

THE INFLUENCE OF INFRASTRUCTURE MANAGEMENT ON SPORTS DEVELOPMENT AT STATE POLYTECHNICS IN BANDUNG

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ABSTRACT

Polytechnic as a higher educational institution trains students to be capable of becoming independent human. It is also responsible for equipping students with competence to compete in the workplace. Sport serves as a means of character and life skills development in students. It is well supported by the infrastructure management in Polytechnic. Based on the formulation of the problem mentioned above, the general purpose of this study is to determine the effect of infrastructure management on sports development in the State Polytechnic of Bandung. This study employed quantitative approach with survey method to obtain data from questionnaires and physical fitness test. The participants of the study are 77 students from two state polytechnics in Bandung. The result from data processing and analysis showed that 95.7% of sports participation rate is influenced by infrastructure management and the rest of 4.35 is influenced by other unexplainable variables, which means that facility and infrastructure management give positive influence on sports participation. In addition, other results showed that 93.0% of physical fitness figures are influenced by infrastructure management and 7.0% is influenced by other unexplainable variable, which means that infrastructure gives significant influence on physical fitness. It shows that if sports infrastructure is managed well, then it will greatly influence sports development.

KEYWORDS: management, infrastructure, sports development

INTRODUCTION

The creation of human resource to produce talent athlete candidates is done through the announcing of national movement (in mass) in order to make sports to become a lifestyle, empowerment (revitalization) of basic sports such as run, jump and throw (track and field) in units level of early childhood education, elementary school, secondary school and higher education and facilitation of holding sports competition among educational units and facilitation to provide qualified instructor/trainer/sports teacher in community. The Act No.3/2005 about National Sports System mentions that sports pillar not only about sports achievement, but also educative sport and recreation sport. In addition, based on national data, the result of 2003 BPS census showed that people who do sport for achievement purpose are 7.80% from the total of population. Meanwhile, most people (65.20%) do sport for health and 27% for another purpose. (Mutohir and Maksum, 2007: 5).

Mutohir and Maksum (2007:3) had initiated the idea to make an instrument to measure the success of sports development. That instrument is called as Sports Development Index (SDI). The dimensions used are 1) sports participation, 2) Open space, 3) Sports Human Resource, and 4) Fitness. The Criteria of SDI: 0.800 – 1 is high; 0.500 – 0.799 is medium; and 0 – 0.499 is low).

Bandung as the capital of West Java province in Indonesia is considered the country's third largest city by population. It is located 140 kilometres from Jakarta, the capital of Indonesia. There are many polytechnics in Bandung, but only two of them are government owned polytechnic. They are Politeknik Manufaktur Negeri Bandung (Polman) and Politeknik Negeri Bandung (Polban).

The sports activity building in higher education particularly in Bandung and its surrounding until now is still supplemental. It means that sport activity and sports in campuses only limited to fulfil the demand of student's sport activity unit as on activity prerequisite of student's affair field particularly in Polytechnic. Differ with sports activity development in other countries, Siedentop (1990) and Danylchuk (2007) in Ma'mun (2012:2) state that, "Sports in university or academy level is manifested in the varied forms, started from informal recreation opportunity until elite level competition opportunity and tight organized. The recreation sports comprise fitness activity, aquatic, recreation, physical education and sport program (intra curricular), sport club, outdoor activity, until league competition in the form of intramurals."

The sports building programs in Polytechnic which are given to students among others are in POLMAN Bandung. There are three programs run namely intra curricular program in the form of sport practice lecturers, co-curricular program with character development which requires students to follow the compulsory activity each Friday, among other students choose sport activity, and extra-curricular program in the form of institution suggestion to follow students organization activity or Students Activity Unit which are expected to play role in enhancing sports achievement and soft skill values (Sadikin, *et al*, 2015:273). In practice, students are allowed to choose sports activity from the existing sports branch. Whereas POLBAN holds student's development program in the form of extra-curricular to enhance soft skill and life skill. Realizing students' need for fitness to support the fitness in running their study, character development program and soft skill enhancement need a commitment from the institution regarding sports development and building. The institution supports in the effort to enhance sports building in Polytechnic with some leaders' policies which are very helpful in achieving the goal of the sports program.

Management can be applied to organizations, including educational institution. Each organization has its own norms in applying management as a system which runs organization wheel. Educational infrastructure management has a task to regulate and maintain educational infrastructure to give contribution optimally which is also an educational process. This management activity comprises planning, supply, supervision, investment, eradication and accountability (Mulyasa, 2011:50).

Infrastructure management is an activity which prepares all equipment/materials to implement the educational process in schools. Infrastructure management is needed to help the feasibility of teaching and learning process. Educational infrastructure includes all movable and immovable objects needed to run educational function and to support teaching and learning process both directly and indirectly.

Bafadal (2004:8) states that “School equipment management can be defined as a process of empowering all educational equipment in school effectively and efficiently”. Educational quality enhancement starts from learning quality enhancement. The resources are needed to support learning quality enhancement. Educational infrastructure is one educational resource which supports the learning process, and it has direct influence in achieving learning goal (Permendiknas RI, 2006:10). Infrastructure as input instrument and integral part of the educational system needs to be managed professionally to be meaningful for school quality enhancement and the effective and efficient educational process.

Kristian (2012) claims that in modern life sports have become life guidance and need to make humans become better. Sport is increasingly needed by humans in the life which is increasingly complex and automatic, in order that they can maintain its existence and avoid various disturbance or dysfunction as a cause of Hypo Kinesis Disease.

Sports development through educational track or schooling which is known with the term ‘physical education’ is done by incorporating physical education content into lesson unit in each track and educational level, from elementary school until higher education including intra curricular as well as extracurricular pedagogy. As for the implementation of sports development through community track is done by a series of activity suitable for the goal of achievement enhancement which comprise problem, talent guiding, athlete candidate cultivation, athlete development, and athlete achievement enhancement.

Sports development can be done formally and informally. Informally, this is developed in families, schools, and societies. Formally, the development of sport is done by the government. To measure the sports development, it is necessary to have a certain kind of instrument that covers the measurement of sports infrastructure, public participation, the availability of human resources, and the physical fitness.

Sports Developmental Index (SDI) is a new term in sports in Indonesia. It is kind of measurement method claimed as a new alternative to measuring the advance in sports building. Sports development is a process which enables humans to have access to do physical activity. It should also enable each person to have the opportunity to grow and develop physically, mentally and socially.

According to Cholik and Maksum (2007: 7), SDI is combination index which reflect the success of sports development based on four basic dimensions: (1) the open space available to do sport, (2) human resource or sports staff who are involved in sport activity; (3) public participation to do sport regularly and (4) the degree of physical fitness achieved by public. If it is concluded, then SDI can be translated in the Indonesian language as IPO (Index Pembangunan Olahraga). Sports Development Index is considered as a parameter to develop sports in Indonesia.

The students' sports development and building as explained above show that each sports activity and the purpose accompanied will influence, both directly and indirectly to national sports development. Each higher education institution, particularly polytechnic in Bandung has tried to build and place sports as one field which should exist in the higher education environment. Optimization in achieving the goal of recreation sports activity as service for all students in the mission of to urge the growth of sports and movement culture and the growth of active lifestyle tend to have been good but have not shown the indicator of sports achievement development. In this case, the manager and management to face sports competition seem not managed well, incidental and tend to be participative. This condition gradually will influence directly and indirectly on the condition of achievement sports development in higher education level even in national level. Therefore, it is needed to conduct survey and research to find out the real condition about sports development and building in higher education level particularly in some polytechnics in Bandung and to investigate its influence on sports building and development in a whole.

Based on background and identification of that problem, the general problem formulation proposed are as follow: "Is there the influence of infrastructure management on sports development at State Polytechnics in Bandung?" Based on the formulation of that problem, the general aim of this study is to find out the influence of infrastructure management on sports development at State Polytechnics in Bandung.

METHODOLOGY

The correlation technique using survey methodology was used to find out the influence of sports infrastructure management on sports development in Polytechnic. Correlation study had been used to find out relation or influence of infrastructure management (X) on sports development (Y). In this case, the main purpose of correlation study is to explain the understanding of the phenomena through identification of relationships among variables.

This study used the quantitative approach with survey method. Correlation design has been used to find out the influence of infrastructure management (X) on sports development (Y).

The instrument used to measure infrastructure management is Questionnaire with indicators had been developed in operational definition according to Mulyasa (2011:50) by using Likert scale. The dependent variable in this study is Sport Development which has been measured by using Sport Development Index (SDI) set forth by Mutohir (2007). The indicator of SDI used in the present study were data about the numbers of Human Resource, open space for sport, sports participation in the form of questionnaire and physical fitness with multistage fitness test. The validity and reliability of this instrument had been tested in national scale by the initiator of this SDI instrument.

Data processing technique in this study used Statistical Product for Social Science (SPSS) program computerization calculation with the reason that this program has statistical analysis capacity which is quite high and data management system in graphical environment by using descriptive menus and simple dialog boxes, so it is easier to understand how to operate it (Sugianto, 2007:1).

The population in this study are students of State Polytechnics in Bandung which consist of: Politeknik Manufaktur Negeri (POLMAN) Bandung and Politeknik Negeri Bandung (POLBAN) with total of 512 students. The population taken were freshmen who had enrolled in physical education course. The simple random sample has been used for sampling, which means selecting some population members to become sample. The sample is taken randomly from each class that previously had education subject. There is 15% of total population taken from POLMAN and POLBAN in accordance with Arikunto's opinion (2010). As for total of sample taken are $512 \times 15\% = 76.8$ and rounded to become 77 students.

RESULT AND DISCUSSION

Result

Regression Test

The following test is regression test to see how big the relation and influence of independent variable on dependent variable. The following is summary of regression test result for each variable.

Table 4.1
 Regression Analysis of Infrastructure Management with Sports Participation
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimation
1	.978	.957	.956	1.04340

- a. Predictors: (Constant), Management
- b. Dependent Variable: Participation Sport

On the table 4.1, it is known that the value of R_{cal} is 0.978 and the value of R Square is 0.957 which means that 95.7% of sport participation rate is influenced by infrastructure management and the rest of 4.3% is influenced by another unexplainable variable. Therefore, it can be concluded that sports infrastructure management give positive influence on sports participation.

The next step is ANOVA test to predict whether infrastructure management can be used to predict sports participation. The following in table 4.2 is summary of testing result.

Table 4.2
 ANOVA Test for Infrastructure Management with Sports Participation
 ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1799.231	1	1799.231	16552.653	.000 ^b
Residual	81.652	75	1.089		
Total	1880.883	76			

- a. Dependent Variable: Participation Sport
- b. Predictors: (Constant), Management

On the table 4.2 above, it is known that the value of F calculation is 1652.653 with probability (Sig.) is 0.000. Because probability is (Sig.) $0.000 < 0.05$, it can be concluded that

management regression model as independent variable can be used to predict sports participation.

Table 4.3
Coefficient of Regression for Infrastructure Management with Sports Participation
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.880	.721		9.539	.000		
	Manajemen	.390	.010	.978	40.653	.000	1.000	1.000

a. Dependent Variable: Sports Participation

The table 4.3 is about the summary of regression coefficient test result which shows whether or not infrastructure management really influence on sports participation. It is known that the value of $t_{\text{calculate}}$ is 40.653 with sig. $0.000 < 0.025$. Therefore, H_0 is rejected, and coefficient of regression is stated as significant. It means that infrastructure management really influences significantly on sports participation.

Table 4.4
Regression Analysis of Infrastructure Management with Fitness

Model	R	R Square	Adjusted R Square	Std.Error of the Estimation	Durbin-Watson
1	.964 ^a	.930	.929	2.05677	1.770

a. Predictors: (Constant), Management
b. Dependent Variable: Fitness

On the table 4.4, it is known that the value of R_{cal} is 0.964 and the value of R Square is 0.930 which means that 93.0% of physical fitness rate is influenced by infrastructure management and the rest of 93.0% is influenced by another unexplainable variable. Therefore, it can be concluded that infrastructure management gives significant influence on physical fitness.

Table 4.5
 ANOVA Test of Infrastructure Management with Fitness
ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	4190.764	1	4190.764	990.753	.000 ^b
Residual	317.241	75	4.230		
Total	4508.005	76			

- a. Dependent Variable: Fitness
- b. Predictors: (Constant), Management

From the table 4.5 above, it is known that the value of $F_{\text{calculation}}$ is 990.753 with probability (Sig.) is 0.000. Because probability (Sig.) $0.000 < 0.05$, it can be concluded that regression model of infrastructure management as independent variable can be used to predict physical fitness.

Table 4.6
 Coefficient of Regression for Infrastructure Management with Fitness
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	Constant	-12.067	1.422		-8.488	.000		
	Manajemen	.595	.019	.964	31.476	.000	1.000	1.000

The table 4.6 describes the summary of regression coefficient test result which shows whether infrastructure management really influence fitness. It is known that the value of $t_{\text{calculate}}$ is 31.476 with $\text{Sig.} 0.000 < 0.025$. Therefore, H_0 is rejected, and coefficient of regression is stated as significant. It means that infrastructure management really gives significant influence on physical fitness.

Discussion

The result of data processing and analysis showed that sports infrastructure management has significant correlation with sports participation rate and physical fitness. It showed that good infrastructure management can enhance sports development particularly at State Polytechnics in Bandung.

The result of data processing and analysis showed that sports infrastructure management gave contribution of 95.7% to participation rate in sport or physical activity and

93% to students' physical fitness. It means that the contribution or influence of sports infrastructure management to sports development is significant. Besides, the result of calculation showed also that 93.0% of physical fitness is influenced by infrastructure management and the rest of 7.0% is influenced by another unexplainable variable. Therefore, it can be concluded that infrastructure management gives significant influence on physical fitness.

According to Mutohir (2007:10), from the report result of Sport Development Index (SDI), infrastructure development is in low category. It is which causes the low rate in sport participation and physical fitness because there is no enough place to play and do sport. It means that infrastructure management can give significant influence on sports development. When infrastructure management is not appropriate, the sports development also tends to be less developed. In contrary, if sports infrastructure management is managed well, then sports development index which includes participation and physical fitness rate can be more active.

Kristivan (2013:85) in this study which is titled "The Influence of Infrastructure Management and Teacher Performance on Students Achievement in Sports Field" gives conclusion in this study that the influence of infrastructure management on student's achievement in sports field is categorized high (0.665) with contribution of 44.22%.

This study gives evidence that good infrastructure management can support achievement. It is in accordance with the result of study which is conducted by the author, that sport infrastructure management gives positive influence to sports development at State Polytechnics in Bandung.

CONCLUSION AND RECOMMENDATION

Based on the above result and discussion, it can be concluded that sports infrastructure management gives positive influence on sports development at State Polytechnics in Bandung.

The result of this study recommends some suggestions for sports infrastructure managers in State Polytechnics in Bandung. It is expected that they can optimize the management to enhance human resource quality in sports development effort. It is because human resource quality will determine the progression and regression of sports development index which is expected to give real contribution to national development. It is expected that by providing infrastructure real contribution in developing Indonesian humans completely through the enhancement of motor physical quality can be derived, so in the future it produces Indonesian people who have strong physic and mental. For students, lecturers, and staffs in State Polytechnics in Bandung, it is expected that they can utilize sports infrastructure as

much as possible in the effort to enhance life quality in becoming physically and mentally healthy individuals.

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