Optimizing Sports Human Resources to Enhance Physical Literacy and Foster Sports Participation

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Abstract

Development Sports in Karanganyar Regency face challenges in improving the quality and quantity of sports human resources, physical literacy, and sports participation. This study uses a quantitative descriptive method with a survey type to evaluate the three dimensions. Sampling techniques include stratified random sampling for sports human resources and multi-stage random sampling for physical literacy and sports participation. Data were collected from three sub-districts representing various levels of regional development and analyzed using the Sport Development Index (SDI). The results showed that the sports human resource dimension was in the low category with an index of 0.0004, physical literacy was in the medium category with an index of 0.6211, and sports participation was also in the low category with an index of 0.2666. These findings emphasize the need for optimization of sports human resources to improve physical literacy and sports participation as a whole. Recommendations include improving sports infrastructure, developing training and certification of human resources, and more effective physical literacy programs.

Keywords: *Sports Human Resources; Physical Literacy; Sports Participation; Sport Development Index; Karanganyar Regency*

Introduction

Sports development in Karanganyar Regency is an important focus in improving community welfare and sports achievements. This development does not only cover infrastructure, but also aspects of human resources, physical literacy, and community participation. Along with the development of the times, sports development now focuses more on the integration between physical and non-physical aspects. Physical literacy and the quality of sports human resources, such as coaches, teachers, instructors, and experts, are important elements that must be considered in order to advance sports in this area.

Human resources are the main driving force in sports life, each of these roles has specific responsibilities that support the development of sports at different levels. (Kristiyanto, 2012). In the sports sector, human resource development increasingly requires not only technical and tactical knowledge, but also managerial and leadership skills to meet the growing demands of modern sports organizations. (Adair D., 2020). Lecturers and teachers of physical education, sports, and health focus on physical

education and health from elementary school to college, ensuring effective and quality learning. Quality physical education not only creates quality athletes, but also creates healthy and active individuals. (Gibbons, 2015). Sports coaches in schools and clubs play a vital role in honing athletes' skills and developing talent, with club coaches often having specialist certification and focusing on technique and strategy in a particular sport. It is through these specific skills that a coach is able to create an effective training program. (Smith, 2018). Sports instructors and motivators contribute to the dissemination of sports culture by directing mass sports activities and popularizing sports according to the 5M principle (cheap, cheerful, mass, interesting, and beneficial) (Kristiyanto, 2012). Meanwhile, sports managers and administrators ensure that the management and administration of sports activities run smoothly. Nutritionists, technicians, and sports researchers also contribute to the development of athletes and the maintenance of equipment and research for the advancement of sports. (Kristiyanto, 2012). The role of sports teams is very important to create a supportive environment for the sports community. (Roberts, 2021), thus collaboration between roles in sports human resources is key to encouraging increased sports development in a region.

Physical literacy is another important aspect in sports development. (Harvey, 2006) defines physical literacy as a person's ability to participate in physical activities with confidence and competence. (Whitehead, 2006) emphasizes that physical literacy includes the motivation, confidence, and knowledge to maintain physical activity throughout life. High levels of physical literacy help individuals stay active and healthy, which has a positive impact on their well-being and society ((Harvey, 2006)(Whitehead, 2006)). Increasing physical literacy in Karanganyar Regency is important to ensure that people understand the benefits of sports and make it part of their daily lifestyle, considering that sports not only provide benefits for the body, but also play an important role in shaping people's character. (Kosasih, 2013).

Community participation in sports is a key indicator of the success of sports development. (Huraerah, 2008) explains that participation is the act of taking part in an activity, while (Adisasmita, 2006) adding that participation includes the involvement of community members in planning and implementing development activities. According to (Cheong, 2014) active participation in sports not only improves the quality or impact on oneself but also builds a sense of responsibility to continue exercising. In Karanganyar Regency, community participation in sports needs to be increased through policies and programs that support active involvement. This is in line with the opinion (Kearney, 2017) which states that an inclusive policy can increase community participation and open access to various sports activities.

These three aspects, namely human resources for sports, physical literacy, and sports participation, are interrelated and influence each other. Improving the quality of human resources and physical literacy is expected to increase sports participation, which will ultimately strengthen sports development in Karanganyar Regency.

This study aims to determine the quantity and quality of human resources for sports in Karanganyar Regency, the level of physical literacy of the community, and the level of community participation in sports. It is hoped that the results of this study can be a basis for policy makers to develop effective strategies in improving sports achievements in Karanganyar Regency and community welfare through sports.

Research Methods

The research method used in this study is a quantitative descriptive research method and uses a survey research type. The use of quantitative descriptive methods and survey research types is because it is in accordance with the objectives of the study, namely related to sports human resources, physical literacy and sports participation in Karanganyar Regency. The data obtained is in the form of numbers

(quantitative) which are then converted into a descriptive form (description) which aims to facilitate overall understanding.

The implementation of this research in Karanganyar Regency, with the main focus on three aspects. In the first aspect regarding human resources for sports using stratified random sampling technique, in the second aspect regarding physical literacy and the third aspect regarding sports participation using multi stage random sampling technique, namely a combination of stratified random sampling and cluster random sampling, the character inherent in this sampling technique is the level of progress of a region and the age of the community.

The implementation of data collection was carried out in three randomly selected sub-districts, representing advanced, moderate and underdeveloped sub-districts. In each sub-district, one village was selected randomly, then from each village one RW was selected, and from each RW one RT was selected, this aims to make the sample representative, this is a picture of the sampling area:
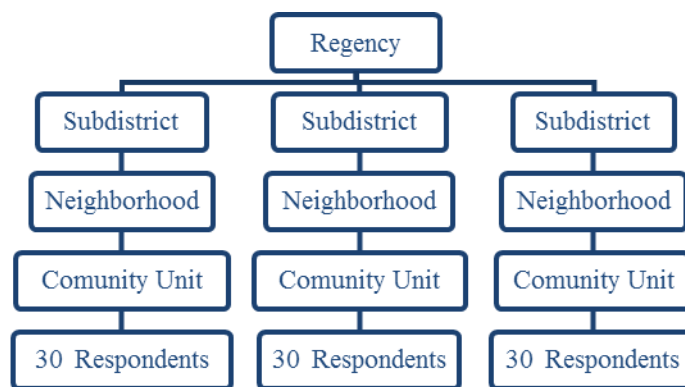
After determining the sample, the data collection was continued. In the first aspect, namely sports human resources, the scope or coverage only covers one sub-district. Therefore, a sub-district with a moderate level was chosen to represent the area. The implementation of data collection involved a database on sports human resources in the sub-district area, which includes the number of physical education teachers, sports coaches, sports instructors, and sports volunteers. Data were collected from the sub-district, the Karanganyar Indonesian National Sports Committee, and the Karanganyar Education and Culture Office. The instrument used was an open questionnaire in the form of short answers regarding the number and quality of sports human resources.

The implementation of data collection on the physical literacy aspect and the sports participation aspect was carried out in each sub-district by first presenting 30 respondents from each designated RT so that the total number of respondents involved was 90 people with an age range of 10-60 years to fill out the prepared questionnaire. The questionnaire is in the form of questions that must be responded to by each respondent by crossing out the answer choices that correspond to what the respondent experienced.

After the data regarding human resources for sports, physical literacy, and sports participation have been collected and then processed into a dimension index form using the Sport Development Index data processing procedure. The data analysis technique used has been adjusted to the Sport Development Index data analysis technique including the dimensions of human resources for sports, physical literacy, and sports participation According to (Mutohir Cholik T., 2007), the formula used in analyzing the dimension index is as follows:

$$\text{DIMENSION INDEX (SDI)} = \frac{\text{(ACTUAL VALUE - MINIMUM VALUE)}}{\text{(MAXIMUM VALUE - MINIMUM VALUE)}}$$

Index analysis begins by calculating the actual value of each dimension. For the sports human resources dimension, the actual value is obtained by dividing the total number of sports human resources by the number of residents aged over 5 years. Then, the actual value of physical literacy is calculated by dividing the total score of the questionnaire answers by the total number of respondents, in the physical literacy dimension the actual value is sought per aspect (knowledge, behavior, attitude) first due to the different personal weights and number of questions, then continued with the index per aspect after that at the stage of calculating the dimension index it is determined by dividing or averaging all aspects. Meanwhile, the actual value of the sports participation dimension is obtained by dividing the number of people who participate in sports at least three times a week by the total number of respondents multiplied by one hundred. After the actual value of each dimension is known, the next step is to calculate the dimension index using a predetermined formula. In the sports human resources dimension, the minimum value is 0 and the maximum value is 2.08. In the physical literacy dimension, the minimum value for the knowledge aspect is 0 and the maximum value is 3, the behavior aspect the minimum value is 2 and the maximum value is 10, and in the attitude aspect the minimum value is 2 and the maximum value is 10. In the sports participation dimension, the minimum value is 0 and the maximum value is 100, which is in accordance with the 2022 SDI measurement guidelines. (Deputy, 2021).

In the final stage, after each dimension index is calculated, the index is categorized based on the norms used as justification for the obtained index. The following are the norms in SDI:

Table 1. Sports Development Norms (Norms and Categorization) (Sports., 2021)

Index	Categorization
0.800-1	= High Category
0.500-0.799	= Middle Category
0-0.499	= Low Category

Findings

After the research was conducted, it was found that in Karanganyar Regency there are 17 sub-districts covering 15 villages and 162 urban villages. Karanganyar Regency is an area that has various levels of progress, one of which is according to the location of each sub-district based on the distance from the center of the district capital, so the sampling area includes: Karanganyar District represents developed areas, Matesih District represents moderate areas, and Jatiyoso District represents underdeveloped areas. In each sub-district, one urban village was selected randomly, and from each sub-district one RW was selected, and from each RW one RT was selected, then from each RT a sample of 30 people was taken with a composition of 50% women and 50% men. The samples in each sub-district were classified based on age groups as follows: the 10-19 year age group consisted of 6 people, the 20-44 year age group consisted of 16 people, and the 45-60 year age group consisted of 8 people, so that the total sample was 90 people.

The dimension of sports human resources has a sub-district area sector where the sample used is a medium-level sub-district, namely Matesih Sub-district, the selection of medium-level sub-districts is assumed to be representative of developed, medium, and underdeveloped areas. Data on sports human resources were obtained through a survey to the Youth and Sports Service, Education and Culture Service and the Indonesian National Sports Committee of Karanganyar Regency. Sports human resource data includes the quantity and quality of teachers' physical education, sports and health, coaches, instructors, and sports volunteers, the following data results were obtained:

Table 2. Sports human resource data in Karanganyar Regency

Subdistrict	: Matesih
Regency	: Karanganyar
Province	: Central Java

No	Type of Power	Amount		Total	Certified Amount
		Man	Woman		
1	Physical Education Teacher	24	4	28	13
2	Coach	8	1	9	0
3	Instructor	0	0	0	0
4	Volunteer	0	0	9	0
		32	5	37	

Then, to find out the actual value and dimension index of sports resources, data is needed regarding the number of residents aged 5 years and over as control data. The following is data on the population aged 5 years and over in Matesih District:

Table 3. Population Data Aged 5 Years and Over

No	Matesih District	L	P	L&P
1	Age 0-4	1333	1348	2681
2	age >5 years	21604	21656	43260
Total		22937	23004	45941

The results of the data above show the number of residents aged 5 years and over is 43260 people consisting of 21656 women and 21609 men. The data is the basis for knowing the human resource dimension index of sports in Karanganyar Regency, the following is a description of the data obtained according to the sports development index analysis:

Table 4. Description of Human Resources Data for Sports in Karanganyar Regency

No	Sports Human Resources Data	Man	Woman	Total
1	Human resources Sports	32	5	37
2	Residents aged 5 years and above	21604	21656	43260
Actual Value		0.000855294		
Sports Human Resources Dimension Index		0.000411199		
		0.0004		
Category Index		Low		

From the description of the research results above, it shows that the dimension of sports human resources in Karanganyar Regency obtained an actual value of 0.0008 and the sports human resources dimension index of 0.0004 based on sports development norms according to the sport development index study is included in the low category.

The physical literacy dimension was measured from 90 respondents in Karanganyar Regency. Data were collected through a questionnaire covering three aspects: knowledge, behavior, and attitude.

Each aspect has a different number of questions and scoring. The instrument used is in the form of choices, which are selected according to the real conditions of the respondents by crossing out the most appropriate statement. The following is a description of the research results regarding the physical literacy dimension in Karanganyar Regency.

Table 5. Description of Physical Literacy Data of the Community in Karanganyar Regency

No	Subdistrict	Respondents	Total Knowledge	Total Behavior	Total Attitude
1	Karanganyar	30	43	233	222
2	Matesih	30	20	221	226
3	The Great	30	61	249	220
Amount		90	124	703	668
Actual Value			1.377777778	7.811111111	7.422222222
Index			0.459259259	0.726388889	0.677777778
Physical Literacy Dimension Index	**0.621141975**				
	0.6211				
Category	**Intermediate**				

Based on the data description above, it is known that the physical literacy dimension in Karanganyar Regency obtained the following actual values: for the knowledge aspect of 1.3777, for the behavior aspect of 7.8111, and for the attitude aspect of 7.4222. This actual value is calculated per aspect because of the differences in scoring and the number of questions in each aspect in the instrument used. Furthermore, the physical literacy index value is calculated as follows: the index for the knowledge aspect is 0.4592, the index for the behavior aspect is 0.7263, and the index for the attitude aspect is 0.6777. The average of the three indices produces a physical literacy dimension index of 0.6211. Based on the norms of sports development according to the Sport Development Index study, this physical literacy dimension index is included in the medium category.

The dimensions of sports participation in this study involved 90 respondents, with data collected through a questionnaire. In the questionnaire, respondents were asked to cross out the answers that fit their conditions based on the questions provided. The definition of sports participation here refers to a person's involvement in physical activity at least three times a week. Therefore, data calculations are only carried out for respondents who actively participate in sports at least three times a week.

Table 6. Description of Sports Participation Data in Karanganyar Regency

SPORTS PARTICIPATION ≥3 TIMES PER WEEK						
NO	Subdistrict	Respondents	(10-19) Th	(20-44) Years	(45-60) Years	Amount
1	Karanganyar	30	5	4	2	11
2	Matesih	30	0	1	1	2
3	The Great	30	0	5	6	11
Total		90				24
Actual Value	26.66666667					
Participation Dimension Index Or	0.266666667					
	0.2666					
Category	**Low**					

Based on the description of sports participation data in Karanganyar Regency, it can be seen that out of 90 respondents, only 24 respondents or 26.6% actively participated in sports at least three times a week. In addition, the actual value of the sports participation dimension in Karanganyar Regency was recorded at 26.6666 and the sports participation dimension index of Karanganyar Regency reached 0.2666. Referring to the norms of sports development according to the Sport Development Index study, the sports participation dimension index is included in the low category.

Discussion

1. Optimizing Sports Human Resources

The management of sports human resources in Karanganyar Regency requires a strategic and planned approach to achieve optimal results. The data collection process involves several key agencies, namely Indonesian National Sports Committee Karanganyar Regency, Karanganyar Regency Education and Culture Office, and Region VI Education Office Branch. The data collected covers various aspects, such as coaches, instructors, physical education teachers, and sports volunteers. In particular, in Indonesian National Sports Committee, data includes trainers, instructors, and volunteers, while in the Department of Education and Culture and the Regional Education Department Branch VI, the focus is on physical education teachers at the elementary, junior high, and senior high and vocational school levels.

The results of the analysis show that in Karanganyar Regency there are 37 individuals involved in sports human resources, of which 35% have certificates, while 65% are not certified. The sports human resource index calculated using the Sport Development Index produces a figure of 0.0004, which indicates that sports human resources in Karanganyar Regency are relatively low, in the range of 0.000–0.499. This figure reflects that the availability and quality of sports human resources in this area are still inadequate.

Optimizing human resources in sports requires special efforts from the government, including capacity building through seminars, workshops, and comprehensive training. Continuous training and certification are very important, especially for sports professionals to remain competent. (Collins, 2019). These programs are important to improve the quality of human resources in sports, in addition, there needs to be recruitment, data collection, and coaching that focuses on improving sustainable capabilities. (Sukardi, 2020). The existence of volunteers who act as managers, administrators, and committee members is also very significant in supporting the progress of sports in this area. Strong support from the government is key in ensuring that human resources for sports can develop well, which will ultimately contribute to the progress of sports as a whole in Karanganyar Regency.

To support these efforts, regular data collection and real-time database management are essential. This database system allows stakeholders to effectively monitor the needs and capabilities of sports human resources. With a well-managed database, the government can organize more targeted sports training and events, so that it is hoped that the quality of sports human resources and the quality of sports in Karanganyar Regency can increase significantly.

2. Enhancing Physical Literacy

Physical literacy is a key element in sustainable sports development in Karanganyar Regency. With the physical literacy index currently in the middle category, there is a great opportunity to improve people's understanding, behavior, and attitudes towards physical activity. Improving physical literacy requires a comprehensive approach, and one of the important factors that plays a role is the quantity and quality of sports human resources.

Sports human resources, such as physical education teachers, coaches, instructors, and sports volunteers, play a vital role in shaping physical literacy in the community. When sports human resources have good quality and competence, they can provide more effective education, motivate people to participate in physical activities, and create programs that suit the needs of the community. By improving the quality and quantity of sports human resources, we can ensure that physical literacy programs are well designed and implemented efficiently.

High-quality sports human resource training and development programs will directly contribute to improving physical literacy. Well-trained coaches and instructors can deliver accurate and relevant information about the benefits of sports, and inspire people to engage in physical activity. In addition, increasing the number of skilled sports human resources will ensure that more individuals have access to quality physical education, which in turn will improve their knowledge, attitudes, and behaviors towards physical activity.

To achieve this goal, support is needed from various parties, including the government, educational institutions, and local communities, in providing training and development for sports human resources. This effort must be accompanied by continuous evaluation and monitoring to ensure that physical literacy programs are effective and relevant to community needs.

By strengthening human resources for sports and improving the quality of physical literacy programs, Karanganyar Regency can optimize community participation in sports. This will contribute to improving physical fitness and overall public health, as well as supporting more inclusive and sustainable sports development. Improving physical literacy will create a solid foundation for active engagement in physical activity, which is a key indicator of the success of sports policies in the region.

3. Fostering Sports Participation

Sports participation is a fundamental aspect in improving physical fitness and community productivity. Based on data obtained from 90 respondents in Karanganyar Regency, it can be seen that 86 people were involved in sports activities in the past week, with sports frequencies varying from one to five times a week. The data obtained regarding sports participation shows that from the total research sample in Karanganyar Regency, there were 24 people who were recorded as doing sports activities at least three times a week. Although there is a positive tendency towards sports participation, the actual value of sports participation in Karanganyar Regency, which was recorded at 0.2666, is still relatively low according to the Sport Development Index norm.

The low category of sports participation index indicates challenges in increasing community involvement in regular physical activity. To increase sports participation, strategic steps need to be taken involving various dimensions, including increasing the quantity and quality of sports human resources and physical literacy. Quality human resources can provide the guidance and motivation needed to encourage people to be more active in sports. In addition, good physical literacy will equip people with knowledge and positive attitudes towards physical activity, thus encouraging them to participate more in sports.

Government support in providing and managing sports facilities that are accessible to the public is also an important factor in increasing sports participation. Adequate and easily accessible facilities can encourage people to exercise more regularly. By integrating improvements in the quality and quantity of sports human resources, as well as increasing community physical literacy, it is hoped that sports participation can increase significantly. This increase in participation will ultimately have a positive impact on physical fitness and community productivity, which are the main indicators of the success of sports policies in Karanganyar Regency.

Conclusion and Suggestions

Optimization of sports human resources in Karanganyar Regency is the key to improving physical literacy and sports participation. Although various efforts have been made, the quality and quantity of sports human resources still need improvement, physical literacy is at a medium level, and sports participation is relatively low. These three dimensions are interrelated and influence the effectiveness of sports development in this area.

The Karanganyar Regency Government and the Youth and Sports Agency need to commit to planning and maintaining sports infrastructure, both indoor and outdoor, and involve the sub-district in opening open sports spaces. Holding sports festivals involving various age groups is also recommended to increase public interest. In addition, the Education and Sports Agency Indonesian National Sports Committee Karanganyar Regency must focus on improving the quality and quantity of human resources in sports through database creation, data integration, and effective training and certification programs. These steps are expected to improve physical literacy and sports participation in Karanganyar Regency.

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