



PREDICTION OF FEMALE JUDO PERFORMANCE FOR SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES IN 57 KG WEIGHT CATEGORY

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ABSTRACT

The purpose of the study was to see the Estimation of Female Judo Performance on the basis of selected Physical and Physiological Variables of National Level Judoka's in 57kg weight category. The subjects selected for the study was total number of 105 elite national level female judo players from different state of India, 15 from each weight category. For this study physical and physiological variables were taken. The selected physical variables are Strength, Flexibility, Agility and physiological variables are Vital Capacity, Heart Rate, and BMI. The data was collected during the senior national level Judo competition. To predict the Judo Performance of females' judokas descriptive statistics and multiple regression analysis test was used. All analysis were performed by SPSS version 20. Results revealed that the significant difference was found with flexibility variables. For estimating 57-kilogram weight category judo players performance on the basis of physical and physiological variables one regression model have been established and established model is: Model- Performance = 15.34 + 2.23 Flexibility.

Key words: Physiological Variables, physical variables, judokas, multiple regression.

1. INTRODUCTION

Judo is a martial art that originated in Japan and is now an Olympic sport all over the world. Judo was founded in 1882 as a fusion of jujitsu, a grappling form, with mental discipline. The origins of jujitsu may be traced back to sumo, which has a long and illustrious history. In the change in the minds of many Judoka to score, this competitive spirit can be seen. Sport created teamwork that was beneficial for both and established the individual as well. It was a full physical education; it wasn't just a game. While self-defence methods were used in the instruction, the focus was on the ballistic application of the techniques. Dr. Jigaro Kano is credited with the survival of the Meiji Restoration through jujitsu. He took and adapted jujitsu to the times. Judo was dubbed his new technique. Only clean shots displaying better timing and mastery of body mechanics were recognised with a ranking during the pre-Olympic era. In a major departure from traditional judo, the Judoka may frequently play conservatively in a contemporary game, working for a win based solely on a partial score from the tiny point, rather than losing all of them in an ippon attempt. This method of classification allows athletes to be more qualified for competitions. Nine different colour belts are used in the Judo ranking system, beginning with red, yellow, orange, green, blue, brown, black and red / white stripes in white.

2. METHODS

2.1 Subject

The subjects selected for this study was total number of 105 elite national level female judo players from different state of India, 15 from each weight category.

2.2 Variables

For this study physical, physiological variables and performance were taken. The selected physical variables are Strength, Flexibility, Agility and physiological variables are Vital Capacity, Heart Rate, and BMI.

2.3 Data Collection

The data was collected during the senior national level Judo competition. To predict the Judo Performance of females' judokas descriptive statistics and multiple regression analysis test was used. by SPSS version 20.

3. RESULTS

Estimation of Female Judo Performance on the basis of selected Physical and Physiological Variables of National Level Judoka's in 57kg weight category.

TABLE- 1
Model summary related to estimation of 57 kilogram weight category judo players

Model Summary				
Model	R	R-Square	Adjusted R-Square	Standard Error of the Estimate
	.950 ^a	.902	.894	1.03843

a. Predictors: (Constant), Flexibility

b. Dependent Variable: Performance

Table- 1 shows the model summary to estimate the performance of 57-kilogram weight category Judo players. Only one model is established. The model is established on the basis of flexibility.

TABLE- 2
ANOVA TABLE RELATED TO ESTIMATION OF 57-KILOGRAM WEIGHT CATEGORY JUDO PLAYERS

Model 1	Sum of Squares	DF	Mean Square	F	Sig.
Regression	128.915	1	128.915		
Residual	14.018	13	1.078	119.551	.000 ^a
Total	142.933	14			

a. Predictors: (Constant), Flexibility

b. Dependent Variable: Performance

Table- 2 ANOVA shows the usefulness of all created models. The model is found useful since the value of “F” is found significant in the case.

TABLE- 3
COEFFICIENTS RELATED TO ESTIMATION OF 57-KILOGRAM WEIGHT CATEGORY JUDO PLAYERS PERFORMANCE

Coefficients									
Un-standardized Coefficients		Standardized Coefficients		95% Confidence Interval for B				Co linearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Lower	Upper	Tolerance	VIF
1. Constant	-15.343	3.219		-4.766	.000	-22.297	-8.388		
Flexibility	2.233	.204	.950	10.934	.000	1.792	2.674	1.000	1.000

a. Dependent Variable: Performance

Table- 3 shows the constants and un-standardized coefficients of the estimated model:

1 Model- Performance = 15.34 + 2.23 Flexibility.

Table- 4
EXCLUDED VARIABLES RELATED TO ESTIMATION OF 57 KILOGRAM WEIGHT CATEGORY JUDO PLAYERS

Excluded Variables								Co linearity Statistics	
Model	Beta In	t	Sig.	Partial Correlation	Tolerance	VIF	Minimum Tolerance		
1 Left Hand Grip	-.153 ^a	-1.927	.078	-.486	.993	1.007	.993		
Right Hand Grip	-.022 ^a	-.247	.809	-.071	.997	1.003	.997		
Leg Strength	-.064 ^a	-.726	.482	-.205	1.000	1.000	1.000		
Back Strength	-.066 ^a	-.727	.481	-.205	.939	1.065	.939		
Agility	-.163 ^a	-2.110	.056	-.520	.999	1.001	.999		
Vital Capacity	.142 ^a	1.577	.141	.414	.831	1.204	.831		
Heart Rate	.128 ^a	1.473	.166	.391	.921	1.085	.921		
BMI	.076 ^a	.860	.407	.241	.976	1.025	.976		

a. Predictors: (Constant), Flexibility

b. Dependent Variable: Performance

Table- 4 shows the excluded variables. In the model, a total of eight variables are excluded

4. DISCUSSION AND CONCLUSION

Results revealed that the significant difference was found with flexibility variables. For estimating 57-kilogram weight category judo players performance on the basis of physical and physiological variables one regression model have been established and established model is: Model- Performance = 15.34 + 2.23 Flexibility.

So, a regression model is developed and hence the physical variables may contribute to the judo performance. The more the flexibility of the players will gain a more stable position as well as it may help the judoka's to extend more skill and maintain body balance for a longer period of time. Good joint flexibility contributes to increased work performance, prevents muscle injury and soreness. In judo quality technique performance in attack, defence and counterattack is important. Thus, Flexibility is an important factor in performing judo skills. As it was also supported by the study of Prakash D & Patel R.K. (2019) conducted the study on Prognosticate Handball Performance as a rationale of coordinative abilities by framing multiple regression models.

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