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EXTENDED ABSTRACT

Comparative Analysis of Performance Indicators Determining Winning and Losing Conditions of Selangor Red Giants in the MSC Final

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I. Introduction

Understanding key performance variables is crucial for optimizing competitive success in esports [1]. Despite the rapid growth of the esports industry, research examining performance indicators within competitive gameplay remains limited. This study addresses this gap by analyzing the Selangor Red Giants' (SRG) performance in the MSC Final, focusing on tactics, gameplay dynamics, and individual player statistics under both winning and losing conditions. By providing a comparative perspective on key variables that influence match outcomes, the study contributes to the growing body of esports performance analysis. The findings offer valuable insights for strategic planning and performance enhancement, informing data-driven decision-making for future tournaments [2].

II. Methods

This study employed video-based notational analysis with manual data collection to examine the performance of the Selangor Red Giants (SRG) during seven matches in the MSC Final. The analysis focused on key performance variables, including team tactics, gameplay sequences, and individual player statistics. The primary indicators analyzed included objectives and combat-related events such as start and contest actions involving major neutral objectives, start lord, start turtle, contest lord, and contest turtle. Zoning actions around objectives and team engagements, zoning turtle, zoning lord, and zoning war. Engagement types, including ganking and team fights, range from 2v1 to 5v5 scenarios. These events were further categorized based on their outcomes into successful and unsuccessful attempts.

Additionally, the spatial context of engagements was considered, with events coded based on their occurrence in one of the three primary lanes: Gold Lane, EXP Lane, and Mid Lane. This spatial-temporal approach allowed for a more detailed understanding of lane-specific strategies and their contributions to overall match performance. To ensure the accuracy and consistency of the data, a test-retest reliability procedure was applied. The reliability of the notational analysis instruments was maintained at a correlation coefficient (r) greater than 0.80, while the percentage of error was kept below 10%, adhering to accepted standards for performance analysis in sports research. Descriptive statistics were used to summarize performance indicators across matches, while independent sample t-tests were conducted to compare these indicators under winning and losing conditions. This comparative analysis aimed to identify significant differences and underlying factors that influenced SRG's match outcomes, offering practical insights for performance optimization in competitive esports.

III. Results and Discussion

A. Descriptive Analysis

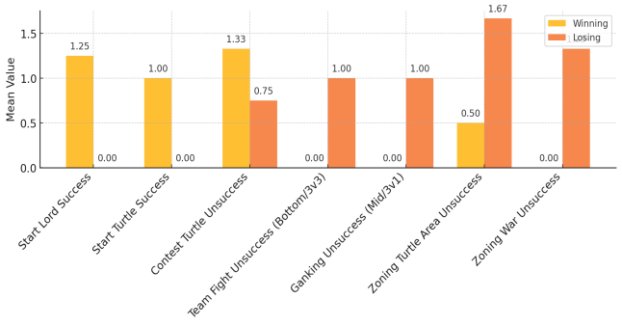

Fig.1 Descriptive values of indicators excluding gold earned.

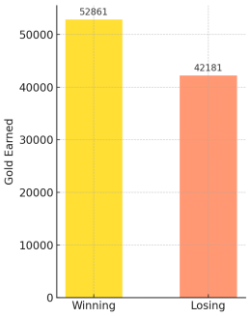

Fig.2 Gold earned between groups.

Figure 1compares the mean values of various tactical and gameplay-related indicators under winning and losing conditions. Winning matches are characterized by successful engagements in objectives such as Start Lord, Start Turtle, and

more effective Contest Turtle attempts. In contrast, losing matches display a higher frequency of unsuccessful actions, particularly in Team Fights (3v3 Bottom), Ganking (3v1 Mid), Zoning Turtle Area, and Zoning War. The most prominent difference appears in Zoning Turtle Area Unsuccess, indicating its strong influence on match outcomes. These findings suggest that objective control and zone-based strategies are critical contributors to success in competitive esports.

Figure 2 isolates and compares the total gold earned under winning and losing conditions. Winning teams accumulated significantly more gold (*mean* = 52,861) compared to losing teams (*mean* = 42,181). This gap reflects superior map control, objective success, and kill participation, all of which contribute to economic advantages and item progression during matches. In essence, greater gold accumulation supports better team scaling and execution, reinforcing its role as a foundational indicator of match success.

B. Inferential Analysis

The results of the independent t-test (Table I) revealed that Start Lord Success was the only performance indicator with a statistically significant difference between winning and losing conditions ($p < 0.05$). Other variables, including gameplay patterns and individual player statistics, did not demonstrate significant effects on match outcomes. These findings suggest that early objective control, specifically securing the first Lord, played a pivotal role in determining the Selangor Red Giants' success during the MSC Final.

TABLE I
INFERENTIAL ANALYSIS

		Statistic	**DF**	**P**
Start Lord Success	Mann-Whitney U	0.00	5.00	0.036

IV. CONCLUSIONS

This study highlights the strategic importance of early objective control in competitive esports. Securing the first Lord significantly contributed to SRG's victories, while repeated failures in zoning turtle areas were strongly associated with losses. Other gameplay indicators had minimal influence, suggesting that early map dominance, rather than overall engagement frequency, is more critical to success. These insights emphasize the need for focused early-game strategies and refined zoning tactics to enhance performance in high-stakes tournaments.

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