

Structural Relationships of Sources of Sport Confidence and Sport Confidence Affecting Achievement Goals in Thai Collegiate Combat Sport Athletes

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Abstract Sport confidence and achievement goal orientation are crucial determinants of performance in martial arts, where athletes face intense psychological and physical demands. Understanding how confidence is developed and linked to achievement goals is particularly important for collegiate athletes in Thailand, where cultural values emphasize teamwork and respect within the martial arts community. Unlike previous studies conducted in Western contexts, this research focuses on Thai collegiate combat sport athletes, offering culturally specific insights into how confidence mechanisms function in collectivist settings. A total of 360 athletes aged 18–25 years who participated in the 49th Thailand University Games completed standardized questionnaires on Sources of Sport Confidence (SSC), Sport Confidence (SC), and Achievement Goal Orientation (AGO). Data were analyzed using Structural Equation Modeling, and the model showed a good fit to the empirical data. Results revealed that SC had a direct positive effect on AGO, while SSC influenced AGO indirectly through SC, explaining 36.8% of its variance. These findings highlight SC as the key psychological mechanism linking confidence sources to goal achievement, suggesting that coaches should prioritize strategies to enhance athletes' confidence through structured preparation and supportive environments.

Keywords Sources of Sport Confidence, Sport Confidence, Achievement Goal Orientation, Structural Equation Modeling, Thai Combat Sport Athletes

1. Introduction

Sport confidence is a fundamental psychological construct that significantly influences athletic performance and competitive outcomes. It refers to an individual's belief in their ability to attain desired objectives within the sporting context [1]. This concept aligns with Bandura's Self-Efficacy Theory [2], which posits that perceived capability governs motivation, emotional regulation, and behavioral execution. Importantly, sport confidence is dynamic rather than static, and it evolves through accumulated training experiences, competitive exposure, and environmental reinforcement [3,4]. Empirical evidence indicates that collegiate athletes' confidence originates from multiple sources, including coach leadership, vicarious experiences, demonstrated competence, and accumulated expertise, each exerting differential effects on confidence acquisition and retention [5].

To clarify these determinants, Vealey et al. [3] proposed the Sources of Sport Confidence (SSC) framework, comprising three overarching dimensions: Achievement, Self-Regulation, and Social Climate. These dimensions reflect athletes' past accomplishments and mastery, their preparedness and self-management skills, and the social environment surrounding their training and competition experiences. Prior research highlights that preparation, expertise, and supportive leadership play important roles in sustaining sport confidence [6,7]. Sport confidence itself is also considered multidimensional, encompassing qualities such as Persistence, Composure, Decisiveness, and Physical Readiness, which collectively enhance an athlete's ability to perform effectively under pressure [8,9].

SSC and SC are conceptually connected to Achievement Goal Orientation (AGO), which distinguishes between Task Orientation, based on self-referenced improvement, and Ego Orientation, based on normative comparison [10]. Athletes with high sport confidence and supportive sport environments tend to adopt task-oriented goals, contributing to intrinsic motivation, resilience, and long-term sport engagement [11,12].

Within the Thai cultural context, the development of sport confidence may follow distinctive pathways shaped by collectivist values, hierarchical respect for authority figures, and strong community-oriented norms embedded in martial arts traditions. Thai martial arts training environments, particularly in Taekwondo, Judo, and Muay Thai, emphasize discipline, humility, and group harmony, which may influence how athletes evaluate their competence, interpret coaching feedback, and regulate confidence. However, most existing research on SSC, SC, and AGO has been conducted in Western contexts characterized by individualistic achievement values. As a result, it remains unclear whether the relationships among these constructs operate similarly among Thai collegiate martial arts athletes, who train within a collectivist environment emphasizing discipline, hierarchical coach-athlete dynamics, and community cohesion [13,14,15]. Although SSC and SC have been extensively investigated in Western sport contexts, research examining their relationship with AGO in Thai collegiate martial arts settings is still very limited, highlighting the need for empirical studies that account for cultural influences on sport confidence and motivational orientation.

Building upon the conceptual foundations of sport confidence, achievement motivation, and culturally shaped athlete development, recent research has provided additional evidence that further contextualizes these psychological processes among competitive athletes. Goal orientation, a core component linked to confidence development, remains a critical predictor of emotional regulation, persistence, and performance quality. Empirical findings indicate that athletes with strong

task-oriented goals tend to demonstrate superior self-regulation and competitive readiness, reinforcing its role as a motivational driver that aligns with sport confidence mechanisms [16]. Similarly, academic and athletic success among student-athletes is shaped by psychological determinants such as self-efficacy, motivation, and supportive coaching environments, reflecting the intertwined relationship between confidence, goal structures, and performance outcomes [17].

Achievement motivation also plays a substantial role in shaping confidence and sport engagement. Research among competitive tennis athletes demonstrates that striving for success, persistence, and self-confidence are mutually reinforcing psychological elements that contribute to athletic achievement [18]. Furthermore, mental health indicators are closely associated with pre-competitive anxiety and confidence levels. Athletes with greater psychological well-being and emotional stability exhibit lower anxiety, suggesting that mental health operates as both a precursor to and a consequence of sport confidence [19].

Broader structural analyses using path modeling have shown that motivation, resilience, and perceived social support interact to predict athletic achievement, confirming that psychological constructs function interdependently rather than in isolation [20]. Similar patterns are observed in youth sport environments, where confidence in motor skill testing is strongly influenced by clear instruction, feedback, and tailored task progression, underscoring the importance of structured learning environments in fostering early confidence development [21].

Research on sources of sport confidence further reveals that mastery experiences, leadership, and social support are dominant contributors across university athletes. However, contextual demographic variables often fail to mediate these relationships, implying that confidence may be driven more by psychological and environmental factors than by personal background characteristics [5]. Variations in physical performance indicators, such as speed, endurance, and muscular power, also demonstrate that confidence may interact with physiological readiness, especially in combat sports where physical dominance contributes to perceived competence [22].

Interpersonal contexts including parenting style, social support networks, and team environments, have also been found to significantly determine athletes' confidence and performance outcomes. Importantly, self-confidence serves as a mediator that translates external support into measurable achievement [23]. Finally, mental toughness, encompassing resilience, composure, and emotional control, has been consistently associated with enhanced performance and adaptability, reinforcing its role as a crucial extension of confidence in high-pressure scenarios [24].

Collectively, these studies deepen the understanding of sport confidence within diverse sporting and cultural contexts. However, most of this evidence originates from Western populations, and it remains unclear whether the theoretical relationships among SSC, SC, and AGO operate similarly among Thai collegiate martial arts athletes, who train within a collectivist cultural environment that emphasizes discipline, hierarchy, and community cohesion. This represents a meaningful gap in the literature, particularly given the unique physical, psychological, and cultural demands experienced by combat sport athletes in Thailand.

Therefore, this study aims to examine the structural relationships between Sources of Sport Confidence (SSC), Sport Confidence (SC), and Achievement Goal Orientation (AGO) among Thai collegiate combat sport athletes. Specifically, it seeks to determine whether SSC directly or indirectly influences AGO through SC, thereby extending the generalizability of sport confidence theory to a Southeast Asian cultural setting and providing evidence-based guidance for athlete development programs. Research Question

Do Sources of Sport Confidence (SSC) influence Achievement Goal Orientation (AGO) directly and indirectly through Sport Confidence (SC) among Thai collegiate combat sport athletes?

2. Materials & Methods

2.1. Participants

The target population consisted of collegiate combat sport athletes participating in the 49th Thailand University Games (“Nontri Games 2024”), held from January 27 to February 5, 2024, at Kasetsart University, Kamphaeng Saen Campus. A total of 1,524 athletes from six combat sports (Taekwondo, Jiu-Jitsu, Thai Fencing, Judo, Amateur Boxing, and Karate) constituted the population.

A purposive and convenience sampling strategy was applied, as athletes were recruited based on their availability at the event venues and willingness to participate. The required sample size was calculated using Yamane’s formula [25] with a 0.05 margin of error, yielding a minimum of 317 athletes. To ensure sufficient statistical power for SEM and account for incomplete responses, 360 athletes were recruited. This number meets recommended SEM sample size guidelines (≥ 200 –300) [26].

Control variables including gender, sport type, and years of competitive experience, were recorded to account for their potential influence on sport confidence and achievement goal orientation.

Participant demographics were as follows: 218 males (60.6%) and 142 females (39.4%), aged 18–25 years. Taekwondo athletes comprised the largest subgroup (25.8%). Nearly half reported 6–10 years of experience (45.0%), and 48.3% were first-time competitors at the university games, while 33.1% had prior national-level experience.

2.1.1. Inclusion Criteria

1. Collegiate combat sport athletes aged 18–25 years who participated in the Nontri Games 2024
2. Possession of prior training and competitive experience in combat sports
3. Ability to comprehend and complete the questionnaire accurately
4. Willingness to participate voluntarily

2.1.2. Exclusion Criteria

1. Reluctance or lack of interest in participating in the study.
2. Presence of health conditions that preclude the completion of the questionnaire.
3. Inability to provide reliable or valid responses.

The above screening criteria ensure that the physical conditions, training backgrounds and experimental compliance of the research subjects are basically consistent. Prior to participating in the study, all participants were given an explanation of study objectives and procedures, and provided written informed consent. Ethical approval was granted by the Human Research Ethics Committee of Mahasarakham University, Thailand (Approval No. 294-266/2024).

2.2. Research Instruments

The study employed three standardized questionnaires to assess sources of sport confidence, sport confidence level, and achievement goal orientation. All instruments were pilot-tested with 30 athletes from the Thailand National Sports University (Sisaket and Mahasarakham campuses) to evaluate reliability. Detailed item structures and scoring procedures are provided in Appendixes A, B and C.

1. Sources of Sport-Confidence Questionnaire (SSCQ) was developed by Vealey et al. [3] and comprises 43 items. These items are organized into three primary components, each containing specific indicators. Measure the sources of athletes' confidence across achievement, self-regulation, and social-cultural dimensions using a 7-point Likert scale (1 = least important to 7 = most important). The pilot test demonstrated high internal consistency analysis using Cronbach's alpha yielded an overall reliability of 0.962, with component reliabilities ranging from 0.825 to 0.968, indicating high and acceptable levels. Test-retest reliability, assessed using the Intraclass Correlation Coefficient (ICC), showed an overall ICC of 0.957, demonstrating that the SSCQ is highly stable and suitable for assessing athletes' sport confidence.

2. Sports Confidence Questionnaire (SCQ) was developed by Jang et al. [8]. The SCQ contains 24 items divided into four components: Persistence, Hesitation, Calm, and Physical Prime. A 5-point Likert scale was used (1 = least confident to 5 = most confident). The pilot test demonstrated high internal consistency analysis using Cronbach's alpha yielded an overall reliability of 0.947, with component reliabilities ranging from 0.882 to 0.965. Test-retest reliability yielded an ICC of 0.951. These results indicate that the SCQ demonstrates high reliability in both internal consistency and stability, making it appropriate for measuring athletes' sports confidence.

3. Achievement Goal Orientation Questionnaire (AGO): The AGO was assessed using the Task and Ego Orientation in Sport Questionnaire (TEOSQ) [10,27,28], which contains 13 items divided into two components: Ego Orientation and Task Orientation. Items were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with mean scores interpreted across five levels, from very low to very high. The pilot test demonstrated high internal consistency analysis using Cronbach's alpha yielded an overall reliability of 0.935 for the overall questionnaire, with component reliabilities ranging from 0.891 to 0.958. Test-retest reliability assessed via ICC was 0.947. These results indicate that the TEOSQ is highly reliable in both internal consistency and stability, making it suitable for assessing athletes' achievement goal orientation in sports.

2.3. Procedure

- Phase 1: Instrument Development

The development and refinement of the questionnaires to measure sources of sport-confidence, sports confidence,

and achievement goal orientation in Thai combat sport athletes began with obtaining permission to use the original instruments: SSCQ [3], Sports Confidence Questionnaire [8], and TEOSQ [28].

The questionnaires were then translated into Thai using a back-translation process. Three experts translated the original English versions into Thai, and the translations were synthesized into a single version suitable for the combat sports context. The Thai version was then translated back into English to ensure consistency with the original instruments.

Subsequently, the questionnaires were reconsidered by experts to assess the clarity, appropriateness, and meaning of the items. Content validity was evaluated using a preliminary sample of 30 athletes, and reliability was assessed using Cronbach's alpha. The final instruments included:

- SSCQ: 9 components, 43 items, 7-point scale
- Sports Confidence Questionnaire: 4 factors, 24 items, 5-point scale
- TEOSQ: 2 dimensions (Task and Ego), 13 items, 5-point scale

The instruments showed acceptable quality, with Item-Objective Congruence (IOC) values ranging from 0.5 to 1.0 and Cronbach's alpha ≥ 0.70 . Correlation coefficients were also ≥ 0.70 . For the pilot sample of 30 athletes, the overall reliability of the SSCQ was 0.962.

- Phase 2: Quantitative Research

The second phase involved examining the structural relationships among sources of sport-confidence, self-confidence, and achievement goal orientation. This quantitative study aimed to investigate the causal relationships among these variables.

Data were collected from 360 combat sport athletes. The suitability of the correlation matrix was assessed using Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) measure (>0.50). Path analysis was then conducted, with non-significant paths removed to refine the model.

The primary theoretical framework followed the Task and Ego Orientation theory, with the main paths structured as:

Sources of Sport-Confidence \rightarrow Self-Confidence \rightarrow Achievement Goal Orientation

The variables used in the model were:

- SSCQ: 3 main variables, 9 indicators, 39 items (Achievement, Self-Regulation, Social Culture)
- Sports Confidence Questionnaire: 4 factors, 15 items
- TEOSQ: 2 dimensions (Task and Ego), 13 items

2.4. Data Collection

The researcher began by obtaining ethical approval for human research from the Faculty of Education, Mahasarakham University, to protect the rights of participants. Approval was granted on November 15, 2023 (No. 478-524-2023). Subsequently, coordination was made with the organizers of the Thailand University Games, and an official letter of introduction was requested to access the data collection sites. The researcher met with the participants to explain the research objectives, data collection procedures, and voluntary participation, and participants signed informed consent forms to ensure confidentiality. The developed questionnaires, translated into Thai, were first pilot-tested with a preliminary sample to clarify any misunderstandings. Data collection was then conducted in coordination with event organizers, sports teams, and relevant associations, supported by two research assistants trained in data collection procedures. Appropriate time slots, such as before competitions or during breaks/practice sessions, were scheduled for participants to complete the questionnaires, which took approximately 10–15 minutes. After all data were collected, the questionnaires were checked for completeness, and participants were thanked for their participation. The collected data were then prepared for subsequent analysis.

2.5. Data Analysis

Data analysis was conducted using SPSS version 21.0 and Structural Equation Modeling (SEM). Confirmatory Factor Analysis (CFA) was performed to examine the validity of the measurement models. Additionally, correlation coefficients were calculated to assess the relationships among Sources of Sport-Confidence (SSC), Sports Confidence (SC), and Achievement Goal Orientation (AGO).

Model fit indices, including Chi-Square, RMSEA, CFI, and GFI, were evaluated to determine the adequacy of the

structural model. Direct effects (DE), indirect effects (IE), and total effects (TE), as well as predictive coefficients (R²), were analyzed to understand the causal relationships among all variables. The statistical significance level was set at $p = 0.05$.

The analysis of the causal relationships among Sources of Sport-Confidence, Sports Confidence, and their effects on Achievement Goal Orientation in Thai collegiate martial arts athletes is presented in two parts as follows:

- **Part 1:** Examination of the Measurement Model Validity of Latent Variables

This section involves examining the validity of the measurement model through Confirmatory Factor Analysis (CFA), which is divided into two aspects:

Aspect 1: Assessment of Model Fit

Model fit was evaluated by comparing the model fit indices against established criteria. The criteria used in this study were based on Hair et al. [26], as shown in Table 1.

Part 2 examines the quality of the parameter values in the measurement model, also known as Construct Validity. Construct validity is assessed based on:

1. Factor loadings – At a minimum, factor loadings should be statistically significant. Loadings between 0.50 and 0.69 are considered good, while values of 0.70 or higher are considered excellent (ideally).
2. Average Variance Extracted (AVE) – Values of 0.50 or higher are considered good.
3. Construct Reliability (CR) – Values should be 0.70 or higher ([26], pp. 675–676).

The measurement model examined included three latent variables:

1. Sources of Sports Confidence (SSC)
2. Sports Confidence (SC)
3. Achievement Goal Orientation (AGO)

The detailed analysis results are presented in Table 2.

Table 1. Goodness-of-Fit Indices and Evaluation Criteria for Model Fit

Goodness-of-Fit Statistics	Criteria for $n > 250$ and < 12 Variables	Criteria for $n > 250$ and $12-29$ Variables
Chi-square (χ^2)	Insignificant p-values even with good fit	Significant p-values expected
Normed Chi-square (χ^2/df)	< 3	< 3
CFI	≤ 0.96	> 0.94
RMSEA	< 0.07	< 0.07
SRMR	Biased upward	0.08
GFI	≤ 0.90	≤ 0.90

Table 2. Model Fit Indices for Sources of Sports Confidence, Sports Confidence, and Achievement Goal Orientation in Thai Collegiate Martial Arts Athletes (n = 360)

Goodness of Fit Statistics	Covariance Model Values	Second-Order Model Values
Chi-square (χ^2)	SSC: 11.867 (0.294)	SSC: 11.867 (0.294)
	SC: 159.000 (0.000)	SC: 159.000 (0.000)
	AGO: 130.660 (0.000)	AGO: 130.660 (0.000)
Group 1: Absolute fit measures		
Normed chi-square ($\chi^2/df \leq 3$)	SSC: 1.187	SSC: 1.187
	SC: 2.695	SC: 2.695
	AGO: 2.513	AGO: 2.513
GFI (≥ 0.90)	SSC: 0.993	SSC: 0.993
	SC: 0.944	SC: 0.944
	AGO: 0.907	AGO: 0.907
RMSEA (< 0.07)	SSC: 0.023	SSC: 0.023
	SC: 0.069	SC: 0.069
	AGO: 0.065	AGO: 0.065
SRMR (< 0.08)	SSC: n/a	SSC: n/a
	SC: 0.080	SC: 0.080
	AGO: 0.005	AGO: 0.005
Group 2: Incremental fit indices		
NFI (≥ 0.90)	SSC: 0.926	SSC: 0.926
	SC: 0.984	SC: 0.984
	AGO: 0.997	AGO: 0.997
CFI (≥ 0.92)	SSC: 0.966	SSC: 0.966
	SC: 0.984	SC: 0.984
	AGO: 0.997	AGO: 0.997
Group 3: Parsimony fit indices		
AGFI (≥ 0.85)	SSC: 0.854	SSC: 0.856
	SC: 0.944	SC: 0.944
	AGO: 0.907	AGO: 0.907

3. Results

As shown in Table 2, the assessment of construct validity for the measurement models of the three variables, Sources of Sports Confidence (SSC), Sports Confidence (SC), and Achievement Goal Orientation (AGO), using Confirmatory Factor Analysis (CFA), revealed that all model fit indices for the three measurement models met the established criteria. This indicates that the theoretical models are consistent with the empirical data.

As shown in Table 3, the assessment of the construct validity of the measurement models indicated the following: The measurement model for Sources of Sports Confidence (SSC) showed factor loadings ranging from 0.576 to 0.990, which fall within the range of good to ideal levels. Construct reliability (CR) values ranged from 0.700 to 0.914, all of which met the recommended criteria, while the Average Variance Extracted (AVE) values ranged from 0.530 to 0.748, meeting the threshold for an acceptable

level of convergent validity.

For the Sports Confidence (SC) measurement model, factor loadings ranged from 0.295 to 0.948. Most indicators met the minimum threshold, and although some loadings were slightly below 0.50, they were statistically significant and deemed acceptable. CR values ranged from 0.755 to 0.936, meeting the evaluation criteria, and AVE values ranged from 0.461 to 0.746. Although a few values were slightly below 0.50, they were close to the recommended threshold and considered acceptable [29].

Regarding the Achievement Goal Orientation (AGO) measurement model, factor loadings ranged from 0.925 to 0.983, indicating good to ideal levels. CR values ranged from 0.985 to 0.990, meeting the evaluation criteria, and AVE values ranged from 0.907 to 0.942, reflecting good convergent validity.

In summary, all three measurement models demonstrated satisfactory goodness-of-fit indices and construct validity. This indicates that the instruments used

in this study are reliable and of sufficient quality to effectively measure the latent constructs among Thai collegiate martial arts athletes.

- **Part 2:** Analysis of the Causal Relationships of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO) in Collegiate Martial Arts Athletes

The analysis proceeded in the following steps.

3.1. Examination of the Relationship Levels of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO)

This step investigated the relationship levels of SSC and SC on AGO among collegiate martial arts athletes. The

analysis aimed to assess the correlation levels in accordance with the conditions for causal relationship analysis.

As shown in Table 4, the correlation coefficients among the 36 pairs of variables under study ranged from 0.231 to 0.988. All correlations were statistically significant at the 0.01 level. These results indicate that the overall relationships among the variables are appropriate and suitable for subsequent causal relationship analysis.

3.2. Examination of the Causal Relationships of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO) in Collegiate Martial Arts Athletes

The analysis was conducted according to the steps shown in Figure 1.

Table 3. Parameter estimates, Average Variance Extracted (AVE), and Construct Reliability (CR) of the measurement models for Sources of Sports Confidence, Sports Confidence, and Achievement Goal Orientation in Thai collegiate martial arts athletes

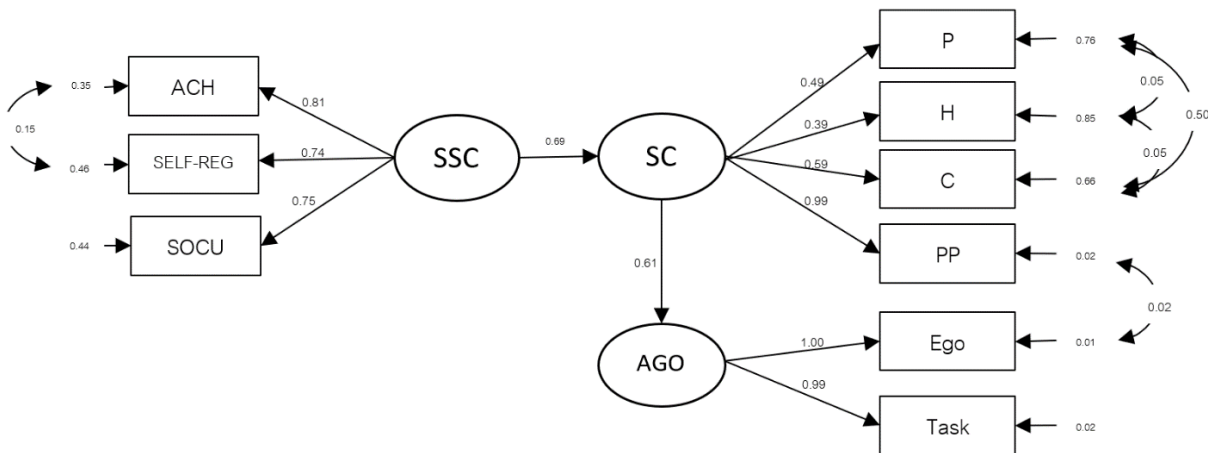
Construct	Component/ Item	Factor loading	R ²	Measurement error	t-value	Reliability	AVE	CR
SSC (2nd order)	Neu	0.990**	0.980	0.20	20.13	0.980	0.745	0.896
	Extra	0.873**	0.762	0.238	15.19	0.762		
	Open	0.701**	0.491	0.509	12.16	0.491		
ACH (1st order)	M	0.955**	0.912	0.088	n/a	0.912	0.748	0.854
	DA	0.764**	0.584	0.416	13.33	0.584		
SELF-REG	PMP	0.853**	0.728	0.272	n/a	0.728	0.530	0.700
	PSP	0.576**	0.332	0.668	10.30	0.332		
SOCU	SS	0.814**	0.663	0.337	n/a	0.663	0.682	0.914
	CL	0.866**	0.750	0.250	17.27	0.750		
	VE	0.809**	0.654	0.346	17.45	0.654		
	EC	0.905**	0.819	0.181	15.13	0.819		
	SF	0.724**	0.524	0.476	15.6	0.524		
SC (2nd order)	P	0.816**	0.666	0.334	15.87	0.666	0.461	0.755
	H	0.295**	0.087	0.913	5.86	0.087		
	C	0.824**	0.679	0.321	13.80	0.679		
	PP	0.641**	0.411	0.589	10.17	0.411		
AGO (2nd order)	Ego	1.000 (fixed)	n/a	n/a	n/a	n/a	0.942	0.990
	Task	1.000**	1.000	0	61.69	1.000		

Note: ** indicates statistical significance at $p < .01$, * indicates statistical significance at $p < .05$, and n/a indicates parameters fixed at 1.00 with no t-value.

Table 4. Correlation Coefficients Among Variables: The Relationship of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO) in Thai Collegiate Martial Arts Athletes

Latent Variables		AGO		SC				SSC		
Observe Variables		Ego	Task	P	H	C	PP	ACH	Self-Reg	SOCU
AGO	Ego	1.000								
	Task	0.988**	1.000							
SC	P	0.247**	0.243**	1.000						
	H	0.245**	0.246**	0.242**	1.000					
	C	0.368**	0.363**	0.785**	0.271**	1.000				
	PP	0.615**	0.597**	0.486**	0.382**	0.583**	1.000			
SSC	ACH	0.231**	0.235**	0.358**	0.327**	0.354**	0.546**	1.000		
	Self-Reg	0.231**	0.230**	0.296**	0.243**	0.322**	0.501**	0.750**	1.000	
	SOCU	0.256**	0.255**	0.299**	0.279**	0.321**	0.509**	0.603**	0.552**	1.000
\bar{X}		3.949	3.896	3.720	3.625	3.718	4.098	5.576	5.709	5.654
SD		0.937	0.901	0.961	1.103	0.855	0.666	0.931	0.934	0.681
N		360	360	360	360	360	360	360	360	360

Note: **p < .01, *p < .05



Chi-Square = 29.251, df = 19, p-value = 0.062, RMSEA = 0.039

Figure 1. Parameter Estimates of the Causal Relationship Model of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO)

3.2.1. Examination of Model Fit

The model fit was evaluated using the same criteria as those presented in Table 1.

The results of the analysis are detailed as follows:

Table 5. Model Fit Indices for the Causal Relationship Model of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO)

Index	Value	Interpretation
χ^2 Statistic	29.251 (p = 0.062)	Passed
χ^2/df	1.540	Passed
RMSEA	0.039	Passed
CFI	0.996	Passed
GFI	0.982	Passed

As shown in Table 5, the indices used to assess the model fit indicate that the Chi-Square statistic is 29.251 (p = 0.062). The Normed Chi-Square (χ^2/df) is 1.540. The Root Mean Square Error of Approximation (RMSEA) is 0.039, the Comparative Fit Index (CFI) is 0.996, and the Goodness-of-Fit Index (GFI) is 0.982. All indicators discover the established criteria for acceptable model fit. Overall, these results indicate that the causal relationship model of Sources of Sports Confidence (SSC) and Sports Confidence (SC) affecting Achievement Goal Orientation (AGO) is consistent with the empirical data. Subsequent step involves considering the direct effects, indirect effects, and predictive coefficients of the model.

3.2.2. Examination of Direct Effects, Indirect Effects, and Predictive Coefficient

As shown in Table 6, it was found that Sports Confidence (SC) exerted the greatest total effect on Achievement Goal Orientation (AGO), with a total effect size of 0.606, which was positive and statistically significant at the 0.01 level. Sources of Sports Confidence (SSC) had a total effect size of 0.418, also positive and statistically significant at the 0.01 level.

Table 6. Direct Effects (DE), Indirect Effects (IE), Total Effects (TE), and Predictive Coefficients (R^2) of the Causal Relationship Model of Sources of Sports Confidence (SSC) and Sports Confidence (SC) Affecting Achievement Goal Orientation (AGO)

DV IV	SC			AGO		
	DE	IE	TE	DE	IE	TE
SSC	0.689** (0.059)	-	0.689** (0.059)	-	0.418** (0.064)	0.418** (0.064)
SC	-	-	-	0.606** (0.145)	-	0.606** (0.145)
R^2	47.50			36.80		

Statistical significance is at the 0.01 level. Values in parentheses indicate standard errors (SE).

From the perspective of causal relationships, SC had a direct positive effect on AGO, with an effect size of 0.606, significant at the 0.01 level. SSC exerted an indirect positive effect on AGO through SC, with an effect size of 0.418, also significant at the 0.01 level. Together, SC and SSC explained 36.80% of the variance in AGO.

4. Discussion

The analysis of the causal model examining the relationships between Sources of Sport Confidence (SSC), Sport Confidence (SC), and Achievement Goal Orientation (AGO) among Thai collegiate martial arts athletes demonstrated a satisfactory model fit to the empirical data. SC exerted a direct and significant positive effect on AGO ($\beta = 0.606$, $p < .01$), while SSC indirectly influenced AGO through SC ($\beta = 0.418$, $p < .01$). Together, SSC and SC explained 36.80% of the variance in AGO, underscoring SC as a central psychological determinant of goal-directed behavior in competitive sport contexts. This finding aligns with the Sport Confidence Model proposed by Vealey [1], which states that confidence develops through personal achievement experiences, self-regulation, and social support, and subsequently guides behavior and performance-related goals.

Importantly, the present study extends this framework to a collectivist Southeast Asian cultural context, where athletes often internalize feedback and affirmation from coaches and peers as part of their self-concept. This process aligns with interdependent self-construal and cultural modulation of motivation [2,6,30]. In the Thai

collegiate martial arts environment, hierarchical coach-athlete relationships and group-based identity structures play an especially prominent role in shaping how athletes perceive and regulate confidence. Thus, SSC may be translated into AGO primarily through the internalization of social approval and relational expectations, highlighting a distinct culturally embedded mechanism.

The present findings also align with prior work indicating that combat sport athletes derive confidence from structured preparation routines and social reinforcement [5,30]. However, the mediating strength of SC observed in this sample appeared stronger than typically reported in Western contexts. This pattern is consistent with research demonstrating that Thai athletes' confidence and goal pursuit are strongly tied to coach approval and collective harmony [14,31]. By contrast, Western research often emphasizes mastery experiences and intrinsic self-efficacy as dominant predictors [4,31]. Thus, the current results suggest both universal and culture-specific features of the confidence motivation relationship.

The robust association between SC and AGO also reflects core propositions of Achievement Goal Theory [11,28,32], which proposes that athletes with higher confidence are more likely to adopt task-oriented goals emphasizing personal growth rather than ego-oriented goals focused on outperforming others. This pattern aligns with meta-analytic evidence demonstrating that heightened sport confidence predicts mastery-oriented motivation [13]. Within Thai martial arts culture, values such as discipline, respect, perseverance, and emotional composure are central to athlete development and may amplify the confidence task orientation linkage [15,16,33]. Supporting this interpretation, research on martial arts athletes indicates that stable confidence facilitates resilience, adaptive coping, and sustained motivation under competitive pressure [17,34].

These findings carry practical implications for athlete development. First, coaches should implement confidence-building strategies that emphasize supportive feedback, collective motivation, and structured performance routines. This aligns with literature showing that family environment, coaching climate, and competence-oriented reinforcement shape athletes' psychological growth [6,35,36,37]. Second, incorporating self-regulation training, including goal-setting, emotional control, imagery, and pre-competition routines, can strengthen confidence maintenance and goal focus [2,9,38]. Third, mindfulness-based and reflective training approaches can enhance attentional control and reduce performance anxiety, supporting sustained confidence under pressure [39,40,41]. Athlete development programs should therefore integrate psychological skill training as a systematic component, not merely supplemental preparation.

This study also contributes to cross-cultural sport

psychology by demonstrating that Vealey's model is structurally applicable beyond Western contexts, but the mechanisms of confidence formation differ across cultures [42,43,44,45]. Thai athletes' confidence development appears grounded in social harmony, respect-based hierarchy, and collective identity, reinforcing the need for culturally responsive psychological interventions in sport performance programs.

However, certain limitations must be acknowledged. First, reliance on self-report measures introduces the possibility of response biases, including social desirability [46]. Second, the cross-sectional design precludes strong causal inference; future research should use longitudinal or intervention-based designs to examine developmental changes in SSC and SC [47]. Third, the sample was drawn from athletes in a single national context, potentially limiting generalizability. Broader sampling across competitive levels, regions, and sport disciplines would enhance external validity [48,49,50]. Despite these limitations, the present study offers novel empirical insight into how confidence functions as a culturally shaped motivational determinant among Thai collegiate martial arts athletes.

5. Conclusions

This study investigated the structural relationships among Sources of Sport Confidence (SSC), Sport Confidence (SC), and Achievement Goal Orientation (AGO) among Thai collegiate martial arts athletes. The findings revealed that SC had a direct positive effect on AGO, while SSC influenced AGO indirectly through SC. Together, these two variables explained a substantial proportion of the variance in AGO, confirming that SC functions as the key psychological mechanism linking external confidence sources to athletes' achievement-oriented behaviors.

Unlike previous studies conducted primarily in Western contexts, this research provides culture-specific insights from Thai collegiate combat athletes, extending the generalizability of the sport confidence framework to a Southeast Asian context. The results underscore that in collectivist cultures such as Thailand, environmental and social factors particularly coach support, teamwork, and community relationships, play a crucial role in shaping

confidence and guiding athletes toward task-oriented goals.

Nevertheless, several limitations should be acknowledged. The study relied on self-report data, which may be affected by response bias or subjective interpretation. Additionally, data collection was limited to a single national event, potentially constraining the generalizability of findings to other sports or competition levels. Although these limitations were mitigated through anonymity and methodological rigor, they suggest caution in interpreting causal directionality.

Future research should incorporate mixed-method designs combining quantitative modeling with qualitative interviews or coach assessments to capture deeper contextual factors influencing sport confidence. Incorporating objective performance metrics or longitudinal designs could further clarify how SSC and SC evolve over time and contribute to goal achievement. Comparative cross-cultural studies are also recommended to examine how confidence mechanisms differ across sport types and cultural environments.

In summary, this study affirms the central role of sport confidence as a bridge between confidence sources and achievement goal orientation in Thai collegiate combat sports. Developing structured, culturally sensitive programs to strengthen athletes' confidence may enhance both performance outcomes and long-term motivation in competitive sports settings.

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Appendix

Appendix A. Sources of Sport-Confidence Questionnaire (SSCQ) (Vealey et al., 1998)

The SSCQ consists of 43 items rated on a 7-point Likert scale indicating the perceived importance of each source of sport confidence.

Scoring Criteria		
1	=	Not at all important
2	=	Not very important
3	=	Slightly important
4	=	Moderately important
5	=	Very important
6	=	Extremely important
7	=	Highest importance

The Consists of 9 factors and 43 items that correspond to each subscale are as follows:

1.	Mastery (items 1 to 5)
2.	Demonstration of ability (items 6 to 11)
3.	Physical and mental preparation (items 12 to 17)
4.	Physical self-presentation (items 18 to 20)
5.	Social support (items 21 to 26)
6.	Coach's leadership (items 27 to 31)
7.	Vicarious experience (items 32 to 36)
8.	Environmental comfort (items 37 to 40)
9.	Situational favorability (items 41 to 43)

I gain self-confidence in my sport when I ...	1	2	3	4	5	6	7
1. Master new skills in my sport.	1	2	3	4	5	6	7
2. Improve my performance on a skill in my sport.	1	2	3	4	5	6	7
3. Improve my skills.	1	2	3	4	5	6	7
4. Increase number of skills I can perform.	1	2	3	4	5	6	7
5. Develop new skills and improve.	1	2	3	4	5	6	7
6. Win.	1	2	3	4	5	6	7
7. Demonstrate I am better than others.	1	2	3	4	5	6	7
8. Show my ability by winning or placing.	1	2	3	4	5	6	7
9. Know I can outperform opponents.	1	2	3	4	5	6	7
10. Prove I am better than opponents.	1	2	3	4	5	6	7
11. Show I'm one of the best in my sport.	1	2	3	4	5	6	7
12. Keep my focus on the task.	1	2	3	4	5	6	7
13. Psych myself up.	1	2	3	4	5	6	7
14. Know that I am mentally prepared for the situation.	1	2	3	4	5	6	7
15. Stay focused on my goals.	1	2	3	4	5	6	7
16. Prepare myself physically and mentally.	1	2	3	4	5	6	7
17. Believe in my ability to give maximum effort to succeed.	1	2	3	4	5	6	7
18. Feel good about my weight.	1	2	3	4	5	6	7

19. Feel I look good.	1	2	3	4	5	6	7
20. Feel my body looks good.	1	2	3	4	5	6	7
21. Get positive feedback from teammates.	1	2	3	4	5	6	7
22. Know I have support from others that are important to me.	1	2	3	4	5	6	7
23. Am told that others believe in me and my abilities.	1	2	3	4	5	6	7
24. Am encouraged by coaches and/or family.	1	2	3	4	5	6	7
25. Get positive feedback from coaches and/or family.	1	2	3	4	5	6	7
26. Receive support and encouragement from others.	1	2	3	4	5	6	7
27. Believe in my coach's abilities.	1	2	3	4	5	6	7
28. Know my coach will make good decisions.	1	2	3	4	5	6	7
29. Know my coach is a good leader.	1	2	3	4	5	6	7
30. Trust in coach's decisions.	1	2	3	4	5	6	7
31. Feel my coach provides effective leadership.	1	2	3	4	5	6	7
32. See successful performances by other athletes.	1	2	3	4	5	6	7
33. Watch another athlete I admire perform successfully.	1	2	3	4	5	6	7
34. Watch a teammate perform well.	1	2	3	4	5	6	7
35. See a friend perform successfully.	1	2	3	4	5	6	7
36. Watch teammates who are at my level perform well.	1	2	3	4	5	6	7
37. Perform in the environment I like.	1	2	3	4	5	6	7
38. Follow certain rituals (e.g. wearing a lucky shirt, eating certain food, etc.)	1	2	3	4	5	6	7
39. Feel comfortable in the environment (gym, pool, Stadium, etc.) in which I'm performing.	1	2	3	4	5	6	7
40. Like the environment where I am performing.	1	2	3	4	5	6	7
41. Get breaks from officials or referees.	1	2	3	4	5	6	7
42. See the breaks are going my way.	1	2	3	4	5	6	7
43. Feel that everything is "going right"	1	2	3	4	5	6	7

Appendix B. Sports confidence Questionnaire (SC) (Jang et al., 2018)

The Sports Confidence Questionnaire (SCQ) consists of 24 items rated on a 5-point Likert scale, assessing athletes' confidence in competitive situations.

Scoring Criteria	
5	= Most confident
4	= Very confident
3	= Moderately confident
2	= Low confidence
1	= Least confident

The questionnaire contains **four subscales**, with items distributed as follows:

Persistence (Items 1–6)
Hesitation (Items 7–12)
Calm (Items 13–18)
Physical Prime (Items 19–24)

self-confidence in my sport when I ...	1	2	3	4	5
P1 I can beat opponent in a war of nerve.	1	2	3	4	5
P2 I can appear strong to opponent.	1	2	3	4	5
P3 I have grit to put opponent under pressure.	1	2	3	4	5
P4 I am not threatened by opponent.	1	2	3	4	5
P5 I am not afraid.	1	2	3	4	5
P6 I am undaunted by opponent.	1	2	3	4	5
H7 I cannot attack even at the chance.	1	2	3	4	5
H8 I am not bold.	1	2	3	4	5
H9 I cannot make decisive movement.	1	2	3	4	5
H10 I am withdrawn from competition.	1	2	3	4	5
H11 I am outplayed by opponent in competition.	1	2	3	4	5
H12 I hesitate even at the chance.	1	2	3	4	5
C13 I am not embarrassed.	1	2	3	4	5
C14 I am not upset.	1	2	3	4	5
C15 I am not nervous.	1	2	3	4	5
C16 I can remain calm in the face of crisis.	1	2	3	4	5
C17 I can get opponent's movement at one glance.	1	2	3	4	5
C18 I focus only on what I should do in competition.	1	2	3	4	5
PP19 I am ready to compete.	1	2	3	4	5
PP20 I maintain proper weight.	1	2	3	4	5
PP21 I work out enough.	1	2	3	4	5
PP22 I am in good condition.	1	2	3	4	5
PP23 I had my special skill enhanced by training.	1	2	3	4	5
PP24 I feel refreshed.	1	2	3	4	5

Appendix C. Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Li et al., 1996).

The TEOSQ assesses athletes' achievement goal orientation in sport contexts and contains 13 items rated on a 5-point Likert scale, as follows:

Scoring Criteria	
1	= Strongly disagree
2	= Disagree
3	= Neutral
4	= Agree
5	= Strongly agree

Subscale Structure	
Task Orientation: Items 1, 3, 4, 6, 9, 11	
Ego Orientation: Items 2, 5, 7, 8, 10, 12, 13	

Scoring	
Task Orientation Score = Sum of Task items (range = 6–30)	
Ego Orientation Score = Sum of Ego items (range = 7–35)	

Interpretation
<ul style="list-style-type: none"> • Task Orientation: Low: 6–18 High: 19–30 • Ego Orientation: Low: 7–21 High: 22–35 <p>Higher Task scores reflect a focus on personal improvement and mastery. Higher Ego scores reflect a focus on outperforming others.</p>

I feel most successful in sport when...	1	2	3	4	5
1) I am the only one who can do the play or skill	1	2	3	4	5
2) I learn a new skill, and it makes me want to practice more	1	2	3	4	5
3) I can do better than my friends	1	2	3	4	5
4) The others cannot do as well as I do	1	2	3	4	5
5) I learn something that is fun to do	1	2	3	4	5
6) Others mess up, but I do not	1	2	3	4	5
7) I learn a new skill by trying hard	1	2	3	4	5
8) I work hard	1	2	3	4	5
9) I score the most points/goals/hits, etc.	1	2	3	4	5
10) Something I learn makes me want to practice more	1	2	3	4	5
11) I am the best	1	2	3	4	5
12) A skill I learn feels right	1	2	3	4	5
13) I do my very best	1	2	3	4	5

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