the rationale underlying training activities (Nam et al., 2025; Tamminen & Dunn, 2022; Cho et al., 2021; Decarli et al., 2024). Greater cognitive flexibility and openness to multiple perspectives associated with positive emotional experiences may correspond with greater willingness to involve athletes in decision-making and consider their perspectives (Thompson et al., 2021; Lam et al., 2021). The present findings are therefore compatible with the theoretical expectation that positive emotional experiences are associated with more participative forms of coaching.

A more differentiated pattern emerged for AB. Although the indirect associations through positive emotions were negative, the corresponding direct associations between the Light Quartet traits and AB were positive. This pattern indicates that the relationship between positive personality characteristics and autocratic coaching is more complex than a straightforward association with reduced AB. Positive emotions were associated with lower AB within the indirect pathway, whereas the remaining direct associations operated in the opposite direction.

This finding may reflect the contextual nature of leadership behavior in sport. Positive emotions have been associated with broader perspectives, greater sensitivity to athletes' needs, and reduced reliance on rigid responses (Li & Xing, 2025; Teques et al., 2020). Coaches experiencing positive emotions may also demonstrate greater willingness to relinquish control and accommodate athletes' participation in decision-making (Kim & Choi, 2024). Challenge and threat appraisals may further correspond with different leadership responses under demanding circumstances (Bissett & Tamminen, 2022; Lazarus 2025; Lee & Choi, 2023; Wright et al., 2024). The current study indicates

that positive direct associations may exist between directive coaching methods and favorable dispositional traits. AB may therefore reflect situational demands, performance expectations, or leadership preferences that are not fully captured by coaches' positive emotional experiences.

Positive emotions also contributed to considerable indirect relationships with PF. This finding aligns with studies indicating that positive emotional conditions and challenge appraisals associated with coaches' ability to offer constructive assistance and feedback in response to situational pressures (Dixon et al., 2017; Hong & Kim, 2021). From a broaden-and-build perspective, positive emotions may correspond with an enlarged emphasis on athletes' strengths, endeavors, developmental needs, and opportunities for improvement (Dixon et al., 2017; Lam et al., 2021). Consequently, coaches who report heightened pleasant emotional experiences might exhibit increased vigilance toward actions deserving of reinforcement and constructive criticism.

In contrast to the other coaching aspects, the indirect relationships between the Light Quartet characteristics and SS via positive emotions lacked statistical support. This finding indicates that the connection between favorable personality traits and SS actions may encompass mechanisms beyond mere positive emotions. SS is fundamentally relational and may rely on coaches' attentiveness to athletes' requirements, the caliber of coach-athlete connections, contextual pressures, and various relational attributes. The lack of a notable indirect relationship is hence crucial in defining the extent of positive emotions in the current framework. Positive emotions are pertinent to various behavioral aspects, although they do not offer a unified explanatory framework for all types of coaching behavior. Alternative interpersonal or contextual factors may be especially prominent in SS actions. Subsequent investigations may explore these various trajectories and ascertain if the associations differ based on attributes of the coaching context, such as the type of sport. The present study aligns with studies highlighting the significance of interpersonal interactions in coaching relationships (Tobias et al., 2024).

Moreover, the Philippine context offers a significant framework for understanding these results. Coaching practices are ingrained in interpersonal, institutional, and societal settings, with the interpretations of authority, athlete involvement, emotional expression, and interpersonal support varying by circumstance. In the context of Philippine sports, democratic and directive coaching styles are not inherently contradictory leadership approaches, and coaches could utilize various blends of these behaviors based on the requirements of individuals and the pressures of competition. This contextual viewpoint might be especially pertinent to the concurrent positive direct relationships with authoritarian conduct and negative indirect associations via positive emotions. Likewise, SS behaviors may indicate relational expectations that go beyond the emotional feelings of coaches. These prospects necessitate a culturally contextualized examination to ascertain how the identified correlations function across various coaching settings in the Philippines.

Furthermore, the results offer a nuanced perspective on the relationships between the Light Quartet traits, positive emotions, and coaching practices. Positive emotions demonstrated considerable indirect associations with TI, DBs, PF, and AB, but not with SS. The varied patterns of direct and indirect associations with AB suggest that favorable personality traits are not consistently linked to specific coaching styles. The results indicate that positive emotions may represent one possible emotional connection within a wider array of dispositional, emotional, interpersonal, and contextual elements linked to coaching behaviors. These patterns align with the suggested theoretical framework; but, due to the cross-sectional methodology, they should not be construed as demonstrating a temporal or causal relationship among the research variables.

4.3 Limitations of the Study

Despite its contributions, the present study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design precludes conclusions regarding the temporal or causal relationships among the Light Quartet traits, positive emotions, and coaching behaviors. Although the mediation analyses identified significant indirect associations, these findings do not establish the temporal sequence implied by the proposed model. Future longitudinal or experimental studies are needed to examine the direction and temporal ordering of these relationships.

Second, all predictor, mediator, and outcome variables were assessed through self-report measures obtained from the same respondents at the same time. This single-source and concurrent measurement approach may be susceptible to common-method variance, whereby shared response tendencies, social desirability, or other method-related factors may contribute to the observed associations among the study variables. This consideration is particularly relevant to the interpretation of indirect effects, as common-method variance may influence associations across different components of the mediation model.

Accordingly, the magnitude of the observed indirect associations should be interpreted with appropriate caution.

Third, coaching behaviors were assessed based on coaches' self-reported perceptions of their own leadership behaviors rather than direct observations or evaluations from athletes. Consequently, the findings reflect perceived coaching practices and may not fully correspond with behaviors displayed during actual training or competition. Future studies could strengthen the assessment of coaching behavior by incorporating multiple sources of evidence, such as athlete-reported coaching behavior, independent observer ratings, or systematic behavioral coding, alongside coaches' self-reports.

Although the measures employed in the study have established psychometric support, the present study did not independently examine their measurement structure or discriminant validity. Future research may employ confirmatory factor analysis or related latent-variable approaches to establish the empirical distinctiveness of the theoretically related constructs within the study population. Additionally, the four Light Quartet traits were examined in separate mediation models. Given the correlations among hope, optimism, perseverance, and resilience, the estimated associations may partly reflect variance shared among these positive dispositions and should not be interpreted as their unique contributions. Future research may employ simultaneous multivariable or latent-variable models to distinguish their shared and unique associations with positive emotions and coaching behaviors.

Finally, the study was conducted among coaches from HEIs in Southern Philippines, which may limit the generalizability of the findings to coaches from other geographical, cultural, institutional, or competitive settings. Contextual characteristics such as sport type and other features of the coaching environment were also not examined as potential moderators of the observed relationships. Future research may therefore investigate whether these associations vary across different sports, competitive levels, and sociocultural contexts.

Despite these limitations, the study extends the Light Quartet framework beyond its established relevance to coping by examining its associations with coaches' emotional experiences and leadership behaviors. The simultaneous consideration of hope, optimism, perseverance, and resilience also provides a more differentiated account of how conceptually distinct positive dispositions relate to positive emotions and specific dimensions of coaching behavior. Moreover, the study contributes evidence from the Philippine coaching context and identifies positive emotions as a statistically relevant indirect correlate of several associations between the Light Quartet traits and coaching behaviors.

5. Conclusion

This study provides evidence of significant indirect associations between Light Quartet traits and coaching behaviors through positive emotions among sport coaches. Positive emotions accounted for significant indirect associations between hope, optimism, perseverance, and resilience and several coaching behaviors, particularly TI, DB, PF, and AB, whereas the indirect associations with SS were not statistically supported. These findings extend the Light Quartet literature by highlighting positive emotions as a relevant psychological correlate in the associations between positive dispositions and coaching behaviors. Future longitudinal and experimental research may further examine the modifiability of these traits and emotional experiences and whether changes in them are associated with subsequent changes in coaching behavior, thereby providing a stronger empirical basis for trait-focused interventions.

5.1 Data Provenance and Research Transparency

The sample reported in the present study was previously included in an earlier version of the research presented at the 2019 International Conference of the Association for Physical Education and Sport. The earlier dissemination was limited to a conference paper presentation and was not published as a full-length research article. The present manuscript represents the subsequent development and refinement of the study, including its theoretical framing, analytical approach, and interpretation of the findings.

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Author contributions

Deljun R. Rodriguez: conception and design of the study, acquisition of data, analysis and interpretation of data, manuscript preparation, and obtaining funding; Imelu G. Mordeno: conception and design of the study, acquisition of data, analysis and interpretation of data, and obtaining funding; Jet C. Longakit: conception and design of the study, acquisition of data, analysis and interpretation of data, and obtaining funding.

Conflict of interest statement

All authors have contributed to this manuscript and declare no conflict of interest.

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