

STUDY OF WOODBALL COACHES' POSITIVE LEADERSHIP ON SPORT PASSION, SPORT ENJOYMENT AND SPORT WELL-BEING

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Abstract

The purpose of this study was to explore the impact of woodball coaches' positive leadership on sport passion, sport enjoyment and sport well-being. The questionnaire survey method was adopted, a total of 320 questionnaires were distributed, 320 were returned, with a response rate of 100%. 288 valid questionnaires remained after the exclusion of 32 invalid questionnaires, resulting in an effective recovery rate of 90%. The statistical analysis of the relevant data was carried out with SPSS and AMOS. The study results showed that: 1) positive leadership had a significant positive effect on sport passion; 2) positive leadership had a significant positive effect on sport enjoyment; 3) positive leadership had a significant positive effect on sport well-being; 4) sport passion had a significant positive effect on sport enjoyment; 5) sport passion had a significant positive effect on sport well-being; 6) sport enjoyment had a significant positive effect on sport well-being. Finally, relevant recommendations were provided for practical application and future research based on the research results.

Key words: woodball athletes, positive leadership, sport passion, sport enjoyment, sport well-being.

Introduction

Leadership behavior in the context of sports has always been an important topic of interest for many researchers studying sport teams. Past research on coaching leadership behavior mainly used the Multidimensional Model of

Leadership proposed by Chelladurai (1978) as the primary research model. Subsequently, some researchers shifted to new types of leadership behavior theories, covering topics such as transformational leadership, transactional leadership and charismatic leadership. These theories mainly focus on how individuals,

attracted by the leader's charisma, identify with the leadership, share a vision and outcomes, and work together to achieve common goals. They attempt to provide richer and newer perspectives on leadership theory from different perspectives.

As can be seen from these new types of leadership behavior theories, research on leaders' leadership styles tends to focus on guiding team members toward a common vision with a positive and proactive attitude. The concept of "positivity" as a term was first proposed by Maslow in 1954, and it was further promoted by Seligman in 1998 when he served as President of the American Psychological Association (Ren & Yeh, 2006; Yang, 2023).

Positive leadership was proposed in 2008 by Professor Kim Cameron, a scholar of management and organization at the University of Michigan, USA, as a new discourse on leadership. Cameron (2012) believes that positive leadership is the application of positive principles formed in the fields of positive psychology, positive organizational studies and positive change. Cameron proposed three levels of "positive leadership": (1) the ability to generate positive transcendental performance, meaning performance that surpasses ordinary or expected results; (2) focusing on human strengths, abilities and potential, emphasizing success and flourishing; (3) being based on Aristotle's assumption of "Eudaimonia", focusing on promoting interpersonal relationships, cultivating virtues of goodness, and enabling people to reach their best state (Hsieh (trans), 2011; Yang, 2023). Cameron also suggested that strategies of

positive leadership include: (1) providing subordinates with the best self-feedback and using supportive language for positive communication; (2) encouraging subordinates to cultivate compassion, tolerance and gratitude to shape a positive atmosphere; (3) constructing a positive energy network through mutual support among members to build positive relationships; (4) providing subordinates with the meaning and purpose of work, imparting positive meaning (Hsieh (trans), 2011). Positive leadership re-examines the positive psychological development of humans from the perspective of positive psychology, teaching people how to achieve success, increase joy, and make life more valuable (Seligman and Csikszentmihalyi, 2000; Cheng, 2012).

Research related to positive leadership has attracted academic attention since it was proposed by Cameron (2012). Initially, it was mostly used in the studies on the management of organizations in companies, social services and public sectors (Smith et al., 2012; Wijewardena et al., 2014; Nel et al., 2015; Schimschal and Lomas, 2019; Liao et al., 2019; Haghparast and Rastgar, 2021). Later, it has gradually been extended to the research in educational administration (Hsieh, 2014; Lai & Wu, 2015; Hsieh & Hsieh, 2016; Murphy et al., 2017; Cherkowski, 2018; Benito et al., 2018; Louis and Murphy, 2018; Bernal et al., 2019; Hsieh et al., 2019; Cherkowski et al., 2020; Su, 2021; Tseng & Tu, 2021; Yang, 2023) and sports contexts (Huang et al., 2021; Chao, 2024).

The methods for measuring the connotation of positive leadership can initially be traced back to Cameron (2008),

who, based on positive organizational scholarship, proposed that positive leadership can utilize strategies such as positive climate, positive relationships, positive communication and positive meaning to enable individuals in the organization to leverage their strengths, engage in positive interactions, and achieve outstanding performance. These four strategic frameworks provide an important theoretical foundation for the four dimensions of the development of subsequent positive leadership measurement scales.

Antino et al. (2014) further conceptualized Cameron's (2008) strategies of positive climate, positive relationships, positive communication and positive meaning, and proposed the Positive Leadership Assessment Scale (PLAS). In addition to the aforementioned four dimensions, they added positive strategies, so a five-dimension scale was developed. The scale also established external validity with significant positive correlation between transformational leadership and authentic leadership. Research results also indicate that the scale has both reliability and validity.

For the research on positive leadership in Taiwan, Hsieh (2011) developed a locally adapted positive leadership scale for use in educational settings based on Cameron's concept of positive leadership. Subsequent domestic studies mostly followed this framework to revise and apply the scale. In addition to the application in the educational field, it has also been used in other cross-domain contexts, including sports, indicating that revisions of this scale have become the main versions for related research in Taiwan.

Therefore, by referring to the positive leadership scales of Cameron (2008), Hsieh (2011), Huang et al. (2021) and Chao (2024) for modification, this study divided the scale into four dimensions: positive climate, positive relationships, positive communication, and positive meaning.

Passion is defined as a strong inclination of an individual to engage in activities that they identify with, perceive as important, enjoy, and are willing to invest a substantial amount of time and energy in (Vallerand, 2003). It is also proposed that the development of passion can be divided into three stages: the first stage is the selection of the activity; the second stage is the individual's evaluation of the activity of interest; and the third stage is the internalization of the activity into the self-identity, ultimately leading to the emergence of passion (Vallerand et al., 2003; Vallerand, 2007).

The individual's recognition of passion is influenced by different internalization processes. In research on passion, Vallerand et al. (2003) divided passion into harmonious passion and obsessive passion. Harmonious passion refers to that the individual's willingness to engage in an activity is under control and flexible; the individual can decide whether or not to engage in the activity, so the activity does not conflict with other aspects of life and can actually complement them and create a sense of harmony. It produces higher positive affect when the individual is participating in the activity. Obsessive passion refers to a controlled internalization process. Controlled internalization

means the individual engages in an activity due to internal or external pressures (e.g., social acceptance, self-esteem) or additional conditions associated with the activity (e.g., losing weight) (Ting, 2016). Research on passion in sports contexts has also used the scales based on the classification of passion by Vallerand et al. (2003) (Vallerand et al., 2003; Vallerand et al., 2006; Vallerand et al., 2008; Lafrenière et al., 2011; Carpentier et al., 2012; Swanson and Kent, 2017; Li et al., 2007; Chang et al., 2012; Liu et al., 2016; Chang, 2016; Liu et al., 2017; Huang et al., 2017; Lai, 2018; Chang et al., 2021; Chang & Hung, 2022; Chao, 2024; Chen, 2024).

Enjoyment, for an individual, is an inner experience that includes feelings, sensations, pleasure, fun and other positive reactions such as liking. As for the connotation of enjoyment, Deci and Ryan (1985) mentioned that when an individual successfully completes a task, he or she will experience a sense of accomplishment, competence and self-determination, which is enjoyment. Izard (1991) believes that enjoyment includes experiences of joy and sensory pleasure, containing confidence and a sense of satisfaction, and usually also includes feelings of being liked and loved. Wankel (1993) also mentioned that enjoyment is related to positive emotions and involves higher-level psychological aspects, such as satisfaction or self-growth, as perceived responses to environmental challenges. Therefore, enjoyment encompasses multiple aspects. The same applies in sports contexts. Scanlan and Lewthwaite (1986) stated that sport enjoyment refers to athletes experiencing positive emotional

reactions during the sports process, such as pleasure, liking, and fun. Chi (1995) considered sport enjoyment as one of the psychological characteristics of athletes during optimal athletic performance.

The sources of enjoyment in sport contexts have also been a topic of interest for many researchers. Csikszentmihalyi (1975) summarized eight sources of sport enjoyment, including comparison with others, developing personal skills, friendship, activity based enjoyment, experiencing pleasure, testing abilities, influence, and emotional release. Scanlan and Simons (1992) proposed sources of sport enjoyment from two dimensions of intrinsic/extrinsic factors and achievement/non-achievement focus, with four quadrants formed. They distinguished the sources of sport enjoyment as: 1) Intrinsic/non-achievement: enjoyment comes from the experience of participating in the sport itself; 2) Extrinsic/non-achievement: enjoyment comes from social and environmental experiences; 3) Intrinsic/achievement: experiencing self-enhancement feelings such as competence, self-control and mastery; 4) Extrinsic/achievement: referring to externally enhanced feelings such as competence, self-control and mastery (Huang, 2013).

Regarding the development of the sport enjoyment scale, in the early stages of research, enjoyment in physical activity was measured with only one or two items, lacking completeness and measurement quality for sport enjoyment surveys. Kendzierski and DeCarlo (1991) further developed an 18-item single-dimension Physical Activity Enjoyment Scale (PACES). Later, Motl et al. (2001)

conducted reliability and validity tests on the scale and proposed a 16-item version, extending sport enjoyment measurement from single-dimension surveys to a more reliable and valid single-dimension sport enjoyment scale. Sport enjoyment assessment during this period focused on positive emotional responses, concentrating on individual pleasure, preferences and perceptions during exercise (Tsai & Fu, 2012).

Subsequently, the scale of sport enjoyment gradually extended from a single-dimension to a multi-dimension orientation. Garn and Cothran (2006) further regarded enjoyment of multiple dimensions, and proposed a four-dimension scale based on the sources of enjoyment of Scanlan and Simons (1992). Chang et al. (2021) revised and studied this scale to show that the scale has good reliability and validity, and is feasible for use in domestic research.

In Taiwan, in addition to using or referring to foreign scales, relevant scholars have also made localized revisions and adjustments through research. Lin and Lu (2001) summarized four types of sources of sport enjoyment, including social and life opportunities, perceived competence, social identity and rewards, and activity based enjoyment, which initially laid an important foundation for the selection of "sources of enjoyment" in Taiwan. Fu (2012) established a sport enjoyment scale in his research with empirical reliability and validity including four dimensions: activity based enjoyment, social and life opportunities, appreciation and reward, and perceived competence through the process of literature induction,

expert review of questions, semantic review, and item factor analysis.

Huang (2014) developed his own items by referring to the related scales of domestic and international research on sport enjoyment in sport contexts. After expert validity review, item analysis, factor analysis, and reliability and validity tests, he divided the sport enjoyment scale into two dimensions: activity based enjoyment and perceived competence.

Lin (2018), based on the sport enjoyment model of Scanlan and Lewthwaite (1986), confirmed preliminary items through interviews. And four dimensions of enjoyment in physical education were initially established through factor analysis, identity analysis and criterion validity tests, which are intrinsic achievement enjoyment, extrinsic achievement enjoyment, intrinsic non-achievement enjoyment, and extrinsic non-achievement enjoyment.

A summary of domestic and international research on enjoyment in sport contexts reveals that the dimensions used in enjoyment scales vary, depending on the variables of different settings, contexts and research subjects. Researchers develop or select appropriate scale dimensions to conduct surveys. This study also referred to previous related research models when considering scale selection, and revised the scale developed by Huang (2014) to serve as the sport enjoyment scale for this study.

Well-being refers to an individual's overall evaluation of their life satisfaction as well as the positive and negative

emotions they experience (Andrews and Withey, 1976). Diener (1993) believes that well-being is a psychological state in which an individual experiences more positive affect, less negative affect, and feels satisfied with his or her overall life. Lu (1998) mentioned that well-being is often associated with concepts such as happiness, life satisfaction, positive emotions and mental health, mainly exploring the individual's subjective perception and experience of a happy state. Additionally, Chiu (2008) defined well-being as a complex dimension that includes both happiness and meaning from a psychological perspective. It can be seen from this that well-being is an integrative psychological experience, and a comprehensive evaluation of an individual's emotions, including happiness, satisfaction and meaning.

Extending the above concept of well-being to subjective well-being, Diener (1984) pointed out that subjective well-being is an individual's cognitive and emotional evaluation of life, where the cognitive aspect refers to overall life satisfaction, and the emotional aspect refers to responses to positive and negative emotions. Lu (1998) also mentioned that subjective well-being is a subjective experience and overall evaluation of life quality. In summary, subjective well-being can be regarded as an individual's subjective experience based on life satisfaction and emotional experiences, and also as a subjective psychological judgment of whether one is living well. Well-being, in relation to subjective well-being, belongs to the outermost circle, encompassing subjective well-being and laying the theoretical foundation for extending

the concept of well-being to sport well-being in sport contexts.

Early research on well-being in sports contexts primarily treated general well-being or subjective well-being as outcome variables of sport participation (Chen & Chi, 2009; Chang et al., 2012; Wang, 2015), with scales mainly focusing on life satisfaction and emotional experiences. Subsequent research in sports contexts gradually shifted toward sport well-being, and scales of more contextual and appropriate dimensions for the overall research theme were proposed to be applied in sports-related studies. For the sports context scale in international research, subjective vitality and enjoyment proposed by Reinboth et al. (2004) were used as key dimensional indicators of sport well-being. This dual-dimension framework allows sport well-being to move beyond merely applying general well-being research to sports contexts. Instead, it provides a dedicated measurement scale addressing the specific vitality and enjoyment experienced during sport participation. Research on sport well-being in Taiwan has primarily used localized foreign scales for empirical studies and their reliability and validity were validated. The results indicate that these scales are suitable for surveys conducted in Taiwan (Liu et al., 2016; Chang, 2016; Lee et al., 2016; Chang et al., 2021; Chen, 2024). This study, referencing the above related research, revised the sport well-being scale, dividing it into two dimensions: subjective vitality and sport enjoyment.

Woodball requires high concentration, emphasizing technique, and

demanding continuous long-term training. The leadership style of coaches may influence woodball athletes' training experiences and willingness, while the new form of positive leadership can enable coaches to create a supportive, encouraging and trusting training climate during practice, which may enhance athletes' enthusiasm, enjoyment and well-being in sport situations. This study considers it necessary to explore these relationships, which serves as one of the motivations for this study.

The study of the relationships among the three variables of sport passion, sport enjoyment and sport well-being, along with the construction of structural equation modeling (SEM), have become a research hot spot among scholars in recent years. However, there is still limited research that incorporates coaches' positive leadership into the investigation, and it is necessary to further supplement empirical studies related to woodball. Therefore, this study took woodball athletes as the research subjects to construct a theoretical model of positive leadership, sport passion, sport enjoyment and sport well-being, which is the second motivation for this study.

Methods

Research Hypotheses

The summary of past research reveals that positive leadership is a process in which leaders, through a positive atmosphere, supportive relationships, encouragement and communication, guide individuals in the team toward growth and the achievement of team goals. Hsieh

(2011) mentioned that positive leadership helps to stimulate team members' potential, improve the quality of communication and interaction, and enhance the organization's positive functions. In sport contexts, the study of Chao (2024) indicated that if coaches lead athletes through listening, affirmation, encouragement and trust, it helps maintain athletes' training engagement and sport passion. Therefore, this study hypothesized H1: positive leadership has a significant positive effect on sport passion.

Additionally, it was also found that positive leadership can create a safe, respectful, and supportive environment, allowing athletes to experience higher enjoyment and satisfaction during training processes, thus H2 was further derived: positive leadership has a significant positive effect on sport enjoyment. Then, research by Hsieh and Hsieh (2016) and Su (2021) found that positive leadership was significant positively correlated with and impacted well-being, which became the basis for this study's hypothesis H3: positive leadership has a significant positive effect on sport well-being. However, the study by Chao (2024) found that positive leadership had no significant effect on sport well-being. This study also considered it necessary to re-verify this.

There is already an empirical research foundation regarding the related research on sport passion, sport enjoyment and sport well-being. The results of Lee, Tu, and Liu (2016); Chen (2024), and others indicated that sport passion had a significant positive effect on sport enjoyment. Therefore, this study proposed H4: sport passion has a significant

positive effect on sport enjoyment. Next, Lee, Tu, and Liu (2016); Chang (2021); Chang and Hung (2022); and Chen (2024) showed that sport passion could positively predict sport well-being and that there was a significant positive correlation between sport passion and sport well-being. Thus, this study derived H5: sport passion has a significant positive effect on sport well-being. Finally, the studies of Lee et al. (2016); Chang et al. (2021); and Chen (2024) indicated that there was a significant positive relationship between sport enjoyment and sport well-being. Therefore, this study proposed H6: sport enjoyment has a significant positive effect on sport well-being. Overall, this study considered that the structural equation modeling (SEM) can be constructed with positive leadership as an antecedent variable to further promote their sport well-being through enhancing athletes' sport passion and sport enjoyment.

Based on the above research background and motivations, along with the derivation of relevant research hypotheses, and synthesizing related empirical literature, six research hypotheses were proposed.

- H1: Positive leadership has a significant positive effect on sport passion.
- H2: Positive leadership has a significant positive effect on sport enjoyment.
- H3: Positive leadership has a significant positive effect on sport well-being.
- H4: Sport passion has a significant positive effect on sport enjoyment.
- H5: Sport passion has a significant positive effect on sport well-being.
- H6: Sport enjoyment has a significant positive effect on sport well-being.

Research Structure

Based on the above research background and motivations as well as the research hypotheses, this study constructed the theoretical framework. The research structure is shown in Figure 1.

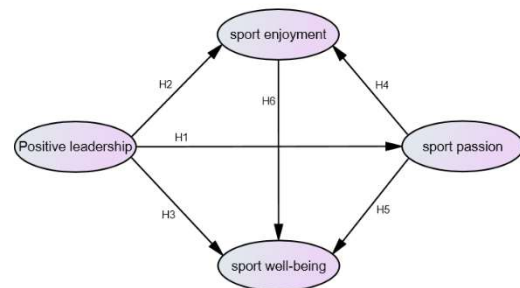


Figure 1 Research Structure

Research Scope and Subjects

This study took high school woodball athletes as the research subjects to explore the effects of woodball coaches' positive leadership on sport passion, sport enjoyment and sport well-being. A questionnaire survey method was adopted, with a total of 300 questionnaires distributed and 296 collected, yielding a response rate of 98%. After eight invalid questionnaires were excluded, there were 288 valid questionnaires, resulting in an effective recover rate of 97%. The number of people included as the final effective sample for the statistical analysis was 288.

Schumacker and Lomax (2004) pointed out that in most Structural Equation Modeling (SEM) studies, the sample size typically ranges from 200 to 500, a

range considered sufficient to obtain stable and appropriate estimation results. Huang (2007) also supports this view, suggesting that such a sample size can enhance the reliability of statistical inferences. Moreover, Marsh and Hau (2003) believe that in structural equation modeling (SEM analysis), larger sample sizes help improve the stability of parameter estimates and the accuracy of model fit, emphasizing that the larger the sample size, the more stable and representative the analysis results.

Research Tools

With positive leadership, sport enjoyment, sport passion and well-being as the research dimensions, this study aimed to explore the correlations of these variables among woodball coaches. The questionnaire was designed using a five-point Likert scale to measure the research subjects' level of agreement, with 1 representing "strongly disagree", 2 representing "disagree", 3 representing "fair", 4 representing "agree", and 5 representing "strongly agree". The questionnaire is divided into two parts: (1) Personal Basic Information; (2) Scales for Research Dimensions, including 16 items for positive leadership, 14 items for sport passion, 11 items for sport enjoyment, and 12 items for sport well-being, used to assess the coaches' perceptions and satisfaction of each dimension.

The questionnaire in this study is divided into two sections:

- (1) Personal Basic Information: The demographic variables in this section were based on the

research tools of Lee et al. (2016), Liu et al. (2017), Chang et al. (2021), and Chao (2024), and have been revised according to the characteristics of this study's research subjects, with a total of 6 items.

(2) Research Dimension Measurement Scales

1. Positive Leadership Scale: This scale was revised from the research scales of scholars such as Cameron (2008), Hsieh (2011), Huang et al. (2021), and Chao (2024), consisting of a total of 16 items.
2. Sport Passion Scale: This scale was revised from the research scales of scholars such as Vallerand et al. (2003), Liu et al. (2017), Huang et al. (2017), and Chang et al. (2021), consisting of a total of 14 items.
3. Sport Enjoyment Scale: This scale was revised from the research scale of Huang (2013) and other scholars, consisting of a total of 11 items.
4. Sport well-being Scale: This scale was revised from the research scales of scholars such as Liu et al. (2016), Chang (2016), Lee et al. (2016), Chang et al. (2021), and Chen (2024), consisting of a total of 12 items.
5. Data Processing and Analysis: This study collected research data using a questionnaire survey method and analyzed the data using SPSS and AMOS statistical software. First, the collected questionnaire data were organized and coded, and incomplete or invalid questionnaires were excluded before subsequent statistical analyses. The analysis

procedures included testing the reliability and validity of the scales, as well as constructing and validating structural equation modeling (SEM) to examine the relationships between research variables and the overall model fit.

Results

Sample Characteristics

The background characteristics of the research subjects are shown in Table 1. In terms of gender, there were 120 males, accounting for 41.7%, and 168 females, accounting for 58.3%, indicating that the majority of the sample were female. Regarding grade distribution, there were 117 tenth-grade students, accounting for 40.6%; 110 eleventh-grade students, accounting for 38.2%; and 61 twelfth-grade students, accounting for 21.2%, showing that the sample was mainly in grades ten and eleven. In terms of weekly team training sessions, 112 participants trained for three times or less per week, accounting for 38.9%; 148 trained four to six times per week, accounting for 51.4%, which was the largest group; and 28 trained for more than seven times per week, accounting for 9.7%. Regarding total weekly training

hours, 62 participants trained for less than 10 hours, accounting for 21.5%; 137 trained for 10 to 14 hours, accounting for 47.6%, which was the largest group; 72 trained for 15 to 20 hours, accounting for 25.0%; and 17 trained for more than 21 hours, accounting for 5.9%. As to years of experience in participating in woodball training, 206 participants had 1 to 3 years of experience (inclusive), accounting for 71.5%; 82 had more than 4 years, accounting for 28.5%, indicating that most subjects had relatively short training experience. Regarding the type of sports team, 193 were regular class students, accounting for 67.0%; and 95 were sports class students, accounting for 33.0%, showing that the sample was mainly composed of regular class students.

Measurement Model Analysis

This study conducted tests of convergent validity for each dimension. The results showed that when the Modification Index (MI) was greater than 3.84, there may be potential covariance or measurement overlap among the items. Based on this criterion, six items with excessively high MI values were deleted according to the test results, which were D5, D7, EE1, EE3, EE5 and EE9 (Chen and Huang, 2006), while the

Table 1. Characteristics of subjects

Background variable	Classification criteria	Sample Number	Percentage %	Cumulative Percentage %
Gender	Male	120	41.7	41.7
	Female	168	58.3	100.0

Grade	Tenth-grade	117	40.6	40.6
	Eleventh-grade	110	38.2	78.8
	Twelfth-grade	61	21.2	100.0
Total weekly team training sessions	3 times or less per week	112	38.9	38.9
	4-6 times per week	148	51.4	90.3
	7 times or more per week	28	9.7	100.0
Total weekly team training hours	Less than 10 hours	62	21.5	21.5
	10-15 hours	137	47.6	69.1
	15-20 hours	72	25.0	94.1
	More than 21 hours	17	5.9	100.0
Years of experience in participating in woodball training	1~3 years	206	71.5	71.5
	More than 4 years	82	28.5	100.0
Sports team type	Regular class	193	67.0	67.0
	Sports class	95	33.0	100.0

remaining items were retained. This was to ensure the measurement quality of the scales.

(1) Convergent Validity

The convergent validity test results indicated that the standardized regression coefficients for the dimensions ranged from 0.75 to 0.93, composite reliability (CR) ranged from 0.88 to 0.95, and average variance extracted (AVE) ranged

from 0.66 to 0.84. These results all met the suggested standards for convergent validity proposed by Bagozzi and Youjae Yi (1988), as well as Hair, Anderson, Tatham, and Black et al. (1998). This indicates that the measurement models for the dimensions of positive leadership, sport enjoyment, sport passion and well-being in woodball coaches have good convergent validity (as detailed in Table 2 to Table 5).

Table 2. Summary of convergent validity and dimension reliability -positive leadership

Items	Standard- ized regres- sion coeffi- cients	Un- standard- ized regres- sion coeffi- cients	S.E.	C.R. (t- value)	p	SMC	C.R.	AVE
B1<---Positive climate	0.91	1.00				0.82	0.94	0.81
B2<---Positive climate	0.89	0.99	0.04	23.31	***	0.79		
B3<---Positive climate	0.90	1.02	0.04	24.16	***	0.81		
B4<---Positive climate	0.91	1.03	0.04	24.97	***	0.84		
B5<---Positive relationships	0.92	1.00				0.84	0.95	0.84
B6<---Positive relationships	0.92	1.02	0.04	26.76	***	0.85		
B7<---Positive relationships	0.92	1.04	0.04	26.71	***	0.84		
B8<---Positive relationships	0.92	1.03	0.04	26.42	***	0.84		
B9<---Positive communication	0.88	1.00				0.78	0.94	0.81
B10<---Positive communication	0.93	1.04	0.04	24.88	***	0.87		
B11<---Positive communication	0.92	1.02	0.04	24.02	***	0.85		
B12<---Positive communication	0.88	1.00	0.05	21.62	***	0.77		

B13<---Positive meaning	0.92	1.00				0.84	0.95	0.83
B14<---Positive meaning	0.92	0.99	0.04	26.75	***	0.85		
B15<---Positive meaning	0.91	0.97	0.04	25.59	***	0.82		
B16<---Positive meaning	0.90	0.98	0.04	25.21	***	0.82		

Source: Compiled by this study.

Table 3. Summary of convergent validity and dimension reliability -sport passion

Items	Standard- ized re- gression coeffi- cients	Unstand- ardized regression coeffi- cients	S.E.	C.R. (t-value)	p	SMC	C.R.	AVE
C1<---Harmonious passion	0.89	1.00				0.63	0.95	0.76
C2<---Harmonious passion	0.88	0.96	0.04	22.15	***	0.56		
C3<---Harmonious passion	0.87	0.98	0.04	21.78	***	0.54		
C4<---Harmonious passion	0.86	0.97	0.05	21.23	***	0.54		
C5<---Harmonious passion	0.88	0.99	0.04	22.26	***	0.58		
C6<---Harmonious passion	0.88	0.97	0.04	22.31	***	0.59		
C7<---Harmonious passion	0.87	0.96	0.04	21.56	***	0.55		

C8<---Obsessive passion	0.80	1.00				0.59	0.93	0.66
C9<---Obsessive passion	0.82	0.93	0.06	16.05	***	0.59		
C10<---Obsessive passion	0.83	1.01	0.06	16.49	***	0.63		
C11<---Obsessive passion	0.84	0.91	0.06	16.16	***	0.59		
C12<---Obsessive passion	0.86	0.97	0.06	16.87	***	0.66		
C13<---Obsessive passion	0.82	0.89	0.06	15.75	***	0.57		
C14<---Obsessive passion	0.75	0.85	0.06	14.19	***	0.45		

Source: Compiled by this study.

Table 4. Summary of convergent validity and dimension reliability -sport enjoyment

Items	Stand- ardized regres- sion co- effi- cients	Unstand- ardized regres- sion coeffi- cients	S.E.	C.R. (t-value)	p	SMC	C.R.	AVE
D1<---Activity based enjoyment	0.82	1.00				0.67	0.92	0.70
D2<---Activity based enjoyment	0.87	0.99	0.06	17.69	***	0.75		
D3<---Activity based enjoyment	0.84	1.01	0.06	16.87	***	0.71		
D4<---Activity based enjoyment	0.87	1.02	0.06	17.75	***	0.75		
D6<---Activity based enjoyment	0.81	0.96	0.06	15.92	***	0.66		
D8<---Perceived competence	0.84	1.00				0.70	0.88	0.66
D9<---Perceived competence	0.87	1.06	0.06	17.29	***	0.75		
D10<---Perceived competence	0.78	0.93	0.06	15.03	***	0.61		
D11<---Perceived competence	0.76	0.83	0.06	14.28	***	0.58		

Source: Compiled by this study.

Table 5. Summary of convergent validity and dimension reliability -well-being

Items	Stand- ardized regres- sion co- effi- cients	Unstand- ardized regres- sion coeffi- cients	S.E.	C.R. (t-value)	p	SMC	C.R.	AVE
EE2 <---Subjective vitality	0.85	1.00				0.72	0.90	0.69
EE4<---Subjective vitality	0.82	1.01	0.06	16.77	***	0.67		
EE6<---Subjective vitality	0.86	1.04	0.06	18.06	***	0.74		
EE7<---Subjective vitality	0.81	1.01	0.06	16.24	***	0.66		
EE8<---Sport enjoyment	0.80	1.00				0.64	0.89	0.68
EE10<---Sport enjoyment	0.84	1.04	0.07	15.78	***	0.70		
EE11<---Sport enjoyment	0.82	1.07	0.07	15.34	***	0.68		
EE12<---Sport enjoyment	0.84	1.06	0.07	15.53	***	0.71		

(2) Discriminant validity

This study used the method of 95% confidence interval for Bootstrap correlation coefficient to calculate the 95% confidence intervals of the correlation coefficients between dimensions. The analysis results showed that none of the

confidence intervals of the dimensions included 1, indicating that there is good discriminant validity between the dimensions (Torkzadeh, Koufteros, and Pflughoeft, 2003). The correlation results are shown in Table 6 to Table 9.

Table 6 95% Confidence intervals for Bootstrap correlation coefficients-positive leadership

			Bias-corrected		Percentile method		
			Estimate	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Positive climate	<-->	Positive relationships	0.67	0.48	0.84	0.48	0.84
Positive climate	<-->	Positive communication	0.76	0.57	0.93	0.57	0.93
Positive climate	<-->	Positive meaning	0.67	0.47	0.84	0.47	0.84
Positive relationships	<-->	Positive communication	0.68	0.49	0.85	0.48	0.84
Positive relationships	<-->	Positive meaning	0.81	0.64	0.93	0.64	0.94
Positive communication	<-->	Positive meaning	0.67	0.48	0.82	0.47	0.83

Source: Compiled by this study.

Table 7. 95% Confidence intervals for Bootstrap correlation coefficients-sport passion

			Bias-corrected		Percentile method		
			Estimate	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Harmonious passion	<-->	Obsessive passion	0.61	0.38	0.76	0.40	0.77

Source: Compiled by this study.

Table 8. 95% Confidence intervals for Bootstrap correlation coefficients-sport enjoyment

			Bias-corrected			Percentile method	
			Esti- mate	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Activity based enjoyment	<-->	Perceived compe- tence	0.69	0.51	0.88	0.50	0.87

Source: Compiled by this study.

Table 9. 95% Confidence intervals for Bootstrap correlation coefficients-well-being

			Bias-corrected			Percentile method	
			Esti- mate	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Subjective vitality	<-->	Sport enjoyment	0.49	0.36	0.60	0.37	0.61

Source: Compiled by this study.

(3) Structural Model Analysis

This study used multiple fit indices to evaluate the overall model fit, including χ^2 , χ^2/df , GFI, AGFI, RMSEA, CFI and PCFI. The analysis results showed: χ^2 and χ^2/df were 1.64, GFI was 0.81, AGFI was 0.80, RMSEA was 0.05, CFI was 0.95, and PCFI was 0.90. According to the standards suggested by

Bagozzi and Youjae Yi (1988), as well as Hair et al. (1998), the above indices all fall within acceptable ranges, indicating that the overall model constructed in this study for woodball coaches' positive leadership, sport enjoyment, sport passion, and well-being, has good model fit, as shown in Table 10.

Table 10. Overall model fit analysis

Fit index	Allowable standard	After model correction	Mode fit determination
χ^2 (Chi-square)	The smaller the better	1664.84	
Ratio of χ^2 to degrees of freedom	<3	1.64	Conforming
GFI	>0.80	0.81	Conforming
AGFI	>0.80	0.80	Conforming

RMSEA	<0.08	0.05	Conforming
CFI	>0.90	0.95	Conforming
PCFI	>0.50	0.90	Conforming

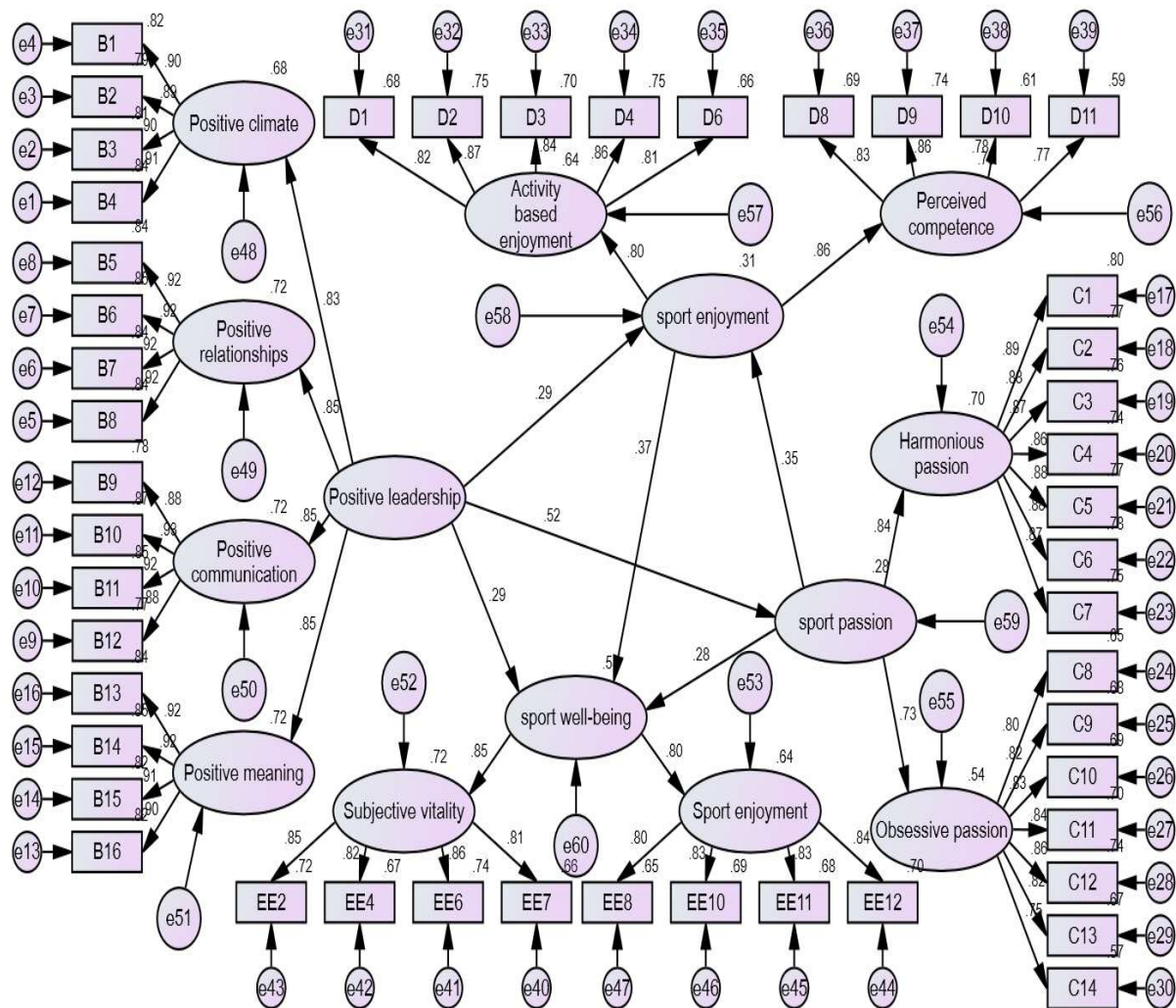


Figure 2. Research Model

Based on the results of the empirical analysis and the verification through Structural Equation Modeling (SEM), all the research hypotheses of this study were supported. Specifically: H1 showed

that positive leadership had a significant positive effect on sport passion; H2 showed that positive leadership had a significant positive effect on sport enjoyment; H3 showed that positive leadership

had a significant positive effect on sport well-being; H4 showed that sport passion had a significant positive effect on sport enjoyment; H5 showed that sport passion had a significant positive effect on sport well-being; H6 showed that sport

enjoyment had a significant positive effect on sport well-being. Overall, significant and positive relationships were observed between the various dimensions, as shown in Table 11:

Table 11. Summary of research hypotheses and test results

Research Hypotheses	Path value	Result of validation
H1: Positive leadership has a significant positive effect on sport passion.	0.52*	Supported
H2: Positive leadership has a significant positive effect on sport enjoyment.	0.29*	Supported
H3: Positive leadership has a significant positive effect on sport well-being.	0.29*	Supported
H4: Sport passion has a significant positive effect on sport enjoyment.	0.35*	Supported
H5: Sport passion has a significant positive effect on sport well-being.	0.28*	Supported
H6: Sport enjoyment has a significant positive effect on sport well-being.	0.37*	Supported

Source: Compiled by this study, * $p < 0.05$

Conclusion and Suggestions

Conclusion

The main purpose of this study was to explore the effects of woodball coaches' positive leadership on sport passion, sport enjoyment, and sport well-being. Through empirical data analysis, the study obtained the following main conclusions:

(1) H1 was supported. Positive leadership had a significant positive effect on sport passion. The results are consistent with the findings of Chao (2024) etc., indicating that coaches can significantly

enhance woodball athletes' engagement and identification with training and competition through positive encouragement, support, care and communication.

(2) H2 was supported. Positive leadership had a significant positive effect on sport enjoyment. The results are consistent with the findings of Chao (2024) etc., showing that the positive leadership behaviors of coaches can create a positive training atmosphere within sport teams, allowing woodball athletes to experience enjoyment and satisfaction in training and competition.

(3) H3 was supported. Positive leadership had a significant positive effect on sport well-being. The results are consistent with the findings of Hsieh and Hsieh (2016) and Su (2021) etc., but inconsistent with the findings of Chao (2024). Positive leadership, including coaches' support, affirmation, and trust toward athletes, helps enhance woodball athletes' positive psychological and vitality experiences in sport participation.

(4) H4 was supported. Sport passion had a significant positive effect on sport enjoyment. The research results are consistent with those of Lee, Tu, and Liu (2016); Chen (2024) and other studies. When woodball athletes have higher engagement, identification and intention for continuous involvement in training and competitions, they can have joy, pleasure and positive experiences during participation.

(5) H5 was supported. Sport passion had a significant positive impact on sport well-being. The research results are consistent with those of Lee, Tu, and Liu (2016); Chang (2021); Chang and Hung (2022); Chen (2024) and other studies. The higher the sport passion felt by woodball athletes, the more they can experience vitality, self-affirmation and satisfaction during sports training and competition, thereby enhancing sport well-being.

(6) H6 was supported. Sport enjoyment had a significant positive impact on sport well-being. The research results are consistent with the findings of Lee et al. (2016); Chang et al. (2021); Chen (2024) and other studies. When woodball

athletes experience more sport enjoyment during training and competitions, it is easier to produce positive emotions and feelings related to well-being.

Suggestions

Suggestions for Training Practice

1. Shift from Focusing on Technical Guidance to Enhancing Athletes' Autonomous Participation. As shown from the results of this study, besides providing guidance on woodball-specific skills, coaches should incorporate real-time positive feedback, encourage proactive autonomous participation, and set goals collaboratively. During the coaching process, coaches can first affirm the athletes' performance and then offer suggestions on areas that can be improved, moderately providing athletes with input or right of choices regarding training content or plans. Such arrangements help increase athletes' identification with training, cultivate their motivation for active and sustained participation, so that they will develop more stable enthusiasm for the sport and have positive and enjoyable emotional experiences.

2. Considering Incorporating Aspects of Sport Enjoyment in Training Arrangements. The purpose of training unavoidably includes improving skills and achieving performance goals. But, if coaches can design training activities in a fun way, such as point-based challenges or peer collaboration competitions, allowing athletes to experience sport enjoyment while also maintaining the quality and challenge of the training, it will further

strengthen athletes' engagement in the sport and their well-being.

3. Considering Conversion Mechanisms of Positive Leadership System and Other Factors on sport well-being. Although research results indicate that positive leadership, sport passion and sport enjoyment can improve sport well-being, student athletes still face pressures beyond training, including academics, further education and peers, which affect their mental state. It is recommended that coaches regularly engage in positive interactions and communication with individual athletes and teams, as well as collaborate with parents and mentors. This approach can quickly grasp the athletes' condition and sources of stress for timely adjustments to training and guidance, balancing both the athletes' performance and their physical and mental development.

Suggestions for Future Research

1. Delving Deeper into Duality of Sport Passion

Vallerand et al. (2003) divided passion into harmonious passion and obsessive passion. This study analyzed sport passion as a whole. However, whether a coach's positive leadership motivates athletes to invest out of their own intention or causes them to participate due to internal or external pressures can be explored by comparing different types of sport passion and their differential effects on sport enjoyment and well-being. Combined with qualitative interviews, this can enhance the construction of the overall structural equation model and deepen theoretical discussions.

2. Using Longitudinal Method for Research

This study adopted a cross-sectional questionnaire survey, which makes it difficult to grasp the dynamic changes in how athletes perceive a coach's positive leadership in relation to sport passion, enjoyment, and well-being. It is recommended that future researchers design longitudinal studies in conjunction with annual training and competition schedules to track and explore the psychological changes of woodball athletes across different periods and corresponding changes in coaches' leadership behaviors, so that the research is more closely aligned with the training context of woodball.

3. Adding Other Variables to Enrich Research Diversity

This study focused on the effects of coaches' positive leadership on athletes' feelings of sport passion, enjoyment, and well-being. However, the development of sport teams today is not limited to the coach's leadership behavior as the sole factor guiding the direction of sport teams. Parental involvement and support, school administrative resources, and policies related to the athletes' future career development all play a crucial role in sport teams. It is recommended that future research include relevant variables and combine multi-group or multi-level analyses, which will help establish a more complete operational model that closely aligns with the structure of woodball teams.

References

- Andrews, F. M., & Withey, S. B. (1976). Social indicators of well-being: Americans' perceptions of life quality.
- Benito Capa, Á., Canteri, K., Grimley, M., Khanka, S., Lajud Desentis, C., Moreno Melgarejo, A.,... & Vasu, T. (2018). Introducing Positive Leadership in the teaching & learning process of Higher Education. *International Journal of Arts and Social Science*, 1(2), 33-42.
- Bernal, M. J., Desentis, C. L., Melgarejo, A. M., & Sepúlveda, J. M. (2019). Positive education: Transferring positive leadership principles to the higher education context. In *ICERI 2019 Proceedings* (pp. 7346-7350).
- Chang, F. C. (2016). Passion, Flow and Well-being in Sport of the College Athletes -- The Mediating Effect of Coach-Athlete Relationship. *Sports Coaching Science*, (4), 67-80.
- Chang, K. H., Hung, C. H. (2022). Predictions of Volleyball Passion, Enjoyment and Involvement on Well-being in Cadets. *Journal of Sport and Recreation Management*, 19(1), 78-94.
- Chang, W. S., Chen, S. Y., Chi, L. K. (2012). The Relationship between Passion and Subjective Well-being in Athletes: The Mediating Role of Positive Emotion. *Physical Education Journal*, 45(4), 301-310.
- Chang, Y. C., Wu, T. Y., Liu, J. D., Chien, W. L., Chen, Y. C. (2021). Relationships between Passion and Well-being in Sport: the Mediating Effect of fun. *Taiwan Journal of Sports Scholarly Research*, (71), 1-18.
- Chao, C. Y. (2024). Relationship between Perceived Coach Positive Leadership, Sports Enthusiasm, Sports Enjoyment and Sense of Happiness of Table Tennis Players. *Journal of Sport and Recreation Management*, 21(2), 53-68.
- Chen, C. A. (2024). A Study on the Relationship among College Students' Passion, Enjoyment and Well-being in Sport - Taking Elective Course Selection in Table Tennis as an Example. *STUST Journal of Humanities and Social Sciences*, (30), 1-33.
- Chen, C. W., Chi, L. K. (2009). The Relationship of Exercise Stages, Psychological Needs and Subjective well-being Among College Students. *Physical Education Journal*, 42(1), 25-37.
- Cheng, Y. W. (2012). The Relationship Between Sport Motivation and Passion Among Different Age Groups of Tae Kwon Do Athletes. Unpublished, master's thesis, National Taiwan Normal University, Taipei City.
- Cherkowski, S. (2018). Positive teacher leadership: building mindsets and capacities to grow wellbeing.

- International Journal of Teacher Leadership, 9(1), 63-78.
- Cherkowski, S., Kutsyuruba, B., & Walker, K. (2020). Positive leadership: Animating purpose, presence, passion and play for flourishing in schools. *Journal of Educational Administration*, 58(4), 401-415.
- Chiu, S. Y. (2009). A Study on the Development of Children's well-being Scale. Unpublished, master's thesis, National Hsinchu University of Education, Hsinchu City.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575.
- Haghpars, K., & Rastgar, A. (2021). Investigating the impact of positive leadership on employee innovative behaviors: The mediating role of job engagement and positive psychological capital in knowledge-based companies. *Organizational Behaviour Studies Quarterly*, 10(3), 143-172.
- Hsieh, C. C. (2011). *Principal Positive Leadership: Theory, Research and Practice*. Taipei City: Higher Education.
- Hsieh, C. C. (2014). A Study of the Relationship among Principal Positive Leadership, School Innovative Culture and Teacher Academic Optimism in Elementary Schools. *School Administrators*, (1), 33-56.
- Hsieh, C. C. (trans) (2011). *Practicing Positive Leadership* (Kim Cameron 原著). Taipei City : Chu Liu Books.
- Hsieh, C. C., Hsieh, Y. C. (2016) A Study on the Relationship between Teacher Positive Leadership and Student Well-being in Elementary Schools: Student Academic Optimism as a Mediator. *Journal of Teacher Education and Professional Development*. 9(3), 29-56.
- Hsieh, C. C., Tsai, Y. F., Weng, H. J. (2019). A Study on the Relationships among the Teacher Positive Leadership and Student Academic Optimism in Elementary Schools: ICT use as a Mediator. *Forum of Educational Administration*, 10 (2), 79-96.
- Huang, F. L. (2014). A Study on Soft Tennis Participational Motivation, Social Support and Pleasure of Nantou County Residents. Unpublished, master's thesis, Dayeh University, Changhua County.
- Huang, H. C., Lee, P. Y., Lo, Y. C., Chen, I. S., & Hsu, C. H. (2021). A study on the perceived positive coaching leadership, sports enthusiasm, and happiness of boxing athletes. *Sustainability*, 13(13), 7199.
- Huang, Y. C., Lai, S. S., Lai, Y. C. (2017). A Study on Relationship between Passion and Sport Enjoyment of Road Running Participants. *Journal of Physical Education and Leisure*, Ling Tung University, (15), 31-50.

- Kendzierski, D., & DeCarlo, K. J. (1991). Physical activity enjoyment scale: two validation studies. *Journal of sport and exercise psychology*, 13(1), 50-64.
- Lai, C. A. (2018). The Effect of Sport Passion and Perceived Ability on Jogger's Sport Enjoyment. Unpublished, master's thesis, National University of Tainan, Tainan City.
- Lai, H.C., Wu, C. S. (2015). A Study on the Relationships Among Learning Areas Leaders' Positive Leadership, Teachers' Teaching Reflection and Innovative Teaching Effectiveness in Junior High Schools. *Curriculum & Instruction Quarterly*, 18(4), 1-27.
- Lee, W. S., Tu, Y. L., Liu, J. D. (2016). Passion and well-being in sport for physical education programs of the college students--the mediating effect of the fun. *Journal of Sport and Recreation Research*, 11(2), 59-77.
- Li, C. H., Chi, L. K., Peng, H. N. (2007). Construct Validity of Passion Scale. *Physical Education Journal*, 40(3), 77-87.
- Liao, L. C., Chen, Y. W., Koo, M. A. (2019). Association between Perception of Positive Leadership and Learning Achievement in Senior Learners. *Journal of Gerontechnology and Service Management*, 7(1), 16-23.
- Lin, M. Y., Lu, J. H. (2001). The Relationship between Athletes, Goal Orientations and the Source of Sport Enjoyment. *Bulletin of Sport and Exercise Psychology of Taiwan*, (1), 57-70.
- Liu, J. D., Hsu, M. H., Cheng, H. K., Lee, W. S. (2017). Passion, fun, and well-being in sport for the students participating Physical Education Classes (P.E.C.) in universities in Taiwan-the mediating effect of positive affect. *NCYU Physical Education, Health & Recreation Journal*, 16(2), 107-120.
- Liu, J. D., Wu, H. C., Lee, W. S. H., Chang, F. C. (2016). The predictive analysis of passion in sport, positive affect, flow, and well-being in sport for optional physical education programs (O.P.E.P.) of the college students. *Taiwan Journal of Sports Scholarly Research*, 61, 63-82.
- Louis, K. S., & Murphy, J. F. (2018). The Potential of Positive Leadership for School Improvement: A Cross-Disciplinary Synthesis. *Nordic Journal of Comparative and International Education (NJCIE)*, 2(2-3), 165-180.
- Lu, L. (1998). The Meaning, Measure, and Correlates of Happiness among Chinese People. *Proceedings of the National Science Council: Humanities and Social Sciences*, 8(1), 115-137.
- Motl, R. W., Dishman, R. K., Saunders, R., Dowda, M., Felton, G., & Pate, R. R. (2001). Measuring enjoyment of physical activity in adolescent

- girls. *American journal of preventive medicine*, 21(2), 110-117.
- Murphy, J., Louis, K. S., & Smylie, M. (2017). Positive school leadership: How the Professional Standards for Educational Leaders can be brought to life: How the Professional Standards for Educational Leaders can be brought to life. *Phi Delta Kappan*, 99(1), 21-24.
- Nel, T., Stander, M. W., & Latif, J. (2015). Investigating positive leadership, psychological empowerment, work engagement and satisfaction with life in a chemical industry. *SA Journal of Industrial Psychology*, 41(1), 1-13.
- Reinboth, M., Duda, J. L., & Ntoumanis, N. (2004). Dimensions of coaching behavior, need satisfaction, and the psychological and physical welfare of young athletes. *Motivation and emotion*, 28(3), 297-313.
- Schimschal, S. E., & Lomas, T. (2019). Gritty Leaders: The Impact of Grit on Positive Leadership Capacity. *Psychological Reports*, 122(4), 1449-1470.
- Smith, M. B., Koppes Bryan, L., & Voldanovich, S. J. (2012). The Counter-Intuitive Effects of Flow on Positive Leadership and Employee Attitudes: Incorporating Positive Psychology into the Management of Organizations. *The Psychologist-Manager Journal*, 15(3), 174-198.
- Su, L. H. (2021). A Study on the Relationship Among Positive Leadership, Sense of Wellbeing and Teachers' Organizational Commitment Using the MASEM Approach. *Journal of Education*, (6), 149-179.
- Ting, A. Y. (2016). The Relationships Between Sport Passion, 2x2 Achievement Goal and Subjective well-being Among Leisure Badminton Participants. Unpublished, master's thesis, National Taiwan Normal University, Taipei City.
- Tsai, J. J., Fu, H. J. (2012). Development of a Physical Activity Enjoyment Scale for High Grade Elementary School Students. *Journal of National Taichung University: Education*, 26(1), 123-141.
- Tseng, Y. C., Tu, M. J. (2021). A study on Positive Leadership of Supervisors and Job Satisfaction and Group Cohesiveness of Caregivers in Infant and Toddler Care Centers in New Taipei City. *Early Childhood Education*, (31), 32-48.
- Vallerand, R. J. (2007). A hierarchical model of intrinsic and extrinsic motivation for sport and physical activity.
- Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Léonard, M.,... & Marsolais, J. (2003). Les passions de l'ame: on obsessive and harmonious passion. *Journal of personality and social psychology*, 85(4), 756.
- Wang, H. C. (2015). The influence of different sport games' involvement

levels on happiness. *Journal of General Education*, (3), 1-28.

Wankel, L. M. (1993). The importance of enjoyment to adherence and psychological benefits from physical activity. *International Journal of Sport Psychology*, 24(2), 151–169.

Wijewardena, N., Samaratunge, R., & Härtel, C. (2014). Creating Better Employees through Positive Leadership Behavior in the Public Sector. *International Journal of Public Administration*, 37(5), 288–298.

Yang, Y. C. (2023). The Relationship between Positive Leadership of Teachers and Learning Effectiveness of Trainees in Vocational Training Programs at the Center for Continuing Education: Appreciative Inquiry as a Mediator. Unpublished, master's thesis, National University of Tainan, Tainan City.