

# The influence of coaches' behavior on achievement motivation and performance of Riau athletes

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## ABSTRACT

This study aimed to analyze and demonstrate the influence of coaches' behavior on the motivation and performance of athletes. This correlational descriptive study utilized the Structural Equation Model (SEM) approach through the smart PLS analysis application. The study comprised a sample of 121 athletes from various individual and group sports. The behavior of coaches', in general, encompasses five variables: mental skill, coaching style, character building, nutrition knowledge, and coaching science. Motivation comprises intrinsic and extrinsic factors, while athletes' performance is determined by their qualities during training and physical test results. Data collection involved distributing questionnaires, supplemented by several interviews to bolster the research findings. The study's findings illustrated the R-squared determinant coefficients, indicating the significance of trainer behavior in athletes' performance, which stands at 0.696 (69.6%), and the impact of trainer behavior on motivation, recorded at 0.448 (44.8%). Among the variables tested, only one variable (character building) showed no discernible effect on athletes' performance ( $p > 0.05$ ). Conversely, the remaining variables significantly influenced achievement motivation, athletes' performance, or mediated variables through achievement motivation to athlete performance ( $p < 0.05$ ). These results are anticipated to serve as a guideline for coaches, emphasizing the pivotal role of coach quality in athletes' technical performance and overall achievement.

## KEYWORDS

Coaches' Behavior; Achievement Motivation; Athletes' Performance

## 1. INTRODUCTION

Motivation is built with high dedication through support, encouragement, and principal spirit, through both intrinsic and extrinsic factors (Moradi et al., 2020), habitually with a positive attitude through verbal communication motivation will itself form a strong character for athletes in the hope that motivation can be a progress of thinking while competing (Laurie et al., 2020). High motivation can improve an athlete's ability to achieve targets and maintain a good level of performance (Elbe et al., 2020). Thus, motivation is an individual's ability to achieve the desired achievement, in which case it is an achievement in the athletes.

A good athlete's performance includes several indicators: movement techniques, skill set strategies, good physical fitness and high mental champions (Tingaz, 2020). In order to achieve the athlete's performance indicators, it is required an intense and routine exercise, in a relatively long time. Exercise in athletes is also not recommended if no clear, measurable, and systematic training program exists. It is expected that with good athlete performance, athlete can win every competition. However, to achieve a good athlete's performance, there must be the support of a coach. Coaches who have quality competencies are believed to be able to create good and improved athlete performance (Foulds et al., 2019; Cook et al., 2021; Rebryna, 2021).

Some research obtained from high school athletes on the understanding of coaching science is very minimal, and if it is classified based on the acquisition of per cent numbers, it is very disappointing; from regional athletes, only 15% have good knowledge, but 47% have bad coaching knowledge, the rest do not want to know about it, in national athletes, 63% have good coaching knowledge, the rest are less than expected (Bebetsos et al., 2017; Guagliano et al., 2014; Li et al., 2019).

Physical performance is very limited because of the exercise route so that it can reach that limit. Porwil and Pre-PON Riau athletes have been doing routine training with their coaches in the past months. Since the start of the physical test, each coach evaluates the physical condition to be improved; opening the previous record will ensure and pay attention to the deficiencies to be trained so that the burden in training will be coupled with an overload following the principal coach. Improving athletes' performance is the goal of the training process (Ratnati, 2019). Starting from the training phase, macro, micro, and daily sessions of each training process that the athletes work with the coach (team coach) is an effort to improve the athlete performance (de Haan & Sotiriadou, 2019; Solli et al., 2019). Heavy loads will be dangerous and light loads will not be

beneficial. The appropriate load for each athlete is calculated and determined based on the athlete's ability.

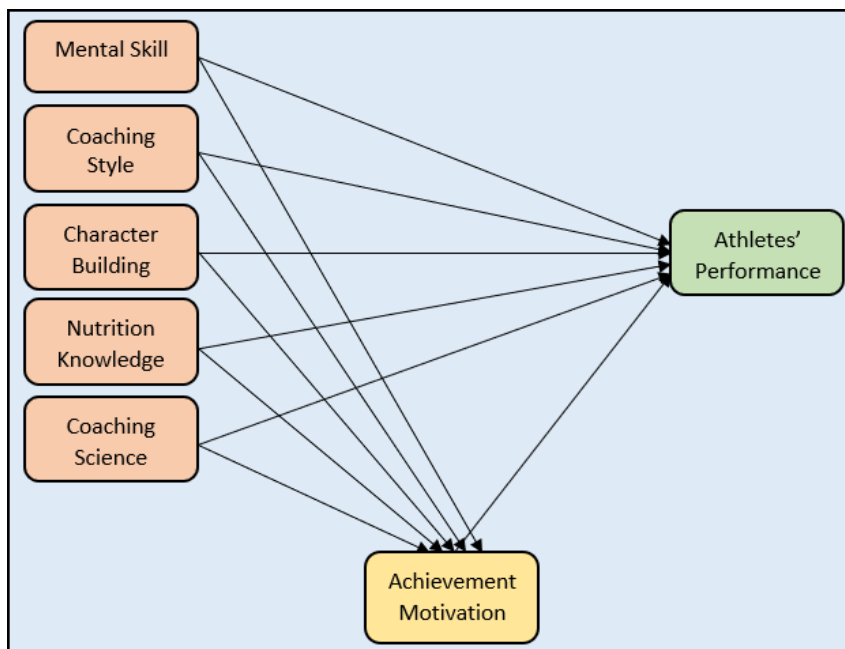
This study aims to analyze and demonstrate the influence of coach quality on the motivation and performance of athletes. In this study, several indicators of the quality of coaches used in the training of athletes are mentioned. The significance of the results of this study is a guide for coaches to further sharpen and improve their coaching skills.

## **2. METHODS**

This was a correlational descriptive study using the Structural Equation Model (SEM) approach that seeks to uncover the extent of the correlation or influence of research variables, namely mental skill, coaching style, character building, nutrition knowledge, and coaching science on the performance of Regional Sports Week (PORWIL) and National Sports Week (PON) Koni Riau athletes seen from achievement motivation.

The number of participants in this study was 121 athletes as a sample size, consisting of 15 types of individual sports or groups. Voluntarily selected subjects can provide all the necessary information and answer research questions. Data collection used a set of questionnaires along with structured interviews directly to the sample. However, interviews are conducted to get more qualitatively accurate information.

The researchers initially collected data through observations and interviews to operationalize the construction in our research model. After the data was collected, the researchers formed FGD (focus group discussion), the discussion was attended by sports lecturers and several coaches from various types of sports to validate the instrument. From the results of this validation, the item items that were declared valid by the expert were 28 statement items. Then the reliability of the instrument, will be directly seen through analysis using the help of PLS software. If the data results are invalid or show red color, then the item will be deleted. Then the validated scale was adapted and modified. All items were measured using a four-point Likert-type scale, ranging from 1 (strongly disagree) to 4 (strongly agree) as negative perception, and from 4 (strongly agree) to 1 (strongly disagree) as positive perception. Figure 1 shows the research design.

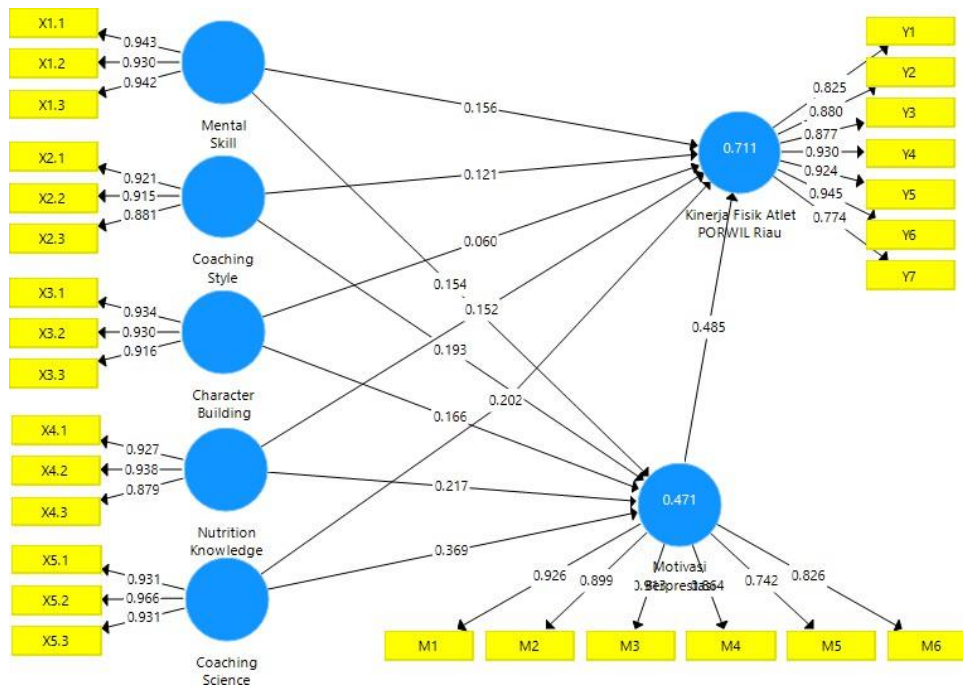


**Figure 1.** Research Design

The researchers divided the coach quality variable into five variables: mental skills, coaching style, character building, nutrition knowledge, and coaching science. Motivation consisted of intrinsic and extrinsic motivation, and athletes' performance consisted of the athlete's qualities during training and physical test results. The researchers' goal was to divide these variables to measure the extent to which the relationship of each of these five variables to the physical performance of Koni Riau athletes with achievement motivation as a mediating variable. Achievement motivation consisted of intrinsic and extrinsic motivation, and the athletes' performance consisted of the perceived quality of the athletes' training and by looking at the results of physical tests.

### 3. RESULTS

For data analysis, this study used the smart PLS application. The first stage of this analysis was done by analyzing the measurement model with the PLS Algorithm menu.



**Figure 2.** The relationship between indicators and variables

This stage was carried out to test the validity and reliability of each indicator and see the value of the coefficient of determinate R square. Validity test was done by looking at the outer loading value. The instrument is declared valid if it has a loading factor value of > 0.7.

**Table 1.** Outer Loading Result

Variable	Code	Outer Loading	Variable	Code	Outer Loading
<b>Mental Skill</b>	X1.1	0.943	<b>Achievement Motivation</b>	M1	0.926
	X1.2	0.930		M2	0.899
	X1.3	0.942		M3	0.913
<b>Coaching Style</b>	X2.1	0.921		M4	0.864
	X2.2	0.915		M5	0.742
	X2.3	0.881		M6	0.826
<b>Character Building</b>	X3.1	0.934	<b>Riau Athletes' Physical Performance</b>	Y1	0.825
	X3.2	0.930		Y2	0.880
	X3.3	0.916		Y3	0.877
<b>Nutrition Knowledge</b>	X4.1	0.927		Y4	0.930
	X4.2	0.938		Y5	0.924
	X4.3	0.879		Y6	0.945
<b>Coaching Science</b>	X5.1	0.931		Y7	0.774
	X5.2	0.966			
	X5.3	0.931			

Based on Table 1, the outer loading value is more than 0.7, which means that the instrument is considered valid for use. Table 2 presents the reliability and validity results by using Cronbach's Alpha.

**Table 2.** Construct reliability and validity result

Variable	Cronbach's Alpha	Rho-A	Composite Reliability	Average Variance Extracted (AVE)
Character Building	0.918	0.931	0.948	0.859
Coaching Science	0.937	0.938	0.960	0.889
Coaching Style	0.892	0.918	0.932	0.820
PORWIL Riau Athletes Physical Performance	0.951	0.957	0.960	0.777
Mental Skill	0.933	0.952	0.957	0.880
Achievement Motivation	0.931	0.935	0.946	0.747
Nutrition Knowledge	0.903	0.903	0.939	0.838

Based on Table 2, the Cronbach's Alpha value is more than 0.6. So, we can conclude that this research instrument is declared valid and reliable. Table 3 shows the value of the coefficient of determinate R square.

**Table 3.** R square results

	R Square	R Square Adjusted
PORWIL Riau Athletes Physical Performance	0.711	0.696
Achievement Motivation	0.471	0.448

Table 3 results illustrate that the Riau PORWIL Athlete's Physical Performance variable described by Mental Skill, Coaching Style, Character Building, Nutrition Knowledge, Coaching Science mediated by Achievement Motivation on Physical Performance of Riau PORWIL Athlete is 69.6%. While the Achievement Motivation variable described Mental Skill, Coaching Style, Character Building, Nutrition Knowledge, Coaching Science on the Physical Performance of Riau PORWIL Athletes is 44.8%. Table 4 presents the results of the relationship between each variable.

**Table 4.** The relationship between each variable

No	Original Sample	M	SD	t	p	
1	Mental Skill -> PORWIL Riau Athlete's Physical Performance	0.156	0.153	0.044	3.527	0.000
2	Mental Skill -> Achievement Motivation	0.154	0.144	0.063	2.438	0.015
3	Coaching Style -> PORWIL Riau	0.121	0.116	0.044	2.727	0.007

Athlete's Physical Performance						
4	Coaching Style -> Achievement Motivation	0.193	0.192	0.067	2.890	0.004
5	Character Building -> PORWIL Riau Athlete's Physical Performance	0.060	0.055	0.044	1.370	0.171
6	Character Building -> Achievement Motivation	0.166	0.167	0.061	2.705	0.007
7	Nutrition Knowledge -> PORWIL Riau Athlete's Physical Performance	0.152	0.155	0.051	2.994	0.003
8	Nutrition Knowledge -> Achievement Motivation	0.217	0.216	0.086	2.529	0.012
9	Coaching Science -> PORWIL Riau Athlete's Physical Performance	0.202	0.196	0.077	2.628	0.009
10	Coaching Science -> Achievement Motivation	0.369	0.360	0.073	5.053	0.000
11	Motivasi Berprestasi -> PORWIL Riau Athlete's Physical Performance	0.485	0.482	0.098	4.955	0.000
12	Mental Skill -> Achievement Motivation -> PORWIL Riau Athlete's Physical Performance	0.075	0.072	0.037	1.988	0.047
13	Coaching Style -> Achievement Motivation -> PORWIL Riau Athlete's Physical Performance	0.094	0.094	0.040	2.341	0.020
14	Character Building -> Achievement Motivation -> PORWIL Riau Athlete's Physical Performance	0.080	0.082	0.037	2.144	0.033
15	Nutrition Knowledge -> Achievement Motivation -> PORWIL Riau Athlete's Physical Performance	0.105	0.103	0.044	2.408	0.016
16	Coaching Science -> Achievement Motivation -> PORWIL Riau Athlete's Physical Performance	0.179	0.175	0.055	3.270	0.001

Based on the results in table 4, mental skills can affect the performance of Riau PORWIL athletes with a p value of 0.000 and mental skills on achievement motivation with a p value of 0.015. This means that coaches who have the quality to train athletes have a significant impact on each variable, namely achievement motivation and athlete performance. The results of Table 4 also show that trainers who have good qualities to train athletes can affect athlete performance through

achievement motivation ( $p < 0.05$ ).

#### 4. DISCUSSION

Based on our study results, coaches' behavior can affect the performance of Riau PORWIL athletes and motivation. This means that coaches who have the quality to train athletes have a significant impact on each variable, namely achievement motivation and athlete performance. Furthermore, trainers who have good qualities to train athletes can affect athlete performance through achievement motivation. Previous research has also stated that the involvement of the trainer factor to build mentality is more influential than other factors (Manley et al., 2020). However, in building the athletes' mentality, the coach prefers the way of conversation between the coach and the athletes. Therefore by going through the conversation of coaches and athletes closer (Murphy & Sullivan, 2021), the coach will be easy to know the state of the athletes and think of ways to improve motivation and achievement in athletes.

Coaches apply many training styles to athletes, but in this study the style of trainers used is authoritarian, democratic and emphasizes the duties given by trainers to athletes. Based on the results of interviews as supporting data, this study has no dominant training style. The coaching style applied by the coach has a strong influence on the motivation of the athletes not to be afraid of failure and confident during the competition (Moreno-Murcia et al., 2019; Nasiruddin et al., 2020; Razmaite & Grajauskas, 2021; González-García et al., 2022). However, in the martial arts category, many coaches still use an authoritarian style of training (Geraldini & Ira, 2020; Boihaqi & Halim, 2021). Therefore, the importance of trainer experience is to apply the right training style pattern to athletes so that achievement motivation remains high and can produce achievements.

Our study also showed that the coach quality variable in character building does not affect the performance of athletes ( $p > 0.05$ ). However, character building can affect achievement motivation ( $p < 0.05$ ). In addition, coaches who teach character building to athletes, also influence athlete's performance through achievement motivation ( $p < 0.05$ ).

A coach who has nutrition knowledge can provide the right nutrition needed for athletes (Jacob et al., 2019). Based on Table 4, trainers who have quality nutrition knowledge affect the performance of athletes ( $p < 0.05$ ) and nutrition knowledge also has an influence on achievement motivation ( $p < 0.05$ ). Then from each of these analyze, the results were also the same that coach who know nutrition midwives at number 15 (Table 4) influence athlete's performance through achievement motivation ( $p < 0.05$ ). Nutrition knowledge of the coach includes the amount of calorie needs of athletes in each type of exercise, the use of supplements, the effects and dangers, and the



importance of nutrition to recovery. Although, nutrition knowledge in coach affects the motivation and achievement of athletes, but there are still many athletes who have not implemented the right nutrition patterns. Factors causing the lack of applying nutrition in training, such as age, gender, type of exercise (Elsahoryi et al., 2021). Therefore, the importance of nutrition knowledge on the trainer to do a special retest of knowledge on athlete's nutrition (Almansour et al., 2020), in addition to the need for supervision from a doctor or sports nutritionist to always supervise athletes and coordinate with the coach (Cherian et al., 2020; Boumosleh et al., 2021).

Variable of coaching science is also very important to athletes. Coaching in this study includes coaching science and licensure, analysis of athlete progress and skills in applying exercise periodization to athletes (Otte et al., 2020; Pol et al., 2020; Rauff et al., 2022). Coaching science owned by the coach, can affect the performance of athletes ( $p < 0.05$ ) and coaching science also affects the motivation of athletes ( $p < 0.05$ ). From these results, it is also reinforced in number 16 (Table 4), that coach who have quality in the field of coaching science can affect athlete's performance through achievement motivation ( $p < 0.05$ ). Based on the analysis results regarding the quality of coaching in the field of coaching science, the provided training will be of higher quality, more measurable, and systematic. Of course, the coach's load is following each athlete's portion based on the type of sport or race number (Inoue et al., 2022). Thus, with a good coaching science, the coach can provide volume, intensity, variety of exercises that are measured so that the athlete's motivation remains high, so that the athlete's performance will increase to produce achievements.

## 5. CONCLUSIONS

The quality of the trainer plays a role in the achievement and performance motivation of athletes. The statement is evidenced by the value of the R square coefficient of 0.696 for the performance of Riau athletes and 0.448 for motivation. While the quality of coach known in this study consists of 5 indicators divided into variables: mental skills, coaching style, character building, nutrition knowledge, and coaching science. Then the results on the relationship between each variable, five variables on the quality of coaches affect the achievement motivation of Riau athletes ( $p < 0.05$ ) and four variables on the quality of coaches affect the achievement of Riau athletes ( $p < 0.05$ ), but one of the variables is the quality of coaches' character building does not affect the achievement of Riau athletes 0.171 or ( $p > 0.05$ ). Coach quality on Riau athlete performance with achievement motivation as a mediator variable also showed significant results ( $p < 0.05$ ) meaning that the five variables on coach quality had a good influence on Riau athlete achievement through

achievement motivation. It is hoped that this study's results can be a guideline for coaches on the importance of coach quality for athlete's achievement. In addition, the need for a special development of test instruments to determine the coach's quality is still feasible to maintain or need to be done coaching coach.

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#### **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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