

**A PERFORMANCE OF THE MALAYSIA RUGBY SEVENS TEAM  
BASED ON SELECTED PERFORMANCE INDICATORS ON A  
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## **A PERFORMANCE OF THE MALAYSIA RUGBY SEVENS TEAM BASED ON SELECTED PERFORMANCE INDICATORS ON A VARIOUS ASIA-LEVEL RUGBY SEVENS TOURNAMENT FROM 2018 - 2020.**

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### **ABSTRACT**

*Identification of performance indicators related to the status of the game (winning and losing) is needed for a tactical approach especially in improving the Malaysia Men's Rugby Seven team. This study aims to characterize team performance indicators based on the game status of Malaysia men's rugby sevens teams. A total of 16 matches (winning, n=8, losing, n=8) for the national team from various Asia-level tournaments from years 2018 to 2020 were collected using Sportscodel performance analysis software and a notational analysis form. The performance indicators variables are extracted from the excel spreadsheet using the visual basic application of Microsoft excel before being exported to SPSS version 26 with the significant value is set at  $p < 0.05$ . Based on the analysis, there is no significant difference in the winning performance and losing performance of the Malaysia Men's Rugby Sevens Team. The finding from this research can be utilized by the coaches and practitioners in improving the rugby sevens team performance.*

**Keywords:** *Performance Analysis, Performance Indicators, Notational Analysis, Men's rugby sevens.*

## INTRODUCTION

Rugby is a team sport that mainly involves passing and running when attacking and tackling the opponent from moving forward or converting a try. Using an oval shape of a ball, a rugby player can run with the ball to the passed over the opponent and perform a try (grounding the ball in the opponent's try area) to score points. In addition, rugby players can kick the ball up and under or ground the ball to gain more distance during the game.

In general, rugby is divided into two types: rugby union and rugby league. Rugby union is accepted almost in all the playing rugby countries. Rugby league starts to become popular, and more countries played this type of game. The main difference between rugby union and rugby league is the rules and regulations of the play. However, their game attributes are still the same such as tackles, mauls, and rucks against opponents. Both types of rugby games have their world cup tournament.

Contact team sports like rugby require tactical deliberation (Hughes and Jones, 2005, Deutsch, Kearney, and Rehner, 2007, Duthie, Fyne and Hooper, 2005) at competitive levels. Previous studies have focused specifically on tactical parameters (Higham et al, 2014) physiological parameters (Higham et al, 2014), physiological parameters (Coutts, Reaburn and Abt, 2003, Higham, Pyne Anson and Eddy, 2013), or combination components between tactical and physiological parameters (Duthie, Pyne and Hooper, 2003, Duthie, Pyne and Hooper, 2003, Higham, Pyne, Anson and Eddy, 2013). This study focuses on the winning and losing performance of the Malaysia Rugby Sevens team based on the selected performance indicators.

## METHOD

The observational research used notational analysis for data collection. This study will focus on the selected performance indicators of team performance at winning and losing performance in different major tournaments.

### *Performance indicators*

This research focuses on 15 performance indicators adapted from Higham et. al. (2014). The performance indicators described how the team used the ball when in possession. All performance indicators were analyzed as absolute values such as values per min of possession time or per try scored as presented in table 1, pg 173.

*Table 1: Performance indicators are based on the phase of play.*

Performance Indicator	Definition
Minute of possession	Duration and measure of how long the analyzed team holds the ball in a match which is recorded in minutes.
Try scored	A try scored can be defined as when the ball is grounded or put over the opponent's goal line in the in-goal area.
Passes	A pass is an action that to transferring a ball to a teammate by throwing it backward and not forward.

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Passes per min of possession	The total passes analyzed during a match are divided by the min of possession recorded during the game.
Pass per try scored	The total passes analyzed during a match are divided by the total try scored by the respective team.
Ruck	Ruck can occur if the ball seems to be on the ground and players are near one or more players from each side who are on their feet. In the ruck, players do not control the ball and must use their feet to push the ball or drive over it to move away from the nearside foot of the team, at which stage it can be collected.
Ruck per try scored	The total ruck analyzed during a match is divided by the total try scored by the respective team.
Mauls	Mauls can occur when a player carries a ball and contact the opponent and while both players are on their feet, another player came and joins the contact.
Ruck and mauls per in of possession	The total of ruck and mauls analyzed during a match is divided by the min of possession recorded during the game.
Kick	A kick can occur when a player uses his foot to make a contact and push the ball forward for his teammate to catch.
Kick per min of possession	The total of kicks analyzed during a match is divided by the min of possession recorded during the game.
Kick per pass	The total of kicks analyzed during a match is divided by the total passes recorded during the game by the respective team.
Ruck and mauls per kick	The total of rucks and mauls analyzed during a match is divided by the total of kicks analyzed during the match by the respective team.
Turnover conceded	A turnover conceded can be occurred when a team loses possession of the ball to their opponent.
Turnover conceded per min of possession	The total of turnover conceded analyzed during a match is divided by the min of possession recorded during the game.

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*Adapted from: Higham, et al. (2014).*

## Matches

The matches (n=16) for the Malaysia Rugby Sevens team from the various tournament namely Asia Series, and Southeast Asia Games (SEA Games) from 2018-2020 were downloaded from the Asia Rugby web page and Sea Games broadcast match. The game is further divided between winning performance and losing performances by Malaysia Rugby Sevens Team (winning; n=8, Losing; n=8).

## DATA ANALYSIS

### Descriptive

The researcher focuses on the analysis data between the winning and losing of the Malaysia Rugby sevens team. The demographic data is based on mean and standard deviation and: minimum and maximum. The detail is as table 2 below:

*Table 2: Demographic data between winning and losing of the Malaysia Rugby sevens team.*

Performance Indicator	Winning (n=8)		Losing (n=8)	
	Mean (SD)	Min - max	Mean (SD)	Min - max
Possession time (min)	3.34 (0.71)	2.27-4.24	3.14 (.78)	2.29- 4.12
Try scored	4.00 (1.51)	2.00 - 7.00	1.14 (1.07)	0.00-3.00
Passes	32.88 (13.25)	12.00- 48.00	23.57 (9.13)	15.00- 36.00
Passes per minute possession	9.63 (3.37)	5.13- 13.81	7.42 (1.76)	5.13- 13.81
Passes per try score	8.31 (2.73)	5.75- 13.00	13.29 (12.67)	0.00 – 35.00
Ruck	8.25 (3.66)	2.00 – 13.00	11.29 (3.73)	6.00- 16.00
Ruck per try score	2.21 (1.17)	1.00 – 4.00	6.00 (5.86)	0.00-16.00
Maul	0.00 (0.00)	0.00	0.00 (0.00)	0.00
Maul and ruck per minute possession	2.33 (0.98)	0.86- 3.70	3.63 (1.01)	1.92- 5.06
Kick	1.00 (1.30)	0.00- 3.00	0.71 (.49)	0.0- 1.00
Kick per minute possession	0.36 (0.56)	0.00-1.28	0.25 (0.17)	0.00-0.44
Kick per pass	0.05 (0.07)	0.00-0.17	0.39 (0.03)	0.00-0.07
Ruck and maul per kick	3.46 (5.63)	0.00- 13.00	7.71 (6.29)	0.00- 16.00
Turnover conceded	0.25 (0.71)	0.00- 2.00	1.00 (1.53)	0.00-4.00
Turnover conceded per Minute possession	0.11 (0.30)	0.00-0.84	0.38 (0.61)	0.00-1.56

There is no difference in possession time between the winning and losing performance of the Malaysia Men's Rugby Sevens national team. Malaysia possesses more time when they win the game ( $3.34 \pm 0.71$ ) with a maximum possession time of 4.24 minutes compared to when they lost ( $3.14 \pm 0.78$ ) with 4.12 minutes of possession.

Try scores shows a greater difference on the Malaysia team compared to winning and losing. Malaysia makes an average of  $4.0 \pm 1.51$  tries per winning match with a minimum try is 2 and a maximum try is seven times. Malaysia makes only 1.14 (0.78) tries when they lost with a minimum of no try per match and a maximum of three tries.

Passes have shown a greater difference between winning and losing matches. Malaysia National rugby sevens team completed 32.88 (13.25) time of passing with a maximum of 48 passes. While in losing matches, 23.57 (9.13) passing per losing match with a minimum of 15 passing and a maximum of 36 passing.

In winning the game, Malaysia made more passing with  $9.63 \pm 3.37$  times passing per minute of possession with a minimum of 5.13 times and a maximum of 13.81 passes. While in the losing match,  $7.42 \pm 1.76$  passing per minute of possession has been made. In terms of passes per try score, the Malaysia team makes less passing per try scored in the winning game

compared to the losing game.

Malaysia has made fewer passes per try scored in the winning game compared to the losing game where  $8.31 \pm 2.73$  passes per try scored in the winning game and  $13.29 \pm 12.67$  passes for a try scored in the losing game. The range of minimum is 5.75 passes and a maximum of 13 passes per try scored for a winning game. Whereby for losing match the range of passes per try is between 0 to 35 times.

Malaysia performs 8.25 (3.66) times in ruck for winning games compared to 11.29 (3.73) times for losing games. The minimum of two and maximum of 13 times of ruck in the winning game. Whereby, the range of minimum and maximum for a losing game is between six to 16 times of ruck.

The Malaysia national team performs fewer rucks per try scored in the winning game ( $2.21 \pm 1.17$ ) compared to the losing game ( $6.0 \pm 5.86$ ). The range of minimum is one and maximum four times of rucking for the winning game. Whereby, a minimum of zero and a maximum of 16 times of ruck per try scored has been made in a losing match. No maul has been made by Malaysia in all studied matches either winning or losing.

Malaysia performs fewer rucks per minute of possession in the winning game by 2.33 (0.98) times per minute of possession with the maximum ruck formation being 3.70 times. Whereby, 3.63 (1.01) rucks perform in one minute of possession in the losing match with the range of a minimum of 1.92 to 5.06 times.

The Malaysia national team performs more kicks in winning games ( $1.00 \pm 1.30$ ) with a maximum of three kicks per winning game. Whereby  $0.71 \pm 0.49$  kicks on average for a losing game with a maximum of one kick per losing game with a maximum of 1.28 kicks. On the other hand,  $0.25 \pm 0.17$  kick has been made per minute possession in a losing game with a maximum of 0.44 kick. A comparison of kicks per pass shows a higher value of kicking has been made in the losing game ( $0.39 \pm 0.0$ ). whereby  $0.05 \pm 0.07$  kick has been made in the winning game.

The Malaysia national sevens team performs more ruck per kick in losing matches compared to winning matches. A mean of  $7.71 \pm 6.29$  ruck per kick has been made in losing matches with a maximum of 16 ruck per kick. Whereby,  $3.46 \pm 5.63$  ruck per kick has been made in winning matches with a maximum ruck per kick is 13.

Turnover conceded is more in the losing match, where the national team lost the position by  $1.0 \pm 1.53$ ) in the losing match with a maximum of four times. Malaysia lost their ball position fewer in winning matches with a mean of 0.25 (0.71) with the actual two times lost position per winning match. Turnover conceded per minute possession, winning matches shows lower value in winning ( $0.11 \pm 0.30$ ) compared to losing match ( $0.38 \pm 0.61$ ).

## FINDINGS

The selection of statistical procedures to analyze the data for the research objective is based on the normality of the data. If the data is normal, ANOVA will be used together with Bonferroni. If the data is not normal, the researcher will choose non-parametric statistics, Kruskal Wallis

and Man-Whitney for data analysis. The detailed analysis as table 3 below:

Table 3: Differences in performance between winning and losing of Malaysia Rugby 7s team

\*<sup>t</sup>=Independent T-test; <sup>M</sup>=Mann Whitney U

Performance Indicators	Winning (n=8)		Loosing (n=8)		Sig.
	Mean (SD)	95% CI	Mean (SD)	95% CI	
Possession time (min)	3.34 (0.71)	2.74- 3.92	3.14 (.78)	2.42- 3.86	0.47 <sup>t</sup>
Try scored	4.00 (1.51)	2.74- 5.26	1.14 (1.07)	0.15- 2.13	<b>0.00<sup>t</sup></b>
Passes	32.88 (13.25)	21.80- 43.95	23.57 (9.13)	15.13- 32.01	0.09 <sup>t</sup>
Passes per minute possession	9.63 (3.37)	6.81- 12.44	7.42 (1.76)	5.79- 9.04	0.11 <sup>t</sup>
Passes per try score	8.31 (2.73)	6.02- 10.59	13.29 (12.67)	1.57- 25.00	0.49 <sup>t</sup>
ruck	8.25 (3.66)	5.19- 11.31	11.29 (3.73)	7.84- 14.73	0.1 <sup>t</sup>
Ruck per try score	2.21 (1.17)	1.23- 3.19	6.00 (5.86)	0.58- 11.42	0.19 <sup>t</sup>
Maul	0.00 (0.00)	0.00	0.00	0.00	NIL
Maul and ruck per minute possession	2.33 (0.98)	1.51- 3.15	3.63 (1.01)	2.70- 4.56	0.19
Kick	1.00 (1.30)	-0.9- 2.09	0.71 (.49)	0.26- 1.17	0.88 <sup>M</sup>
Kick per minute possession	0.36 (0.56)	-0.11- 0.83	0.23 (0.17)	0.07 – 0.39	0.58 <sup>M</sup>
Kick per pass	0.05 (0.07)	-0.01- 0.11	0.39 (0.03)	0.01- 0.07	0.73 <sup>t</sup>
Ruck and maul per kick	3.46 (5.63)	-1.25- 8.16	7.71 (6.29)	1.90- 13.53	0.12 <sup>t</sup>
Turnover conceded	0.25 (0.71)	-0.34- 0.84	1.00 (1.53)	-0.41- 2.41	0.13 <sup>t</sup>
Turnover per min possession	0.11 (0.30)	-0.14- 0.35	0.38 (0.61)	-0.18- 0.95	0.15 <sup>t</sup>

This study is to investigate the difference in selected performance indicators between winning and losing in Malaysia's national rugby sevens teams' performance. Based on the analysis, there is a significant difference in selected performance indicators between winning and losing match performance by the National sevens team.

Try scores show a significant difference ( $p=0.00$ ) between the winning game and the losing game. Malaysia performs more tries ( $4.00\pm 1$ ) in winning matches with the range of tries made between 2.74 to 5.26 try. Whereby,  $1.14\pm 1.07$  tries have been made in a losing match

with a minimum of 0.15 tries and a maximum of 2.13 tries per losing match.

There is no significant difference in others performance indicators; position time ( $p=0.47$ , winning  $3.34\pm 0.71$ , losing  $3.14\pm 0.78$ ), passes ( $p=0.09$ , winning  $32.88\pm 13.25$ , losing  $23.57\pm 9.13$ ), passes per min position ( $p=0.11$ , winning  $9.63\pm 3.37$ , losing  $7.42\pm 1.76$ ), passes per try score ( $p=0.49$ , winning  $8.31\pm 2.73$ , losing  $13.29\pm 12.67$ ), ruck ( $p=0.09$ , winning  $8.25\pm 3.66$ , losing  $11.29\pm 3.73$ ), ruck per try score ( $p=0.19$ , winning  $2.21\pm 1.17$ , losing  $6.0\pm 5.86$ ), Maul and ruck per minute possession ( $p=0.19$ , winning  $2.33\pm 0.98$ , losing  $3.63\pm 1.01$ ), kick ( $p=0.88$ , winning  $1.0\pm 1.3$ , losing  $0.71\pm 0.49$ ), kick per minute position ( $p=0.58$ , winning  $0.36\pm 0.56$ , losing  $0.23\pm 0.17$ ), kick per pass ( $p=0.73$ , winning  $0.05\pm 0.07$ , losing  $0.39\pm 0.03$ ), ruck and maul per kick ( $p=0.12$ , winning  $3.46\pm 5.63$ , losing  $7.71\pm 6.29$ ), turnover conceded ( $p=0.13$ , winning  $0.25\pm 0.71$ , losing  $1.0\pm 1.53$ ), and turnover per minute possession ( $p=0.15$ , winning  $0.11\pm 0.30$ , losing  $0.38\pm 0.61$ ).

## CONCLUSION

The insight from this research can be as a guide to current national coaches in the planning of training programs. Based on the finding, there is no significant difference between the winning performance and losing performance of the Malaysia Rugby Sevens Rugby Team. The previous finding stated there must be a difference between winning performance and losing performance (Moolman et al. 2021) in terms of tactical deliberation. Thus, it is important to plan a specific tactical plan for the national rugby sevens team which is able to discriminate between winning and losing performance.

### *Authors' Contribution:*

Norasrudin Sulaiman: the main researcher contributes to the whole process of the research.

Associate Professor Dr Hashbullah Ismail: contribute to the study design, method, statistic, and discussion.

Associate Professor Dr Mohamed Firhad Raja Azidin : the idea of the research

Associate Professor Dr Hosni Hasan: the idea of the research

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