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## Analysis of offensive skills factors predominant towards the success of teams in pro Kabaddi season-seven

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### Abstract

The purpose of the study was to determine the Analysis of offensive skills factors predominant towards the success of team in Pro Kabaddi season-seven. The teams were selected from Pro Kabaddi season-seven. Twelve city teams play the game at home and away basis selecting players from twelve countries. Each team played on double league 22 matches. Based on the league points first six teams qualify for playoffs. The playoffs, semifinals and final matches are played on knock out basis. It is played in the month of July to September. The pro Kabaddi league season- seven tournament was taken into consideration for the present study. The winner, runner, third place and fourth place teams were selected for the study as independent variables. It includes the winner Bengal Warriors, runner Dabang Delhi, third place U Mumbai and fourth place Bengaluru Bulls. The dependent variables selected for the study the ten variables namely successful raid with hand touch, unsuccessful raid with hand touch, successful raid with toe touch, unsuccessful raid with toe touch, successful raid with kick, unsuccessful raid with kick, successful raid with chain escape, unsuccessful raid with chain escape, successful raid with jumping over the chain and unsuccessful raid with jumping over the chain under the head offensive overview. Recorded video tapes were used to analyze the variables. Three expert coaches along with the investigator sat in front of the television and analyzed the variables one by one by using hand coded sheet with slow motion replay whenever necessary. Data were collected for offensive skill for hand touch, toe touch, kick, chain escape and jumping over the chain similar procedures were used for all the 137 matches in order to collect data. The data collected from the 137 matches were analyzed by using Chi-Square analysis technique to assess the team performance in the pro kabaddi league season seven tournaments. The level of significance was fixed at 0.05 level of confidence. The results of the study have shown that the successful raid with bonus and successful anti with super tackle showed significant difference among the top four teams. An analysis of offensive overview reveals that the selected variables such as higher number of successful and less number of unsuccessful hand touch, and toe touch show a significant association with team success.

**Keywords:** Successful, unsuccessful, hand touch, toe touch, kick, chain escape, jumping over the chain, inter cities, pro Kabaddi

### Introduction

Kabaddi is originated in India and has traveled to other countries in the region. It is a team contact sport with the uniqueness that, entire defending team defends against an attacking player from opposition team. Majority of Indian either know swordplay's Kabaddi (Sen, 2015) [20], but the use of technology was considerably non-existent. Recently, due to commercialization (The Hindu business line, 2014) [22], technology in its infancy have penetrated the Kabaddi. Kabaddi produces data which is under – utilized today and in the best form used for showing descriptive statistics. Traditionally, intuitive feelings drive decision-making in Kabaddi. Sports diversity in India is growing, and also the monetary values attached to it (Gupta, 2009) [19]. India has started witnessing the rise of professional sports with various successful agues (Sanjeev and Ankur, 2015) [19]. Sports are all about decision-making on the field and off the field considering multiple parameters. Kabaddi, as a sport, is not so different. Kabaddi can benefit from analytics as it produces a variety of data at a team level and an individual player level.

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In modern sports, successful performance is determined by number of factors. For optimum performance at elite level, variety of areas must be addressed. Further, Kabaddi is the game where size, shape and body composition play an important part in providing distinct advantage for specific playing positions. These include the skill level, flexibility, endurance and most importantly the specific use of anthropometric measurements which plays a vital role in complex team based games. Since success in the game depends among other things, on how the individual characteristics of some players fit into the whole, thus creating a coherent team. Kabaddi is one of the complex technical team based game and performance differences between players of varying ability levels are different.

Match analysis has been part of the Kabaddi game for over 30 years and based on these results new technique and technology have emerged in skills, time of application of skills, strategy and tactics. Team performance can be defined as "It is the objective or subjective judgment of team that how effectively a team can meet its valued objectives" (De Church & Mesmer - Magnus, 2010) [15]. In order to ensure successful team performance, every individual of team must complete team goals assigned to them through their specialized expertise and skills while navigating team processes (Kozlowski & Bell, 2007) [21]. According to Groom *et al.*, (2011) [7] empirical research on compensation methods in a team environment demonstrates that a compensation strategy helps in enhancement of team performance. Performance analysis is firmly positioned as an integral part of the coaching process. However there has been a significant increase in the volume of performance analysis research (Lago, 2009) [13]. The application of video and computer technology in sport and the implementation of video review sessions in to weekly training programmes (Guadagnoli *et al.*, 2002) [8]. For optimum performance led to the belief that performance analysis is now widely accepted among coaches, athletes, and sport scientists as a valuable input into the feedback process (Drust, 2010) [5]. For example, video analysis software has been used with a multitude of purposes in both individual and team based sports (Di Salvo *et al.*, 2009) [4]. According to Clemente *et al.* (2012) [1], the information feed back to the coach have become more relevant and important, with a well-designed system using relevant key performance indicators to supply accurate and reliable information.

## Methodology

The purpose of the study was to determine the Analysis of offensive factors predominant towards the success of team in pro Kabaddi leagues season seven. The teams were selected from pro Kabaddi leagues season- seven. It is one of the best tournaments for indigenous sports of Kabaddi. It attracted a large number of people and thereby reached a new level of professionalism. Twelve city team's they are Gujarat Fortune

giants, U Mumbai, Dabang Delhi, Puneri Paltan, Jaipur Pink Panthers and Haryana Steelers, Bengaluru Bulls, Bengal Warriors, UP Yoddhas, Patna Pirates, Telugu Titans and Tamil Thalaivas play game at home and away basis selecting players from twelve countries.

The investigator referred various literatures, consulted with experts in the field of Kabaddi to identify ideal variables. Twelve teams participated in the pro Kabaddi leagues season-seven tournament. Each teams played 22 matches with other teams. Based on the league points first six teams were selected. Then these teams played playoffs, semifinals and final matches knock out basis. The zonal format has been done away with the play offs the top six team from the league overall based on their points which has already made the battle for qualification tougher than ever. The top two teams will now automatically make the semifinals, while the remaining four team battle it out in eliminators. Eliminators-1 round league rank-3 v/s league rank- 6. Eliminators-2 round league rank-4 v/s league rank- 5. Semifinal-1 league rank-1 v/s Winner of eliminators-1. Semifinal-2 league rank-2 v/s Winner of eliminators-2. Final match winner of semifinal-1 v/s winner of semifinal-2. The winner, runner, third and fourth place teams were selected for the study as independent variables. It includes winner Bengal Warriors, runner Dabang Delhi, third place U Mumbai and fourth place Bengaluru Bulls. The dependent variables selected for the study ten variables. It comprised of ten variables namely successful raid with hand touch, unsuccessful raid with hand touch, successful raid with toe touch, unsuccessful raid with toe touch, successful raid with kick, unsuccessful raid with kick, successful raid with chain escape, unsuccessful raid with chain escape, successful raid with jumping over the chain and unsuccessful raid with jumping over the chain under the head offensive overview.

Data were collected from the six teams which secured position in the pro Kabaddi league season seven matches in the month and year July to September 2019. All the each team 26 matches include 22 double league matches, playoffs, semifinals and final matches were recorded by the organizing committee. It was collected from them by the investigator for analysis. Recorded video tapes were used to analyze the variables. Three expert coaches along with the investigator sat in front of the television and analyzed the variables one by one by using hand coded sheet with slow motion replay whenever necessary. Data were collected for offensive skills overview. Similar procedures were used for all the 137 matches in order to collect data. The data collected from the 137 matches were analyzed by using Chi-Square analysis technique to assess the team performance in the pro Kabaddi league season – seven tournaments. The level of significance was fixed at 0.05 level of confidence.

## Results of study

**Table 1:** Chi - Square Analysis on Successful Raid and Unsuccessful Raid of Offensive Skills in the Matches of Pro Kabaddi Season- Seven Tournament

Teams		Bengal Warriors	Dabang Delhi	U Mumbai	Bengaluru Bulls	Chi-square
Successful raid with hand touch	Scores	38	45	32	20	9.97*
	%	28.14	33.33	23.70	14.81	
Unsuccessful raid with hand touch	Scores	27	24	30	34	1.99
	%	23.47	20.86	26.08	29.56	
Successful raid with hand touch	Scores	69	64	50	41	8.82*
	%	30.8	28.57	23.32	18.30	
Unsuccessful raid with hand touch	Scores	35	38	41	44	1.13

	%	22.15	24.05	25.94	27.84	
Successful raid with chain escape	Scores	51	33	46	29	8.22*
	%	32.07	20.75	28.93	18.23	
Unsuccessful raid with chain escape	Scores	24	36	30	39	4.11
	%	18.60	27.90	23.25	30.23	
Successful raid with Kicking	Scores	35	41	38	49	2.66
	%	21.47	25.15	23.31	30.06	
Unsuccessful raid with Kicking	Scores	22	24	25	16	2.44
	%	25.28	27.58	28.73	18.39	
Successful raid with Jumping Turn Anti	Scores	29	24	36	32	2.53
	%	23.96	19.83	29.75	26.44	
Unsuccessful raid with Jumping Turn Anti	Scores	19	16	11	13	2.49
	%	32.20	27.11	18.64	22.03	

\*Significant at 0.05 level. Table value required for df 3, at 0.05 = 7.82

Shows the total numbers of successful raid with toe touch secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 38, 45, 32 and 20 respectively. It has resulted with a Chi square of 9.97. The total number of successful raid with chain escape secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 51, 33, 46 and 29 respectively. It has resulted with a Chi square of 8.22. The total number of successful raid with hand touch secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 69, 64, 50 and 41 respectively. It has resulted with a Chi-square of 8.82. The and it was found to be statistically significant at .05 levels, since the table value required for significance for df 3 at .05 levels was only 7.82.

Shows that the total number of successful raid with kicking secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 35, 41, 38 and 49 respectively. It has resulted with a Chi-square of 2.66. The total number of successful raid with jumping turn anti secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 29, 24, 36 and 32 respectively. It has resulted with a Chi square of 2.53 and it was found to be statistically not significant at .05 levels, since the table value required for significance for df3 at .05 levels was 7.82.

The total numbers unsuccessful raid with toe touch secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 27, 24, 30 and 34 respectively. It has resulted with a Chi square of 1.99. The total number of unsuccessful raid with hand touch secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 35, 38, 41 and 44 respectively. It has resulted with a Chisquare of 1.13. The total number of unsuccessful raid with kicking secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 22, 24, 25 and 16 respectively. It has resulted with a Chi square of 2.24. The total numbers unsuccessful raid with chain escape secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru Bulls were 24, 36, 30 and 39 respectively. It has resulted with a Chi square of 4.11. The total number of unsuccessful raid with jumping turn anti secured by the winner team Bengal Warriors, runner up team Dabang Delhi, third place team U Mumbai and fourth place team Bengaluru

Bullswere 16, 19, 11 and 13 respectively. It has resulted with a Chisquare of 2.49 and it was found to be statistically not significant at .05 levels, since the table value required for significance for df 3 at .05 levels was 7.82.

### Discussion of study

Kabaddi is a game of offense, defense and also tactics and technique. In Kabaddi attack is also known as raid and the attacker is called as the raider. Offense in Kabaddi is total number of raiding of the raider which plays a crucial role. Since more points are secured through raids, the raider is the recipient of the public adulation or brickbats. The game situation and also exploits a given situation to team advantage by employing suitable skill.

Among the three significant variables of offensive overview, the winner team Bengal Warriors was the best than the other three teams in two variables namely hand touch and chain escape and second best as compared with other two teams in toe touch. In toe touch the runner team Dabang Delhi excelled the winner team Bengal Warriors. An analysis of hand touch and escaping chain reveals that champion Bengal Warriors recorded more percentage in successful hand touch and escaping chain and also less percentage in unsuccessful hand touch and escaping chain than the other three teams. It shows the Bengal Warriors team was effective in attacking quality of the players and had effective strategy as a team. Though Dabang Delhi scored more points than other three teams in toe touch they still could not win the tournament against Bengal Warriors only because the winning team showed effective offensive strength and also excelled in two offensive skills namely hand touch and chain escape. Analysis of jumping turn anti over reveals that the third place team U Mumbai recorded more percentage in successful jumping turn anti over and less percentage in unsuccessful jumping turn anti over than the other three teams although it was not statistically significant. Analysis of kicking reveals that the fourth place team Bengaluru Bulls recorded more percentage in successful kicking and less percentage in unsuccessful kicking than the other three teams, it was not statistically significant.

It has been recorded by the finding of Hughes and others (1987)<sup>[10]</sup> that successful teams had significantly more shots at goal. Gomey *et al.* (2008) have found out winning team differed from losing teams in offensive rebounds, assists, successful 2 point field goals and unsuccessful 3 point field goals. Castellano *et al.* (2012) have studied the role of attacking play, defensive play on successful performance. They found that the offensive variables like total shots, shots on target and ball possession contributed for success where as in defensive variables the total shots received and shots on target received differentiates between successful and



unsuccessful team. Lago Penas *et al.* (2010) <sup>[14]</sup> have studied many variables that discriminate among winning, drawing and losing teams. The results indicated that the winning teams were significantly better in offensive skills like shots on goal, effectiveness, assists and off side committed. The losing teams were better in crosses, offside received and red cards. Ibanez *et al.* (2009) <sup>[11]</sup> have concluded based on the results of the study that winning team had better values in all game related parameter except three point field goals, free throws missed and turnovers in basketball. Lorenzo *et al.* (2010) <sup>[16]</sup> have found out that the winning teams exhibited lower ball possession per game and better offensive and defensive efficacy.

Wouter Frencken and Koen Lemmink, (2007) <sup>[22]</sup> suggested that the changes in the centre position of teams, accompanied by changes in surface area, indicate goal-scoring opportunities. Jozeb Bergier, *et al.* (2007) <sup>[12]</sup> found that due to multi directional analysis of offensive actions ending with a goal, it was demonstrated that the place of their beginning stages was usually in with an area of attack of a football field (41.6%) and a central area (41.21%). Luhtanen *et al.* (2001) <sup>[17]</sup> evaluated, that Holland was the first in ball possession (8.9 km) and second in the amount of passes and shots, and also closes at the top place in the corresponding successful executions. Gomez *et al.* (2013) <sup>[16]</sup>, highlighted that elite women's basketball teams obtained a higher offensive effectiveness when starting their attack in the offensive key area, probably due to offensive rebounds. Conversely, a previous investigation analyzing then umber of offensive rebound sin winning and losing college team sin close games documented an unclear difference [Conte *et al.*, 2018] <sup>[2]</sup>. Delgado-Bordonau *et al.* (2013) <sup>[3]</sup>, results present important information in relation to some aspects of the game which can differentiate between successful and unsuccessful teams in soccer. Overall, offensive variables related to shotsongoalandgoaleffectivenessappeartobebetterindicatorsoft eam'ssuccessintheWorldCup than defensive variables.

## Conclusion

The result of the study was that there would be a significant functional association between the team's success and the factors related to tactical overview, defensive overview and offensive overview. The results of the study indicated that three variables of offensive overview, three variables of defensive overview and two variables in tactical overview showed functional association between team success and failure. However, all the remaining variables did not contribute for the team success. Hence the investigators hypothesis was partially held true for the above mentioned hypothesis.

The results of the study has shown that the successful raid with toe touch, successful raid with hand touch and successful raid with chain escape showed significant difference among the top four teams. Hence the investigator hypothesis was held true for these three variables. The result also have shown that the unsuccessful raid with toe touch, unsuccessful raid with hand touch, unsuccessful raid with chain escape, successful raid with kicking, unsuccessful raid with kicking, successful raid with jumping turn over anti and unsuccessful raid with jumping turn over anti did not have significant difference. An analysis of offensive overview reveals that the selected variables such as higher number of successful and less number of unsuccessful hand touch, and toe touch show a significant association with team success.

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