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## Analysis of team effectiveness of elite level volleyball players

**Dr. E. Saravanan and D Pajanivel**

### Abstract

Sport psychology is the study of the psychological basis, processes and effects of sport. One of the most satisfying experiences for an athlete or coach is to be a member of a team that gets along well and works as cohesive unit. The purpose of the study was an analysis of team effectiveness of the national volleyball players. It was hypothesized that there would be a significant difference in team effectiveness between the teams selected for the study. The subjects for the study were selected from the National League volleyball tournament for the year 2003-2004 held at Tuticorin from 21<sup>st</sup> to 28 December 2004. Eight department teams participated in the tournament. Four teams were selected, namely border security force, south railway, Cochin port trust and Indian navy. Ten players were selected from each team making forty subjects in total. The performance related psychological factors dependability cooperation and sharing were selected as variables for this study. The data on team effectiveness was collected using the team effectiveness scale (TES) prepared by Dr. Upinder Dhar and Dr. Santhosh Dhar. Selected criterion variables were statistically examined for significant difference using analysis of variance (ANOVA). Results of the study: There was a significant difference in the dependability and cooperation factor of the team effectiveness scale among the teams selected for the study. Whether there is no difference in the sharing factor of the team effectiveness.

**Keywords:** Team effectiveness, elite level ,volleyball players

### Introduction

Sport psychology is the study of the psychological basis, processes and effects of sport. One of the most satisfying experiences for an athlete or coach is to be a member of a team that gets along well and works as cohesive unit. Good communication respect for one another, a feeling of closeness, a friendly atmosphere, mutual acceptance and encouragement all make for better workouts, more enjoyable trips and more satisfying competitions. The primary focus of team – building efforts should be task related and not focus exclusively on improving the relationship between team members. Inter personal problems often result from other issues of them functioning. Making a group of individuals into an effective team is an important part of a coach's task. Strategies to developed team cohesion are known as team building (Carron *et al.* 1997).

Volleyball coaches and players go at great lengths to find competitive advantages against opponents. Many hours are spent practicing, studying game films, and strategizing in the hopes of finding valuable predictors of success. It is widely accepted that the primary predictor of team success lies in players ability to both serve effectively and receive serve effectively (McGown *et al.*, 2001) [1] and (Papageorgiou & Spitzley 2003) [2]. Thus, it is imperative that players and coaches are aware of the best serving strategies to utilize during the course of a match. Though many studies have attempted to investigate serve success predictors such as mode of serves, force of serves, and rotational velocity of serves, there is a lack of research that identifies the success rates of serves to various locations on the court. Volleyball is a game played by two teams of up to twelve players; only six from each team are on court at one time. Basically, when team wins the right to serve, they rotate one place round so that all players have to serve and play both front and back lines. The team reaching twenty – four each, when play must continue until one team has a lead of two points. A game can be either to the best of three or five sets.

The purpose of the study was an analysis of team effectiveness of the national volleyball players. It was hypothesized that there would be a significant difference in team effectiveness between the teams selected for the study.

**Methods and Materials**

Research methodology involves the systematic procedures by which the researcher starts from the initial identification of the problem to its conclusion. The purpose of the methodology is to carry on the research work in a scientific and valid manner. Four departmental national level teams, which participate in the national league volleyball tournament, conducted at Tirunelveli during September 2015 namely, South central Railway, Cochin port trust, Border security force and Indian navy were selected for the study. Ten (n=10) players from each team were selected. The “Team effectiveness scale” the questionnaire developed by Dr.Santhosh Dhar and Dr.Upinder Dher was used to get the details of team effectiveness. The components of team effectiveness such as Dependability, Cooperation and Sharing were selected as criterion variables of the study. The performance related psychological factors dependability

cooperation and sharing were selected as variables for this study.

This investigator administered questionnaire to forty subjects. The investigator collected data in between 10 am to 4pm from the subjects during their rest time. The purpose of the study was clearly mentioned. The investigator explained the subjects about the use of the questionnaire and meaning of each question and how to fill the questionnaire. Care was taken to see that the subjects answered all the questions. The filled-up questionnaires from respondents were collected after checking, using the scoring key, the total scores obtained by each subject were tabulated.

Since the purpose of the study was to compare the psychological status of different level of players, the static group comparison design was used as experimental design. The details collected from the subjects on selected criterion variables were statistically examined for significant difference using analysis of variance since there were three variables namely, dependability co-operation and sharing, ‘F’ ratio was employed.

**Results of the Study**

**Table 1:** The Analysis Of Variance on Factor of Team Effectiveness among the National Level Volleyball Playes

Variables	Sources	SS	DF	MS	F
Depend Ability	Between Score	809.6	3	269	16.35*
	With in Score	594	36	16.5	
Cooperation	Between Score	414.48	3	138.16	6.06*
	With in Score	82.05	36	22.791	
Sharing	Between Score	5.28	3	1.76	2.00
	With in Score	31.7	36	0.880	

\* Significant 0.05 level of confidence (3.26)

Table I revealed that the obtained F ratios were: 16.35 and 6.06 for dependability and cooperation factors of team effectiveness among the national level volleyball players respectively, and it was found to be greater than the required table of 3.26 at 0.05 level significance. Table I also revealed that the obtained F ratio for sharing was 2.0, it is lesser than the required table value of 3.26.

From the results of the study it was inferred that there was a significant difference among the elite volleyball players on the team effectiveness components of dependability and

cooperation. But in the case of sharing there was no significant difference among the volleyball players of different teams at the elite level. Since the results of the sharing reveals that all the team players had their sharing quality equally good.

Since the ‘F’ value was found to be significant on dependability and cooperation the post hoc test was applied find out the significance of paired mean which is presented in the Table II

**Table II:** Scheffé’s Post Hoc Test on Paried Mean Difference between the Selected Teams on Team Effectiveness among the National Level Volleyball Playes

Variables	Cochin port trust	Border security force	Indian Navy	South Railway	Mean Difference	CI Value
Depend Ability	43.8	36.8	--	--	7.0*	6.66
	43.8	--	44.4	--	0.6	
	43.8	--	--	38.9	4.9	
	--	36.8	44.4	--	7.6*	
	--	36.8	--	38.9	2.1	
	--	--	44.4	38.9	5.5	
Cooperation	31.7	21.7	--	--	10*	5.68
	31.7	--	32.9	--	1.2	
	31.7	--	--	26.1	5.6	
	--	21.7	32.9	--	11.2*	
	--	21.7	--	26.1	4.4	
	--	--	32.9	26.1	6.8*	

\* Significant 0.05 level of confidence

The table II reveals that the paired means difference of Cochin port Trust, border security force, Indian navy and south railway on depend ability and cooperation of national level volleyball players.

The table also reveals that the mean difference between

Cochin port Trust and border security force, border security force and Indian navy were 7.0 and 7.6 respectively. These values are greater than the required confidence interval value of 6.66, and it was significant at the 0.05 level of confidence.

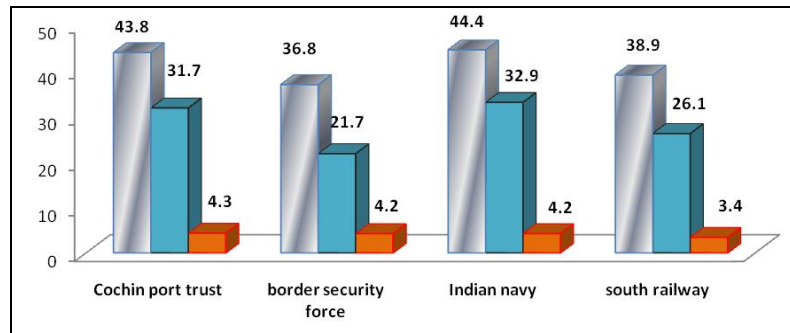
This statistical finding reveals that there was a difference

between the above teams in the dependability factor of team effectiveness. The obtained mean differences of Cochin port Trust and Indian navy, Cochin port Trust and south railway, border security force and south railway and Indian navy and south railway were 0.06, 4.9, 2.1 and 5.5 respectively. Since, the obtained values are lesser than the required CI and it was insignificant. Further, there by revealing no difference between them regarding the dependability factor of team effectiveness.

Further, the table II also reveals that the mean difference between on cooperation were Cochin port Trust and border security force, border security force and Indian navy and Indian navy and south railway were 10.0, 11.2 and 6.8 respectively. These values are greater than the required confidence interval value of 5.68, and it was significant at the

0.05 level of confidence. This statistical finding reveals that there was a difference between the above teams in the cooperation factor of team effectiveness. The obtained mean differences of Cochin port Trust and Indian navy, Cochin port Trust and south railway, and border security force and south railway were 1.2, 5.6, and 4.4 respectively. Since, the obtained values are lesser than the required CI and it was insignificant. Further, there by revealing no difference between them regarding the cooperation factor of team effectiveness.

Graphical representation of mean values of Cochin port Trust, border security force, Indian navy and south railway on depend ability cooperation and sharing of national level volleyball players was presented in bar diagram 1.



**Bar Diagram 1:** Bar Diagram showing the mean values of dependability, cooperation and sharing among national level volleyball players

### Discussion on Findings

The statistical analysis of the data revealed that there was a significant difference between the dependability and cooperation factor of team effectiveness scale between the teams selected for the study. The team representing scoring high on both the factors than the other teams. This finding is in consonance with the finding of David and ghuman. The well-disciplined life and the very influence of the defense culture of the Indian navy would have been a probable reason for the better dependability and Cooperation. The defense places the nation above else in front of them. They learn to cooperation the day they enter their respective campus.

Use of work teams, organizations of personnel with interdependent interplay and jointly shared accountability (Sundstrom, *et al.*, 1990) [4], has extended dramatically throughout the previous decade. Research conducted in the early Nineties (Wellins *et al.*, 1991) [5] suggested that solely about one quarter of the organizations surveyed were the usage of teams. However, the evaluation confirmed a non-significant result when the sharing thing of the teams was taken into account. The pattern measurement would have been the purpose for this finding or it would possibly have due to some socio-psychological reasons.

An important fact to consider is that volleyball, as a sport, is largely a tournament-based sport where teams can potentially face several opponents in one day. Because of this, it is often difficult to identify team and individual weaknesses to exploit. If coaches and players know that there is a specific zone that may lead to greater success over the course of a long tournament day, they will hold a serious advantage over other teams. Such knowledge can save coaches and players a large amount of scouting and game-planning, which often takes a considerable amount of time and energy.

Based on the research findings of the study the formulated hypothesis stated in this study, there was significant difference in team effectiveness between the teams selected

for the study has been accepted only in cases of dependability and cooperation. But the concern about the sharing of team effectiveness among the volleyball players was found that there were no significant differences, hence the hypothesis was rejected.

### Conclusion

From the results and findings of the study it was concluded that there was a significant difference in the dependability factor of the team effectiveness scale among the teams selected for the study. There was a significant difference in the cooperation factor of the team effectiveness scale among the teams selected for the study. There was an insignificant difference in the sharing factor of the team effectiveness scale among the teams selected for the study. The Indian navy having the better dependability and Cooperation when compared to other teams. The cochin port team had the better dependability and Cooperation than the south railway and border security force.

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