

## Development of management model for the sports climbing association of Thailand

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**Abstract:** This research aimed to 1) study the management components of the Sports Climbing Association of Thailand in Trang Province; 2) develop and verify a management model for the Sports Climbing Association of Thailand; and 3) evaluate the practicality and suitability of the management model for the Sports Climbing Association of Thailand using Delphi future research techniques. The research involved 5 experts participating in semi-structured interviews and 17 experts responding to surveys, with an additional 11 stakeholders selected with purposive sampling for focus group discussions. These participants included committee members, referees, coaches, and other stakeholders involved with the Sports Climbing Association of Thailand. The research tools used included semi-structured interviews and questionnaires, with data analyzed using median, mode, and interquartile range statistics. The findings revealed that the development of the management model for the Sports Climbing Association of Thailand consists of (1) 4 dimensions and 28 components of management; (2) 5 dimensions and 30 components for promoting development within the association, with unanimous agreement and consistent opinions among the qualified experts on all items; and (3) verification of the model's practicality and suitability through focus group discussions, where expert opinions suggested additional improvements and consensus on practical implementation.

**Keywords:** Model development, Management, Sports Climbing association of Thailand.

### 1. Introduction

Thailand has recognized the significance of tourism, which annually attracts a large number of tourists, contributing significantly to the economic value of the nation. Continuous updates from the 10<sup>th</sup> to the 12<sup>th</sup> National Economic and Social Development Plan have prepared Thailand with diverse resources in biodiversity, culture, and human resources. These resources are excellent for extending innovative ideas and enhancing creativity to increase Thailand's role in global trade [1]. This aligns with current global tourism trends and scenarios, enhancing the competitiveness of Thai tourism by creating distinctive tourism products through advanced management skills, thereby elevating the capability, potential, and distinctive selling proposition of Thailand for the future [2]. However, due to the constantly changing behaviors of tourists, who often seek new tourism activities, it is imperative for the government, the private sector, and stakeholders to develop and promote tourism plans to attract tourists to local destinations by creating a variety of innovative activities. Therefore, sports tourism has become essential for pioneering new tourism models, capable of being managed under existing tourism resources and enhancing the country's tourism potential [3].

Rock climbing has become a popular sport among tourists from all corners of the globe, partly because it offers not just physical exercise but also a test of one's strength, resilience, and determination to overcome challenges. Moreover, rock climbing encourages personal discovery and instills a sense of pride in individuals [4]. Additionally, it is an exciting and challenging sport that tests one's emotional,

physical, and intellectual capacities. It also allows climbers to experience the natural beauty of the surroundings, such as birds and trees [5]. Famous climbing destinations like Railay Bay in Krabi Province are internationally favored due to factors such as accessibility, scenic views, and trails that offer the right level of challenge—not too easy yet not insurmountably difficult [4]. The safety of these activities is well-managed, with the oversight by organizations such as local climbing clubs and the tourism business association [6].

[7] Described the situation of currently rock climbing is widely popular both as a sport for health and for excellence. It is distinguished by its challenging nature, excitement, and fun, featuring competitions at various levels both domestically and internationally. According to the 6th National Sports Development Plan, the Sports Climbing Association of Thailand has initiated a project aimed at nurturing young climbers towards the Olympics, supported by funding from the Sports Authority of Thailand. Rock climbing competitions are divided into three types: Speed, Lead, and Bouldering, each requiring different skills. Speed climbing, in particular, is very popular, including individual and team competitions on artificial climbing walls up to 15 meters high [8]. Due to these changes, it is necessary to adapt sports management approaches that emphasize developing athletes' quality in line with these changes. Therefore, the association's administrators must be knowledgeable, inquisitive, and systematically develop the association in a way that aligns with management strategies aimed at enhancing athletes' potential. Consequently, successful outcomes in line with defined objectives are achieved. Therefore, provincial sports associations should seek management approaches that elevate the association to excellence. Besides producing athletes to serve the nation, the potential of sports in the province supports, promotes, and enhances the reputation and international recognition of athletes, matching the demands of the sports industry and related sectors. This also involves developing the quality of coaches by selecting experts specialized in academic and sport-specific disciplines. However, the problem is that personnel changes frequently and there are not enough sports coaches, leading to discontinuity in operations. The development of sports for excellence has not yet been able to successfully develop Thai athletes due to a lack of internationally competent sports personnel, especially coaches, which prevents the development of athletes' potential to match that of leading countries. Additionally, there is no clear and continuous management system for developing athletes from the basic level to excellence [2].

Therefore, sports associations should promote the development of sports management to strengthen the Sports Climbing Association of Thailand towards excellence. This involves implementing comprehensive sports management models and using these findings to improve management practices to help develop the association towards excellence. Additionally, using national competition results and representation on national teams as benchmarks, these efforts aim to systematically elevate and enhance the association's potential. From the above reasons, it is evident that current sports association management has not enabled athletes to develop their sports skills, knowledge, and abilities in accordance with the objectives set by the Sports Authority of Thailand, Ministry of Tourism and Sports. Consequently, the researcher is interested in studying the management model of the Sports Climbing Association of Thailand.

## 2. Research Objectives

- To study the management components of the Sports Climbing Association of Thailand.
- To develop and verify a management model for the Sports Climbing Association of Thailand.
- To evaluate the management model of the Sports Climbing Association of Thailand.

### 2.1. Research Procedures

Step 1: Study the development of the management model for the Sports Climbing Association of Thailand as follows:

Conducted research by analyzing and synthesizing documents, including theoretical principles and concepts related to developing the management model for the Sports Climbing Association of Thailand. These findings were used to establish a conceptual framework for the research.

Studied the development of the management model for the Sports Climbing Association of Thailand by analyzing concepts, theories, documents, and related research to formulate interview questions for semi-structured interviews. A purposive sampling method was used to select 5 participants for interviews regarding the management model development. The participants included:

- The President of the Sports Climbing Association of Thailand – 1 person
- The Secretary of the Sports Climbing Association of Thailand – 1 person
- The Deputy Director of the Sports Authority of Thailand – 1 person
- Stakeholders – 2 persons

Analyzed the data and reported on the development of the management model for the Sports Climbing Association of Thailand. This involved creating a checklist-style questionnaire and verifying the quality of the questionnaire through the opinions of experts. Five qualified experts evaluated the congruence index between the questionnaire items and the research objectives using the Index of Item Objective Congruence (IOC) for each question.

Step 2: Study the development of the management model for the Sports Climbing Association of Thailand:

This research involved synthesizing information from documents and expert opinions related to the development of the management model for the Sports Climbing Association of Thailand. It engaged a group of 17 participants, composed of:

- Delphi technique expert panel including:
  - Three representatives from the policy-level sports administrators of Thailand.
  - Three representatives from policy-level tourism directors.
  - Five representatives from various sports associations.
  - Two experts in management.
  - Four stakeholders directly involved in the operations.

Utilizing preliminary data from this step, the researcher constructed a research instrument based on the conceptual framework, formatted as a 5-point rating scale questionnaire.

The researcher distributed this questionnaire to the expert panel for a second round of responses, collecting their opinions on the development of the management model for the Sports Climbing Association of Thailand. The responses were statistically analyzed and further data was collected from the expert panel in a third round. This Delphi technique, applied in both the second and third rounds, ensured the development of a practical and comprehensive management model for the Sports Climbing Association of Thailand.

Step 3: Verification of the Development of the Management Model for the Sports Climbing Association of Thailand through a Focus Group Discussion:

The researcher developed a manual for the management model of the Sports Climbing Association of Thailand and outlined key points for evaluation.

The researcher sent the revised and developed manual from Step 2, along with the model evaluation form and usage manual, to a group of 11 experts and qualified individuals.

Data was collected and analyzed to summarize the results of the evaluation and the usage of the management model manual for the Sports Climbing Association of Thailand.

## 2.2. Procedure Steps

### *Step 1: Document Analysis for Initial Conceptual Framework Development*

Conducted an analysis and synthesis of preliminary data from documents concerning concepts, principles, theories, laws, strategies, and related research to establish the development of the management model for the Sports Climbing Association of Thailand.

Toolset 1: Semi-structured interviews used in Round 1 involved questions about developing the management model for the Sports Climbing Association of Thailand to align with research requirements.

Toolset 2: Expert opinion surveys used in Rounds 2 and 3, featuring a checklist format and a 5-point rating scale questionnaire.

#### Step 2: Quality Assurance of Research Tools

Quality of the expert opinion questionnaire was verified by five qualified experts who reviewed the interview content. The researcher then analyzed the Index of Item Objective Congruence (IOC) for each questionnaire item, which included experts who:

- Have earned a doctoral degree, or
- Hold an academic position not lower than associate professor and have research experience.

Revised the questionnaire based on expert feedback to refine it prior to usage.

Made further adjustments to the questionnaire following additional expert recommendations.

Step 3: Verification of the Management Model Development for the Sports Climbing Association of Thailand

The researcher drafted a manual for developing the management model of the Sports Climbing Association of Thailand and identified key points for examination and evaluation.

Verification of the model through a Focus Group discussion, inviting relevant qualified individuals to critique the development of the management model for the Sports Climbing Association of Thailand.

Gathered data was analyzed and summarized to assess the development of the management model for the Sports Climbing Association of Thailand.

### 3. Data Collection

The researcher requested a letter from the Faculty of Education at the Thailand National Sports University Trang Campus, to seek cooperation from qualified experts and the data provider group for data collection.

The researcher collected basic information about the development of the management model for the Sports Climbing Association of Thailand.

The researcher synthesized the results from the study on the development of the management model for the Sports Climbing Association of Thailand and formulated a framework of interview questions. The researcher then created an interview form related to the development of the management model and conducted interviews with 5 qualified experts, collecting the data personally.

The researcher synthesized the responses from the first round of interviews with the qualified experts, and based on the core mission of the development of the management model, created a 5-point rating scale questionnaire.

The researcher converted this questionnaire into an online format using Google Documents for Gmail, which was sent to 17 experts in the second round, and responses were received via the internet. Some data were collected personally by the researcher and returned to the experts via electronic mail.

The researcher selected statements from the second draft that had a median score of at least 3.50 and an interquartile range of 1.50 or less. These were used to create a similar 5-point rating scale questionnaire for the third round, which displayed the median values, interquartile range, and the positioning of responses from the second round. This allowed experts to confirm or modify their answers, providing reasons if their scores were outside the interquartile range, and the responses were collected back via electronic mail.

The researcher synthesized the consensus opinions from the experts into a manual for developing the management model for the Sports Climbing Association of Thailand.

The researcher organized a focus group discussion by inviting 11 experts and qualified individuals to critique and discuss the developed management model. The researcher facilitated the discussion to reach a consensus and acceptance on the trends and feasibility of the management model development. The session was audio-recorded and notes were taken.

The researcher summarized the findings and presented the developed management model for the Sports Climbing Association of Thailand. The model was refined and improved based on suggestions from the qualified experts, and a comprehensive research report was prepared for further dissemination.

#### 4. Data Analysis

The researcher analyzed the initial basic data and responses from 5 experts obtained through interviews and questionnaires using content analysis to classify and interpret the gathered responses.

The researcher analyzed the responses from the questionnaires in the second round using the Delphi technique to calculate the median, the difference between the median and mode, and the interquartile range of each response. This also involved displaying the positions of the median, mode, interquartile range, and where each expert's response fell, to prepare for analysis in the third round.

The researcher analyzed the responses of the experts from the questionnaires in the third round using the Delphi technique.

In the analysis of the third round, the researcher calculated the median, the difference between the median and mode, and the interquartile range of each response using appropriate criteria set by the Delphi technique to compute and analyze the consistency of the responses obtained.

#### 5. Research Summary

This research studied documents and related research and conducted in-depth interviews, finding that the development of the management model for the Sports Climbing Association of Thailand includes: (1) four aspects and 28 components of the management of the Sports Climbing Association of Thailand, and (2) five aspects and 30 components of the strategies for promoting the development of the Sports Climbing Association of Thailand.

This research found that the management model of the Sports Climbing Association of Thailand consists of 58 components. The researcher summarized the statements that the experts most agreed upon, which had a median value of 4.00-5.00 and an interquartile range of 0.00-1.00, as detailed below:

The management of the Sports Climbing Association of Thailand includes 4 aspects:

Policy aspect: The review found that there were 5 items received from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Plan implementation aspect: The review found that there were 8 items received from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Operational level aspect: The review found that there were 9 items received from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Participation aspect: The review found that there were 6 items received from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Strategies for promoting the development of the Sports Climbing Association of Thailand include 5 aspects:

Development of coaches and referees: The review found that there were 7 items from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Athlete selection: The review found that there were 6 items from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Plan for promoting athletes: The review found that there were 5 items from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Budgeting: The review found that there were 7 items from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

Facilities and equipment: The review found that there were 5 items from the experts, and the qualified experts agreed with all items and had consistent opinions meeting all criteria.

The practicality and suitability of the management model for the Sports Climbing Association of Thailand were confirmed based on the opinions of qualified experts. These experts, part of a focus group

discussion that included 11 individuals selected through the purposive sampling method, provided additional suggestions and reached a consensus that the model could indeed be practically implemented.

## 6. Discussion of Research Findings

The research concerning the development of the management model for the Sports Climbing Association of Thailand identified key issues for discussion, which are as follows:

### 6.1. *Management of the Sports Climbing Association of Thailand*

In terms of policy, it was found that the establishment of policies and goal-setting plans for the organization involved compiling data from past operations to analyze the environment and context of the association, which is flexible according to the number of resources available to support the achievement of objectives. This allows the organization to progress towards its goals. The development of sports personnel towards international levels and the management of the association must involve an international committee to develop a comprehensive strategic plan for the development of the association's activities. There should be a clear annual operational plan that aligns with [9], which states that the strategic development of sports for excellence should involve short-term, medium-term, and long-term promotional and development plans. There should be a clear structure and mission for responsible parties that align with organizational units, strategic issues, and objectives. The structure and management of the association should include the formulation of the association's strategic plan, establishing clear regulations and procedures for the association's operations that serve as guidelines for practice, and clear financial and accounting practices that respond to the national strategy for sports development. This aligns with [10] who conducted research and summarized that the promotion of hockey towards excellence found that sports management should involve all sectors from youth level to national and international levels to participate in defining strategies, missions, and joint goals to make sports popular.

In the aspect of plan implementation, it was found that the development of sports climbing to become widely recognized within the country requires an increasing number of athletes, leading to the selection of high-performing athletes. Clear definitions of vision, mission, goals, and objectives are essential [11]. This supports the continuous development of personnel, clear management, and the establishment of a governing board. It promotes and supports the creation of discipline in the execution of duties by personnel to support operations according to their responsibilities, and fosters the creation of exemplary works for future operational practices. A firm adherence to correct and good operational guidelines, which align with the research of the [12], proposed an effective planning process for sports organizations in Australia in four stages: 1) Planning preparation, including reviewing last year's plan and personnel structures; 2) Strategy formulation, including analyzing internal and external environments, setting vision, mission, and values, defining long-term objectives, prioritizing strategies, and creating indicators; 3) Strategy implementation, involving prioritizing short-term plans, developing operational plans, and implementing plans; 4) Strategy evaluation, including monitoring, evaluating results, reviewing plans, and creating benchmarks. Direct responsibility helps make operations and problem-solving more targeted and efficient, with each type of work being controlled by its performers, who report to senior management in order to achieve national and international excellence. This is consistent with [13], who studied strategies for driving academic administration in basic education towards the ASEAN community. The study found that the main components of the policy direction for driving academic management in basic education towards the ASEAN community should include two main components: promoting and developing the capabilities of personnel and the policy component of the state. This aligns are consisted with the concept of implementation [14], that conducted research on the development of competency models for sports club management. The research found that there are 11 competencies in management, including leadership, communication skills, personnel management, sports knowledge, legal knowledge, achieving objectives, marketing, problem-solving, public relations, finance, and facility management, which are crucial foundations for sports club management.



At the operational level, it was found that the administrative functions of the association, involving document handling, official correspondence, and data collection about the association, can effectively coordinate with other relevant units. This coordination facilitates rapid interaction between different departments, ensuring that operations are performed by professionals. The selection of personnel is based on limited availability and qualifications [15], which states that for successful operations, managers must engage in various activities that motivate staff to achieve organizational goals appropriately. Command-level duties require dedication and commitment to achieve effective results. Operational staff are similarly expected to be dedicated and purposeful in fulfilling their duties according to national strategies. Monitoring and support for operational staff align with [16], who stated that internal organizational treatment includes control, delegation, motivation, and at higher leadership levels, roles include planning, managing the organization, leading, and controlling. This corresponds with research by [17], which found that motivation created by their recognition of goals and beliefs about the causes of success and self-satisfaction, learning-oriented learning has a positive correlation with task-centered goal setting, helping to address problems encountered in operations.

In the aspect of participation, it was found that the systematic management development of the association involves cooperation from the private sector and government agencies. This cooperation allows personnel to express their opinions openly and freely, emphasizing group processes in teamwork. The association generates foundational data using information from various departments. This aligns with [18], who mentioned that a work calendar should be established to adhere to planned projects and activities. The creation of information systems and databases, such as developing websites, athlete data, and various statistics related to sports annually, is crucial for management. The disclosure of operational information enables personnel to be aware of updates and to monitor performance. Public relations activities disseminate information to relevant personnel, consistent with [19], who studied the excellence of athletes in national sports competitions and found that involving stakeholders in sports organization networks in the development of athletes is crucial. This involves participation in policy and planning, implementation, and monitoring and evaluation, thus promoting and supporting these activities to achieve excellence in national sports competitions successfully.

## *6.2. Guidelines for Promoting and Developing the Sports Climbing Association of Thailand*

For the development of coaches and referees, it has been found that the association should have a registration system and manage a comprehensive database of sports personnel at all levels, encompassing the personnel management structure of the association. Rigorous selection is necessary, including knowledge in sports science, coaching, and sports psychology, with clear performance indicators for trained sports personnel. This is in line with [18, 20], who stated that sports science knowledge should be utilized to train and develop the capabilities of athletes, enhancing their abilities. It is necessary to register with the Sports Climbing Association of Thailand and have a national sports personnel database system, set training plans, and improve the efficiency of coaches, referees, and sports personnel. Referees should undergo training at least annually to enhance their skills to international levels, develop curricula for upgrading coaches and referees, and establish criteria for assessing the quality of coaches and referees to enhance their capabilities. The promotion and support of coaches and referees to register at the international level with the sports federation and to plan for sending coaches and referees for training and certification at the international level are consistent with [21], who mentioned that coaches and referees are key personnel linking sports development as they promote enjoyment, fairness in sports competitions, and prevent conflicts in sports.

In the aspect of athlete selection, it was discovered that the athlete development plan involves a system for scouting athletes from the youth level and utilizes a network of cooperation with sports organizations and educational institutions, both domestically and internationally. This system structures work and operational approaches in sports training, distributing duties based on individual aptitudes and expertise. Athletes should be selected based on a comprehensive assessment of skills, abilities, physical fitness, and mental fitness in every dimension. This is in line with [22], who stated

that the recruitment and selection of athletes should involve planning competitive management to establish standards for athlete selection, which should be specified in the annual calendar/operational plan. Various selection methods are used to ensure the best athletes are chosen, with defined athlete characteristics for each category and criteria set for entering the athlete development system, which includes training, sports science, and competition participation. The agenda for these activities is appropriately set, with widespread publicizing of the rules and criteria for selecting the Thai national team athletes, as well as broadcasting the selection results through various media. The plans and committees are formed, and sports science is applied in the athlete selection process to ensure the best outcomes.

In the aspect of athlete promotion plans, it is found that defining a vision for developing children, youth, and the general population in sports development is essential. As demonstrated by the long-term athlete development model from [23], considerations must start from childhood, which forms the foundation of movement learning and tracks the potential sports talents of children (Gifted). Engaging in climbing sports correctly until it becomes a lifestyle and maintaining good fitness with ethical and moral standards, sportsmanship, and the components that enhance the athlete development system according to the management style of the association, is vital. This promotion helps develop athletes' competitive capabilities, thereby generating income and prestige for human resources. This is consistent with [21], who stated that welfare and career prospects are crucial for athletes. They serve as motivation to dedicate themselves to training and competition, reducing anxiety about income for livelihood both during and after their athletic career. The absence of a welfare system after retiring from sports forces athletes to study and play simultaneously to ensure a career post-retirement, which means athletes cannot fully commit to training and the country's efforts to promote and support the development of sports science and technology to apply scientific knowledge in sports development at all levels, systematically integrating sports science and technology.

In terms of budgeting, it was found that structuring work and operational approaches to formulating plans and budgets to support the association's mission based on functional organization by assigning duties according to the required job characteristics. Practices that can define the scope of work for planning and budgeting adhere to integrity and allow for regular audits. There is planning for additional funding since government agency budgets may not suffice for the association's management. The ability of personnel involved in planning and budgeting is consistent with [24], who stated that strategic planning and management should align with the national sports development plan. There should be comprehensive plans for budget disbursement provided by the Sports Authority of Thailand, managing the budget systematically, accurately, transparently, and verifiably. There are established regulations for controlling budget disbursements and networking with sports associations or sports units to manage duties according to workloads. Personnel should be knowledgeable, skilled in communication, adaptable, able to apply experience in problem-solving, and capable of integration and partnership building with the private sector and state enterprises to seek additional support for financial plans using funds from the Sports Authority of Thailand. This aligns with [25], who studied physical and sports academia in new national economic and social situations, finding that the mechanisms for funding sports must ensure adequate budget allocation and secure funding sources from the public and private sectors for supporting athletes.

In terms of facilities, equipment, and amenities, it was found that the association should have modern, clearly defined, and internationally compliant training centers. There should be planned utilization of buildings and facilities to maximize benefits for the organization. The use of natural resources available at the facility should also be optimized for organizational operations. Facilities, materials, equipment, instruments, and various conveniences should be maintained in readiness for support training, considering both quantity and quality appropriate for training towards excellence. The establishment of regional climbing sports training centers should serve as venues for training and housing athletes. This is consistent with [26], who stated that the management model for excellence in



sports within local government schools should include modern, safe materials and equipment that inspire, create training standards, and are suitable for the physical and developmental needs of athletes.

## 7. Suggestions for Applying Research Findings

This research on developing management strategies for sports associations can be utilized in decision-making, policy formulation, and the planning of management strategies for sports associations.

The knowledge obtained from this study can be used as data for further research and development of management strategies across various sectors to maximize efficiency.

Administrators or supervisors should consider the objectives of ongoing projects, which are clearly detailed and widely acknowledged before applying any standards for evaluation or control. These criteria must be analyzed for feasibility before implementation.

## 8. Suggestions for Future Research

Future research should explore sustainable management models for sports associations to identify key components and the feasibility of managing such associations.

There should be research on the outcomes of applying the management strategies of sports associations in ongoing operations.

Comparative studies should be conducted on the use of different management models, utilizing qualitative data collection methods from experts. This involves comparing the consistency and differences of various management techniques to determine the most suitable approach for each sports association.

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