SPORT TK-EuroAmerican Journal of Sport Sciences

https://sportk.eu Online ISSN: 2340-8812

Received: **20/04/2026.** Accepted: **29/07/2026.** Published: **23/11/2026**

Current status of adventure sports development in the Northern Midlands and Mountainous Regions of Vietnam

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ABSTRACT

The purpose of the study was to correctly assess the current status of adventure sports development in this region, as a basis for impacting appropriate solutions to develop adventure sports in the research area. The research process used basic scientific research methods in the field of physical education and sports, selecting 14 criteria to evaluate the development of adventure sports in the midlands and mountainous areas of Northern Vietnam. On that basis, the current status of adventure sports development in the research area was assessed through a survey. The sample consisted of 446 participants: 92 officials, 156 tourists, and 198 local residents from the Northern Midlands and Mountains of Vietnam. The results showed that most provinces assessed the development of adventure sports as weak. Participation in adventure sports remains relatively low compared with the expressed demand for these activities. Participants reported diverse and predominantly positive motivations for engaging in adventure sports. However, the main barriers to participation included financial constraints, inadequate facilities and equipment, and a lack of qualified instructors. Furthermore, policy mechanisms supporting adventure sports development in the study area remain limited. These findings highlight the need for appropriate and effective measures to promote the development of adventure sports in the region.

KEYWORDS

Adventure Sports; Sports Development; Participation; Northern Vietnam; Mountainous Regions

1. INTRODUCTION

In the strategy for developing Vietnam's sports until 2020, extreme sports are one of the sports that need to continue to be encouraged to develop in provinces, cities, sectors and social organizations on physical education and sports, while developing a number of sports in the competition content of the Beach Sports Festival, Recreational Sports Festival and Indoor Martial Arts Festival such as: E-sport, Muay, Kick-boxing, extreme sports, Kurash, B-boy, Jujitsu and Belt Wrestling... Thus, it can be seen that the Vietnamese Sports Industry has initially paid attention to developing extreme sports as a type of sport (Prime Minister, 2010).

The Northern Midlands and Mountains region of Vietnam is a region that still faces many difficulties in economic development compared to other regions in the country. With a very special geographical location, bordering the three provinces of Guangdong, Guangxi and Yunnan of China to the North, Laos to the West, the Red River Delta and North Central Coast to the South, and the Gulf of Tonkin to the East, the Northern Midlands and Mountains region of Vietnam is very favorable for exchanges and cooperation in developing recreational sports activities, ethnic sports, adventure sports and training high-performance athletes between regions in the country and provinces and cities of neighboring countries. In particular, with high and rugged mountainous terrain, many rivers, streams, waterfalls, hydroelectric lakes... it is suitable for developing many adventure sports and recreational sports such as: mountain climbing, paragliding, picnicking, etc.

In fact, although the potential for developing adventure sports in the midlands and mountainous areas of Northern Vietnam is very large, in recent times, the implementation of adventure sports activities has encountered many obstacles. The development of adventure sports in the midlands and mountainous areas of Northern Vietnam has encountered many difficulties, the development is mostly spontaneous, and there has not been any research on this field in the research area.

In order to have appropriate solutions to exploit the potential and promote the development of adventure sports in the Northern Midlands and Mountains of Vietnam, research to properly assess the current status of adventure sports activities in the area is necessary and has practical significance.

The Northern Midlands and Mountains region of Vietnam is an area with many limitations in socio-economic development compared to other regions in the country. However, with its unique geographical location, bordering China, Laos, the Gulf of Tonkin and key economic regions in the country, this area has many favorable conditions for exchange, connection and development of sports

activities. With natural characteristics: high mountain terrain, many rivers, streams, rapids and hydroelectric lakes create an ideal natural environment for the development of adventure sports such as mountain climbing, paragliding, rowing or picnicking.

In the Vietnam Sports Development Strategy to 2020, extreme sports are identified as one of the types that need to be encouraged to expand. Some sports have been included in competitions at the Beach Sports Festival, Recreational Sports Festival and Indoor Martial Arts Festival. This shows that the Vietnamese sports industry has initially paid attention to developing extreme sports not only as a social and recreational activity but also as a content that can contribute to national sports achievements (Prime Minister, 2010).

However, in reality, the great potential of adventure sports in the Northern Midlands and Mountains has not been effectively exploited. Activities are still spontaneous, lacking direction, and support policies are inadequate, while economic conditions, facilities and human resources are still limited. In particular, to date, there has been no scientific work that systematically and comprehensively studies the current status of adventure sports development in this region. This research gap poses an urgent need for objective assessment as a basis for proposing appropriate solutions.

This study is based on the theoretical framework of sustainable development in physical education and sports, in which the development of adventure sports is considered as the result of the interaction between three groups of factors: (1) natural potential (terrain, climate, landscape), (2) social resources (economy, community, participation demand), and (3) management policy mechanisms (strategy, planning, development orientation). This approach helps to comprehensively analyze not only the availability of resources but also the ability to organize, manage and maintain long-term development.

Based on the above context, the assessment of the current status of adventure sports development in the Northern Midlands and Mountains of Vietnam is necessary and has practical significance. The research results will help identify potentials, difficulties and challenges; at the same time, provide a scientific basis for policy making, investment in infrastructure, human resource training and development of appropriate organizational models. On that basis, solutions can be proposed to effectively exploit resources, overcome limitations and promote sustainable development of adventure sports in this region.

2. METHODS

2.1. Design and Participants

The research employed three main methods: document analysis and synthesis, interviews, and statistical analysis. The study was conducted across eight provinces in the Northern Midlands and Mountains of Vietnam: Son La, Lai Chau, Ha Giang, Tuyen Quang, Lao Cai, Yen Bai, Phu Tho, and Thai Nguyen. The survey involved a total of 446 participants, divided into three groups:

1. Officials responsible for managing cultural, sports, and tourism activities in the Northern Midlands and Mountains of Vietnam (n = 92).
2. Tourists (n = 156).
3. Local residents from the provinces of the Northern Midlands and Mountains of Vietnam (n = 198).

The three participant groups accounted for the entire study sample (N = 446).

Informed consent was obtained from each study participant and the study procedure complied with the ethical guidelines of the 1975 Declaration of Helsinki as reflected in prior approval by the institutional human research committee.

2.2. Instrument

The survey questionnaire was developed based on 14 criteria for assessing the development of adventure sports. To ensure the reliability and validity of the research instrument, a pilot survey was conducted before its official implementation. The questionnaire demonstrated acceptable internal consistency, with a Cronbach's alpha coefficient exceeding 0.70.

2.3. Procedure

The study was conducted using a mixed approach, using qualitative methods to explore the local context and characteristics, and quantitative methods to measure the level of adventure sports development through specific criteria. This approach ensures both scientific and objective nature and reflects the vivid reality of the research area.

The methods used include: (1) analyzing and synthesizing documents to build a theoretical basis, determine a framework of evaluation criteria, compare and contrast with related research works to have comments on new research results; (2) interviewing by questionnaire to collect practical data from many groups of subjects; (3) Statistical mathematics to process, analyze and verify the collected data.

2.4. Statistical Analysis

The collected data were processed and analyzed using SPSS software. Statistical analyses included descriptive statistics, frequency analysis, and comparative analysis. These techniques provided an objective assessment of the current state of adventure sports development in the research area, supported by both theoretical foundations and empirical evidence.

3. RESULTS AND DISCUSSION

3.1. An overview of the development of adventure sports in Vietnam and around the world

Adventure sports are sports activities performed in dangerous conditions that require strict adherence to sports training methods and requirements to ensure the health and safety of sports participants [9].

Extreme sports is a general term for certain activities that are considered to be high risk. These activities often involve speed, altitude, physical exertion, and special specialized equipment.

It is difficult to define exactly what extreme sports are and the origins of the term are unclear, but “extreme sports” became popular in the 1990s when extreme sports were marketed by companies for the X-Games and with the launch of the Extreme Sports Channel and its website www.extreme.com. More recently, the term has been used to refer to “competitive activities” in which participants are subjected to natural or unusual physical and mental challenges such as speed, height, depth, or natural impacts and where rapid and accurate processing of sensory perception is necessary for a successful outcome.

There are some common characteristics to most extreme sports. While not exclusively a youth-oriented field, extreme sports tend to appeal to a younger-than-average demographic. Extreme sports tend to be more solitary than traditional sports. Extreme sports must be both sport and adventure.

“Athletic”: Participants must demonstrate significant physical skill or ability to avoid demonstrating poor performance.

“Risk”: the possibility that poor performance will result in a significant risk of serious harm to the participant.

The development of adventure sports has been developed in many countries around the world and attracted the research interest of many scientists, in which the development of adventure sports is

often studied as an independent sport and research on the development of adventure sports is associated with tourism and adventure tourism.

Research on extreme sports has examined various aspects of participation, development, and their broader implications for individuals and society. Several authors have investigated the psychological characteristics and motivations of extreme sports participants. For example, Self et al. (2006) examined the personality characteristics of individuals involved in extreme sports, while Zhou & Chlebosz (2020) conducted an exploratory study on motivations for participating in extreme sports and physical activities. Similarly, Mei-Dan (2018) explored parental perspectives on children's participation in extreme sports.

Other studies have focused on the relationship between extreme sports, personal development, and the natural environment. Brymer & Oades (2008) investigated extreme sports in relation to the positive psychological transition between courage and humility. Brymer et al. (2009) examined extreme sports as a potential basis for environmental sustainability. In another study, Brymer & Gray (2009) explored how participation in extreme sports contributes to developing a closer relationship with nature. Furthermore, Brymer (2010) investigated risk-taking in extreme sports from a phenomenological perspective, highlighting the experiences and perceptions associated with participation in these activities.

Research has also addressed the physical and motor-developmental dimensions of extreme sports. In this regard, Kovalchuk et al. (2016) examined the influence of extreme sports on the development of coordination abilities.

Overall, international research has approached extreme sports from diverse perspectives, including psychology, physiology, motivation, human behaviour, physical and motor development, environmental sustainability, and risk perception. These studies have contributed to a broader understanding of the characteristics, benefits, challenges, and implications of participation in extreme sports. Collectively, they provide an important theoretical and empirical foundation for further research into extreme sports and their development in different countries and geographical contexts.

Research on adventure sports associated with tourism and adventure tourism has addressed various aspects of tourism development, destination management, visitor motivations, and sustainable development. Several studies have examined the relationship between adventure sports and tourism in specific geographical contexts. For instance, Corneloup et al. (2001) investigated tourism and adventure sports in the French mountains, focusing on the drivers of change and

challenges associated with sustainable development. Similarly, Weed (2006) conducted a systematic review of sports tourism research published between 2000 and 2004, providing an overview of existing knowledge and research methodologies in the field.

Other researchers have focused on the development and management of adventure tourism destinations. Buckley et al. (2014) examined the Chinese model of mass adventure tourism, highlighting the development of adventure tourism within a rapidly expanding tourism market. Gorlova et al. (2016) explored entrepreneurship in adventure tourism, particularly the dynamic processes involved in the development of adventure sports tourism destinations. Furthermore, Karimi et al. (2020) investigated the development of an adventure sports tourism model using a grounded theory approach.

Visitor motivations and behavioural intentions have also received considerable attention in the literature. Zhou et al. (2019) explored the motivations underlying participation in adventure sports and physical activities. In addition, Ngoc Anh & Kiatkawsin (2020) examined the visit intentions of Vietnamese adventure tourists using an extended model of goal-directed behaviour.

In Vietnam, research specifically examining adventure sports as an independent form of sporting activity remains limited. Previous studies have primarily approached this field in connection with adventure tourism, tourism events, and the development of tourism destinations. As a relatively recent area of research and practice in Vietnam, adventure tourism has attracted the attention of several researchers, who have examined it from different perspectives.

Among the relevant studies, Luong (2008) investigated the scientific foundations for developing coastal and island tourism in the North Central region of Vietnam. Hai (2006) conducted a ministerial-level scientific research project entitled "Research on the Phong Nha–Ke Bang Adventure Tourism Route," focusing on the development of adventure tourism routes. Similarly, Le Anh (2006) examined trekking tourism in Vietnam, addressing its different forms and research organization methods. Furthermore, Ngan (2015) investigated the current situation and proposed solutions for developing adventure tourism in Ba Be National Park, Bac Kan Province.

It can be seen that in Vietnam, the development of adventure sports and sports events associated with tourism activities or sports tourism has initially developed and has been studied by a number of authors. However, most of the research works have only stopped at master's theses and are limited to the research area with each province or region. There have been no large-scale studies with orientation for a region, and there have been no in-depth studies on the development of adventure

sports and adventure sports events in the midland and mountainous areas of the North. Therefore, it is necessary to conduct large-scale, orientational research works to accurately assess the development of adventure sports activities and the organization of sports events associated with tourism in the midland and mountainous areas of the North to help orient the development of sports and tourism activities in the research area.

3.2. Selection of Criteria for Assessing the Current State of Adventure Sports Development in the Northern Midlands and Mountains of Vietnam

The determination of criteria for assessing the current status of development of adventure sports in the Northern Midlands and Mountains of Vietnam was conducted on the basis of analyzing documents, referring to scientific topics, and related domestic and foreign research works. Because adventure sports is also a type of physical training and sports developed in both the fields of sports for everyone and high-performance sports, from the perspective of researching the topic, we approached the research from the perspective of developing adventure sports for everyone, and interviewed experts and interviewed on a large scale using questionnaires. The results of selecting 14 criteria for assessing the current status of development of adventure sports in the Northern Midlands and Mountains of Vietnam include: (1) the number of people participating in adventure sports; (2) the number of adventure sports instructors; (3) the number of adventure sports collaborators; (4) the number of adventure sports clubs; (5) the number of adventure sports disciplines available; (6) the number of adventure sports events organized; (7) the number of establishments providing adventure sports training services; (8) the number of businesses selling adventure sports equipment; (9) the availability and development of infrastructure for adventure sports; (10) the integration of adventure sports activities with tourism; (11) the number of businesses combining adventure sports and tourism services; (12) the number of adventure sports events integrated with tourism activities; (13) motivation and demand for participation in adventure sports; and (14) the legal and regulatory framework for adventure sports development.

3.3. Current status of adventure sports development in the Northern Midlands and Mountains of Vietnam

The assessment of the current status of adventure sports development in the Northern Midlands and Mountains was conducted through direct surveys and questionnaire surveys according to 14 selected evaluation criteria and was statistically analyzed according to each method and each group of interview and survey subjects (03 groups).

3.3.1. Results of direct interviews with sports management staff at the department and sports center levels

Direct interviews with the subjects who are sports management officers at the department and sports center levels to assess the current status of adventure sports development in the Northern Midlands and Mountains of Vietnam were conducted on a 5-level Likert scale from good to poor development. The interview results are presented in Table 1.

Table 1. Adventure sports development in the Northern Midlands and Mountains region of Vietnam (n= 8 provinces)

TT	Solution	Interview results m_i					Total point	Average score	Evaluation
		5	4	3	2	1			
1.	Number of adventure sports instructors	0	0	4	13	15	38	1.19	Weak
2.	Number of extreme sports collaborators	0	0	9	12	11	51	1.59	Weak
3.	Number of adventure sports clubs	0	0	10	11	11	52	1.63	Weak
4.	Number of extreme sports	0	1	9	10	12	51	1.59	Weak
5.	Number of extreme sports events held	0	2	10	11	9	60	1.88	Weak
6.	Number of adventure sports training service establishments	0	0	7	13	12	47	1.47	Weak
7.	Number of businesses selling adventure sports equipment	0	0	7	14	11	49	1.53	Weak
8.	Infrastructure for developing adventure sports	6	9	14	3	0	114	3.56	Rather
9.	Adventure sports activities combined with tourism	1	8	14	6	3	91	2.84	Medium
10.	Adventure sports businesses combined with tourism	1	7	15	5	4	88	2.75	Medium
11.	Adventure sports events combined with tourism	1	3	21	4	3	88	2.75	Medium

The results presented in Table 1 indicate that adventure sports development in the Northern Midlands and Mountains of Vietnam remains limited. Of the 11 assessed criteria, seven were rated as weak, three as medium, and one as rather. No criterion achieved a good rating. These findings suggest that, despite the region's considerable natural potential, adventure sports development remains insufficiently organized and systematically supported.

The criterion concerning infrastructure for adventure sports development received the highest mean score (3.56), classified as rather. This assessment primarily reflects the region's natural

advantages, including mountainous terrain, hills, rivers, waterfalls, streams, and traditional physical activities of ethnic minority communities. However, purpose-built infrastructure and systematically developed facilities for adventure sports remain largely unavailable.

Three criteria relating to the integration of adventure sports and tourism were rated as medium, with mean scores ranging from 2.75 to 2.84. These included adventure sports activities combined with tourism, adventure sports businesses combined with tourism, and adventure sports events associated with tourism. Examples include paragliding competitions, mountain marathons, trekking, mountain biking, and canoeing over waterfalls. Nevertheless, these activities still face challenges related to safety regulations, licensing, and organizational management, with many remaining spontaneous rather than professionally organized.

The remaining seven criteria were rated as weak, covering the number of instructors, collaborators, clubs, adventure sports disciplines, organized events, training service establishments, and equipment businesses. In terms of human resources, Lao Cai Province represents a notable example, having sent 11 individuals to France for adventure sports instructor training. However, qualified and officially recognized instructors remain limited across the region. Most collaborators acquire their skills through independent learning, informal groups, and practical experience, while standardized training and certification mechanisms remain insufficiently developed.

Similarly, although several adventure sports events are organized in provinces such as Yen Bai, Lai Chau, Ha Giang, and Lao Cai, most activities depend on clubs and groups from other provinces rather than established local organizations. Examples include the paragliding events "Flying over the Golden Season" in Mu Cang Chai and "Flying over Putaleng" in Lai Chau. Other activities, including motorcycle racing, off-road car racing, mountain marathons, and boat racing, also demonstrate regional potential, although their organizational structures remain limited.

Furthermore, specialized adventure sports training establishments and equipment businesses are largely underdeveloped. Training activities are generally incorporated into tourism experiences or organized informally, while equipment is mainly sold through general sports equipment stores rather than specialized businesses.

Overall, the findings demonstrate a considerable gap between the region's natural potential and the actual level of adventure sports development. The main challenges concern insufficient professional human resources, limited organizational structures, underdeveloped specialized infrastructure, and inadequate regulatory mechanisms. Addressing these limitations requires greater

investment in infrastructure, professional training and certification, institutional support, and cooperation between the sports and tourism sectors.

3.3.2. Assessment of the Current Status of Adventure Sports Development by Respondent Group

The survey covered three main dimensions: regular practice of adventure sports, training content for adventure sports, and motivation and the need to participate in adventure sports. Regarding physical activity, participants were classified into three categories: regular exercise, defined as exercising at least three times per week, with each session lasting at least 30 minutes, continuously for six months or longer; occasional exercise, defined as exercising at least once per week, with each session lasting at least 20 minutes; and no exercise, defined as engaging in physical activity less frequently than the occasional exercise category. Table 2 presents the survey results of target groups on the level of extreme sports practice.

Table 2. Survey results of target groups on the level of extreme sports practice (n=446)

Exercise level	Managers (n=92)		Tourists (n=156)		Local people (n=198)		Total (n=446)	
	m_i	%	m_i	%	m_i	%	m_i	%
Exercise regularly	7	7.61	9	5.77	12	6.06	28	6.28
Sometimes	13	14.13	16	10.26	21	10.61	50	11.21
No practice	72	78.26	131	83.97	165	83.33	368	82.51

Table 2 shows that the participation rate in adventure sports among the 446 respondents was relatively low, with only 17.49% reporting participation, of whom just 6.28% engaged in these activities regularly. This figure is considerably lower than the national average participation rate in physical training and sports, which reached 35.6% in 2022, according to statistics from the Ministry of Culture, Sports and Tourism. Among the surveyed groups, sports management staff in the provinces reported the highest participation rate, potentially reflecting their greater exposure to new sports activities and opportunities to experience adventure sports. However, the differences in participation rates between the groups were relatively small, suggesting that participation in adventure sports remains limited across all surveyed groups.

In conjunction with the characteristics of the Northern Midlands and Mountains, the main causes of this situation are: (1) lack of facilities and professional support services; (2) economic constraints of local people; (3) fear of risks and injuries; (4) lack of communication and policies to encourage participation. These factors are consistent with previous studies on the difficulties in developing adventure sports in areas with limited socio-economic conditions.

In terms of social and cultural significance: although the Northern Midlands and Mountains region has very favorable natural conditions for the development of adventure sports, the need for participation in the community is still at a rudimentary level and has not yet become a sustainable movement. To promote participation, there needs to be a synchronous support policy, including: investment in basic infrastructure, training of specialized human resources, ensuring safety and insurance, and building sports and tourism events associated with local culture. To gain a more detailed understanding of the types of sports practiced and the training content involved, in-depth interviews were conducted with individuals who participate in adventure sports. The survey results of the target groups on the current status of practicing extreme sports are presented in Table 3.

Table 3. Survey results of target groups on the current status of training content (subjects) of extreme sports (n=78)

Sports	Managers (n=20)		Tourists (n=25)		Local people (n=33)		Total (n=78)	
	m_i	%	m_i	%	m_i	%	m_i	%
Motorcycle racing	0	0.00	2	8.00	0	0.00	2	2.56
Car racing	0	0.00	0	0.00	0	0.00	0	0.00
ATV Racing	0	0.00	0	0.00	0	0.00	0	0.00
Powerboat racing	0	0.00	0	0.00	0	0.00	0	0.00
Surfing content -motorboat towed acrobatics	0	0.00	0	0.00	0	0.00	0	0.00
Powerboat towed wakeboarding events	2	10.00	5	20.00	0	0.00	7	8.97
Aviation sports	0	0.00	0	0.00	0	0.00	0	0.00
Surf the river	0	0.00	0	0.00	0	0.00	0	0.00
Sailing on the river	0	0.00	0	0.00	0	0.00	0	0.00
Kitesurfing	0	0.00	0	0.00	0	0.00	0	0.00
Diving in a flooded cave	0	0.00	1	4.00	0	0.00	1	1.28
Water skiing	0	0.00	0	0.00	0	0.00	0	0.00
bungee jumping	0	0.00	3	12.00	0	0.00	3	3.85
Ziplai	2	10.00	6	24.00	0	0.00	8	10.26
Skateboarding, rollerblading on city terrain	0	0.00	3	12.00	6	18.18	9	11.54
Paragliding training and competition	0	0.00	7	28.00	5	15.15	12	15.38
Paragliding training and competition without engine	0	0.00	0	0.00	2	6.06	2	2.56
Powered kite training and competition	0	0.00	4	16.00	3	9.09	7	8.97
Practice and compete in non-motorized kite flying	0	0.00	0	0.00	1	3.03	1	1.28
Sailing	0	0.00	3	12.00	0	0.00	3	3.85
Skateboard	0	0.00	0	0.00	0	0.00	0	0.00

Sports	Managers (n=20)		Tourists (n=25)		Local people (n=33)		Total (n=78)	
	m_i	%	m_i	%	m_i	%	m_i	%
Mountain bike	2	10.00	4	16.00	4	12.12	10	12.82
Mountain bike	3	15.00	3	12.00	7	21.21	13	16.67
Mountain Skateboarding	0	0.00	0	0.00	0	0.00	0	0.00
Sport climbing	0	0.00	0	0.00	0	0.00	0	0.00
Natural climbing	7	35.00	12	48.00	16	48.48	35	44.87
Running on hilly terrain	9	45.00	13	52.00	15	45.45	37	47.44
Horse racing	2	10.00	2	8.00	13	39.39	17	21.79
Sports fencing	0	0.00	0	2.00	0	0.00	0	0.00
Sport shooting	0	0.00	3	12.00	0	0.00	3	3.85
Archery	4	20.00	7	28.00	13	39.39	24	30.77
Gymnastics	0	0.00	0	0.00	0	0.00	0	0.00
Acrobatic gymnastics	0	0.00	2	8.00	0	0.00	2	2.56
Rowing, Canoeing and Traditional Boat Racing	3	15.00	4	16.00	7	21.21	14	17.95
Kayaking on the waterfall	2	10.00	1	4.00	9	27.27	12	15.38

Table 3 shows that adventure sports activities in the Northern Midlands and Mountains region of Vietnam are concentrated in several disciplines that reflect the region's geographical characteristics, natural resources, and cultural traditions. The most frequently practiced activities are running on mountainous terrain (47.44%) and natural mountain climbing (44.87%), indicating the strong influence of the region's mountainous landscape and natural environment on sports participation. Other activities, including archery (30.77%), horse racing (21.79%), and traditional boat racing, rowing, and canoeing (17.95%), also demonstrate relatively high participation rates, reflecting their close connection with local traditions and the cultural practices of ethnic minority communities. Meanwhile, motorized paragliding (15.38%) and kayaking on waterfalls (15.38%) represent adventure sports that take advantage of the region's natural landscapes and climatic conditions, attracting both local residents and tourists. Other activities, such as skateboarding, bungee jumping, and other aviation sports, account for a negligible proportion of participation, potentially due to limited infrastructure, technical requirements, and associated risks. Overall, the findings suggest that adventure sports development in the region is strongly influenced by the availability of natural resources and the cultural characteristics of local communities.

The research results show that the choice to focus on sports associated with natural conditions and traditional culture reflects the trend of “localizing” adventure sports in the regional context. The results also show the potential to develop sports such as trail running, mountain climbing, kayaking

or paragliding into typical regional sports-tourism products, while affirming the role of adventure sports not only in physical training but also in promoting the cultural-tourism image of the region. The survey results of the target groups on motivation and need to practice adventure sports are presented in Table 4.

Table 4. Survey results of target groups on needs and motivations for practicing adventure sports (n=446)

Content	Management staff		Tourist		Local people		Total	
	m_i	%	m_i	%	m_i	%	m_i	%
Training needs	**(n=92)**		**(n=156)**		**(n=198)**		**(n=446)**	
Need to practice	29	31.52	55	35.26	86	43.43	170	38.12
No need to exercise	63	68.48	101	64.74	112	56.57	276	61.88
Exercise motivation	n=29		n=55		n=86		n=170	
Affirm yourself	7	24.14	15	27.27	20	23.26	42	24.71
Challenge your limits	12	41.38	21	38.18	35	40.70	68	40.00
Overcome fear	9	31.03	18	32.73	28	32.56	55	32.35
Enjoy the workout	15	51.72	32	58.18	41	47.67	88	51.76
Like to be close to nature	16	55.17	31	56.36	40	46.51	87	51.18
Physical training	14	48.28	30	54.55	43	50.00	87	51.18
Socialize and meet people with similar passions	15	51.72	31	56.36	42	48.84	88	51.76
Learn about a new sport	6	20.69	13	23.64	18	20.93	37	21.76
Seeking stimulation	8	27.59	11	20.00	21	24.42	40	23.53
Meet the expectations of loved ones	7	24.14	12	21.82	16	18.60	35	20.59
Reasons for not participating in training	n=9		n=30		n=53		n=92	
Time not guaranteed	5	55.56	16	53.33	29	54.72	50	54.35
Not financially secure	6	66.67	18	60.00	33	62.26	57	61.96
No training tools or equipment	7	77.78	20	66.67	39	73.58	66	71.74
No training instructor yet	6	66.67	19	63.33	32	60.38	57	61.96
Safety conditions during exercise are not sufficient.	7	77.78	17	56.67	28	52.83	52	56.52
No one to practice with	5	55.56	14	46.67	25	47.17	44	47.83

Table 4 shows that although only 6.28% of respondents participated regularly and 11.21% participated occasionally in adventure sports, 38.12% expressed an interest in participating in these activities. This indicates a considerable gap between actual participation and potential demand, suggesting significant opportunities for the development of adventure sports in the Northern Midlands and Mountains region of Vietnam. Regarding participation motivations, the main factors included seeking excitement (51.76%), socializing and meeting people with similar interests (51.76%), enjoying proximity to nature (51.18%), physical fitness (51.18%), and challenging

personal limits (40.00%). These findings indicate that participation is driven by a combination of recreational, physical, psychological, and social motivations. However, several barriers continue to limit participation, particularly the lack of appropriate training equipment (71.74%), financial constraints (61.96%), insufficient availability of qualified instructors (61.96%), and inadequate safety conditions (56.52%). These obstacles highlight the need for improved infrastructure, accessible training opportunities, qualified personnel, and appropriate safety measures to support the sustainable development of adventure sports in the region.

In the context of the increasing trend of combining sports – tourism – culture , the large gap between demand and practice shows that the potential has not been effectively exploited. This suggests that to develop adventure sports sustainably in the region, priority should be given to investing in facilities, training guides, and building a safe training environment, while integrating cultural and local elements to increase attractiveness and feasibility.

3.3.3. Survey results on the legal basis for developing adventure sports in the Northern Midlands and Mountains of Vietnam

Adventure sports are a very new content in sports activities in Vietnam, so the legal corridor for adventure sports activities has not been developed commensurate with the available potential. The Department of Culture, Sports and Tourism of Vietnam and the Northern Midlands and Mountains provinces have not issued many documents regulating this activity, so the implementation of training, organizing competitions, exploiting potential... still faces many difficulties.

While in the 2000 Ordinance on Physical Education and Sports (2000) and the 2006 Law on Physical Education and Sports (National Assembly, 2006), extreme sports were not mentioned at all, in the 2018 amended Law on Physical Education and Sports (National Assembly, 2018), the conditions for business and activities of extreme sports were specifically regulated in Part 2, Article 56. This is a turning point marking the recognition of the development of extreme sports in Vietnam.

On July 17, 2019, the Ministry of Culture, Sports and Tourism issued Circular No. 04/2019/TT-BVHTTDL on the list of sports activities requiring a training instructor, the list of adventure sports activities, which stipulates the list of sports activities requiring a training instructor including: Training and competition in artificial rock climbing; ice skating; horse racing; sport fencing; shooting; archery; gymnastics; acrobatics; boat racing. The list of adventure sports activities according to Circular No. 04/2019/TT-BVHTTDL includes: Training and competition in paragliding, kite flying with and without engines; natural mountain climbing; recreational scuba diving; jet skiing

on the sea; off-road sports cars; sports motorcycles; mountain bikes (Ministry of Culture, Sports and Tourism, 2019). This is the only document issued specifically for adventure sports activities in Vietnam, and is an important legal corridor in ensuring professionalism and safety in the development of adventure sports in Vietnam.

In provinces, cities and sectors, there are no separate documents issued for adventure sports activities. It can be seen that the legal basis for developing adventure sports in Vietnam in general and the Northern Midlands and Mountains in particular is still very limited .

However, at the provincial level, especially in the Northern Midlands and Mountains, there is no separate document regulating adventure sports activities. The main reasons are: (1) new nature, high potential risks, not yet widely socialized; (2) infrastructure, professional staff and safety conditions are not guaranteed; (3) management awareness is still focused on traditional sports. This makes it difficult to implement training, organize competitions and exploit local potential, even though the area has very suitable natural conditions (hills, rivers, streams, diverse terrain).

To overcome current limitations, it is necessary to soon issue specialized legal documents for the development of adventure sports, first at the national level and then at the provincial level, especially in the Northern Midlands and Mountains. First, the legal framework needs to clearly define safety standards, regulations on training coaches, guides and risk control mechanisms. In addition, integrating adventure sports into local sustainable tourism development strategies will facilitate the exploitation of natural advantages, while at the same time preserving indigenous culture. Priority policies need to focus on: (1) building standard infrastructure and equipment; (2) encouraging socialization and attracting businesses to invest; (3) promoting international cooperation to learn management experience and development models; (4) enhancing communication and raising public awareness of the meaning and benefits of adventure sports. A comprehensive legal corridor not only ensures safety and effective management, but also opens up opportunities for sustainable socio-economic development for mountainous areas.

4. CONCLUSIONS

The results of the assessment of the current status of adventure sports development in the Northern Midlands and Mountains of Vietnam show that: Most provinces assess the development of adventure sports at Weak level; most of the motivations are positive; the reasons for not participating in training are mainly due to economic conditions, lack of facilities and equipment, lack of instructors, etc.; Sports with The participation in training is quite concentrated in all 3 groups of

surveyed subjects including : Skateboarding, roller skating on urban terrain; Paragliding training and competition; Mountain biking; Mountain biking; Natural climbing; Running on mountainous terrain; Horse racing; Archery; Rowing, Canoeing and traditional boat racing and Kayaking on waterfalls.

The policy mechanism for developing adventure sports in the study area is still very limited. To develop adventure sports in Vietnam in general and the Northern midlands and mountainous areas in particular, the issuance of relevant documents and the creation of a legal corridor for development is extremely urgent.

The study identified 14 basic criteria in assessing the current status of adventure sports development in the Northern Midlands and Mountains of Vietnam. The survey results showed that most localities assessed the level of development of these sports as weak; while the motivation for participation was mainly positive, the biggest barriers still came from limitations in economic conditions, facilities and equipment that did not meet requirements and lack of professional instructors. Some sports were recorded to have concentrated training in all three groups of surveyed subjects including: skateboarding, rollerblading, motorized paragliding, mountain biking, natural climbing, trail running, horse racing, archery, rowing, canoeing, traditional boating and kayaking.

To promote the development of adventure sports, priority should be given to: (1) promulgating and perfecting legal documents to create a clear legal corridor; (2) investing in infrastructure and standard equipment; (3) building a mechanism to encourage socialization and mobilize resources from businesses and the community; (4) training and developing a team of professional coaches and guides; and (5) integrating adventure sports development with ecotourism and community tourism to improve socio-economic efficiency. These policies need to be implemented synchronously, with priority and in accordance with the characteristics of the Northern Midlands and Mountains region.

5. RECOMMENDATIONS

Based on the research findings, several recommendations can be proposed. First, the Departments of Culture, Sports and Tourism in the Northern Midlands and Mountains provinces should prioritize the development of adventure sports by establishing an appropriate legal and regulatory framework. Although the region has considerable potential for promoting diverse adventure sports among local communities and tourists, the existing policy mechanisms and regulatory provisions remain insufficient. Therefore, introducing and strengthening relevant legal

documents, regulations, and safety standards is essential to creating favorable conditions for the sustainable development of these activities.

Second, the Departments of Culture, Sports and Tourism, together with provincial Sports Training and Competition Centers, are encouraged to use the findings of this study to conduct comprehensive assessments of the current state of adventure sports development, identify existing limitations, and establish appropriate development strategies.

Finally, future research should expand the scope of investigation and explore comprehensive solutions for promoting adventure sports in the Northern Midlands and Mountains region, with particular attention to infrastructure development, human resource capacity, safety management, and mechanisms for encouraging participation among local communities and tourists.

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ACKNOWLEDGEMENTS

The researchers would like to thank all participants who voluntarily participated in this study. Thank you to the experts and volunteers who helped guide and support this study.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

FUNDING

This research received no external funding.

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