



Analysis of Ball Possession and Shooting Frequency in the Men's Indoor Hockey Matches at the 2023 SEA Games

Istiqomah¹, Rian Triprayogo², Dikdik Najmu Ramadan³, Sendy Mohamad Anugrah⁴

¹Universitas Sultan Ageng Tirtayasa, 8883220016@untirta.ac.id

²Universitas Sultan Ageng Tirtayasa, riantriprayogo22@gmail.com

³Universitas Sultan Ageng Tirtayasa, dikdik.najmu@untirta.ac.id

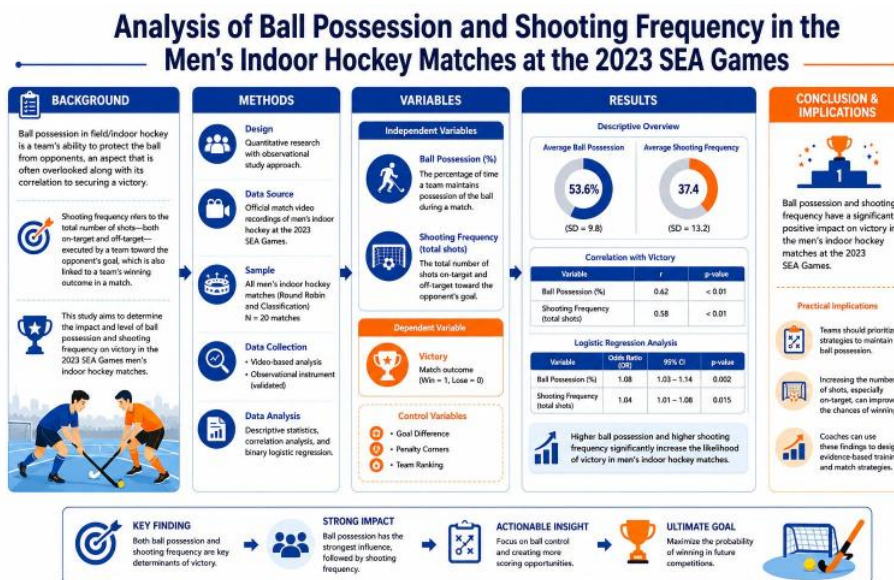
⁴Universitas Sultan Ageng Tirtayasa, sendymohamadanugrah@untirta.ac.id

(8883220016@untirta.ac.id)

ABSTRACT

Ball possession in field/indoor hockey is a team's ability to protect the ball from opponents, an aspect that is often overlooked along with its correlation to securing a victory. Meanwhile, shooting frequency refers to the total number of shots—both on-target and off-target—executed by a team toward the opponent's goal, which is also linked to a team's winning outcome in a match. This study aims to determine the impact and level of ball possession and shooting frequency on victory in the 2023 Sea Games men's hockey tournament. This study employed a descriptive quantitative research design conducted through observational analysis of match video documents. The research instrument included a personal computer (PC) setup utilized for match video observation. The population of this study comprised the men's indoor hockey matches at the 2023 Sea Games, with a sample consisting of 8 match videos from the men's category sourced from the Thailand Hockey Association's official YouTube channel. The findings indicated that teams with higher ball possession secured victories in approximately 62.5% of the matches, while 37.5% of the winning teams had lower ball possession. Regarding shooting frequency, teams that won with a higher frequency of shots accounted for 87.5%, whereas only 12.5% won the match with a lower shooting frequency. This study concludes that a higher shooting frequency correlates with a greater winning probability, provided that the shots are precisely directed on-target.

Keywords: Shooting, hockey, Sea Games, victory



INTRODUCTION

Hockey is a game sport utilizing sticks to control, dribble, and pass the ball, and has been globally recognized since 1900 (Sari et al., 2022). In Indonesia, the development of hockey receives full government support through the Central Board of the Indonesian Hockey Federation (PP FHI) acting as the parent organization recognized by the Central National Sports Committee of Indonesia (KONI) and the Ministry of Youth and Sports (Kemenpora RI). This support and recognition have led to an increased frequency of championships and rising popularity of hockey on a national level (Hasanah et al., 2021). Organizationally, the sport in Indonesia is overseen by the Indonesian Hockey Federation (FHI) (Hamzah, 2016), while its international governance falls under the Federation International Hockey (FIH) (Niandika, 2022).

FHI governs two match categories: indoor hockey and outdoor hockey, which possess fundamental differences in player count and other technical rules (Metikasari & Roepadjadi, 2020). Despite varying regulations, both categories share the primary objective of winning matches by scoring the maximum number of goals into the opponent's net from within the shooting circle. Although studies on team performance are prevalent, specific understanding regarding the impact of technical variables such as ball possession and shooting frequency in indoor hockey remains extremely limited. Previous research has leaned more towards physical aspects like strength and stamina, as well as the psychological facets of player mentality. In-depth analyses regarding how ball possession and actual shot volumes tangibly influence the final winning outcome are frequently neglected and lack detailed contextual study within indoor hockey.

The success of the Indonesian men's indoor hockey team in securing a gold medal at the 2023 SEA Games represents a substantial momentum for the sport's regional development. The SEA Games itself is a biennial multi-sport event involving eleven Southeast Asian nations (Danarstuti Utami, 2015). This research serves as an evaluation effort to offer a scientific foundation for coaches and players to enhance training quality in pursuit of sustained achievement. By processing statistical data from match samples, this study zeroes in on the topic "Analysis of Ball Possession and Shooting Frequency in the Men's Indoor Hockey Matches at the 2023 SEA Games".

METHODS

This research constitutes a systematic investigation intended to enhance knowledge and scrutinize specific issues that demand solutions (Setyo Budiwanto, 2017). It utilizes quantitative methodology via a descriptive approach to formulate mathematical models, theories, and hypotheses regarding the observed phenomena (Sandu Siyoto & M. Ali Sodik, 2015). The research population includes all men's indoor hockey matches during the 2023 SEA Games (comprising 16 matches), where the population represents the totality of objects conforming to the research characteristics (Hanifah et al., 2020).

The sampling technique employed a nonprobability sampling approach specifically utilizing

purposive sampling, which dictates object selection based on designated research criteria (Maidiana, 2021). The utilized sample is drawn from a population subset selected for observational purposes (Candra Susanto et al., 2024) , comprising eight matches fitting the inclusion criteria of being sourced as videos from the Thailand Hockey Association's YouTube account.

Through video observation, analyses were performed on the independent variables (ball possession and shooting frequency) alongside the dependent variable (victory). Data were subsequently processed utilizing descriptive statistical analysis to calculate the percentage of ball possession duration and the volume of shots (both on target and off target) to ascertain their influence on the final match outcome. For statistical analysis, gathered data is converted into percentages utilizing the formula:

$$P = n/N \times 100$$

Remarks:

- n : number of successful actions
- N : total number of actions
- 100 : constant integer
- P : percentage (%)

RESULTS

Research conducted on match videos found on the Thailand Hockey Association YouTube account yielded the results presented in the following tables:

Table 1. Overall Match Analysis: Cambodia vs. Thailand

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (Win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Cambodia	16:39,32	41,64%	1	3	4	1 (Loss)
Thailand	23:20,78	58,36%	7	9	16	7 (Win)

Source: Personal Document, 2026

Based on **Table 1**, the overall results comparing ball possession and shooting frequency during the match between Cambodia and Thailand are presented. Cambodia held ball possession for roughly 41.64% of the time, attempting a total of four shots. Meanwhile, Thailand maintained possession for approximately 58.36% and recorded 16 total shots, leading to Thailand securing a commanding victory. Detailed breakdowns of these parameters are further shown below:

Table 2. Ball Possession Breakdown: Cambodia vs. Thailand

Quarter	Cambodia		Thailand	
	Ball Possession Time	Points	Ball Possession Time	Points
1	04:36,61	1	05:23,39	1
2	08:45,97	1	11:14,39	4

Quarter	Cambodia		Thailand	
	Ball Possession Time	Points	Ball Possession Time	Points
3	12:08,07	1	17:51,93	6
4	16:39,32	1	23:20,78	7
%	41,64%	1	58,36%	7

Source: Personal Document, 2026

Based on **Table 2**, Thailand demonstrated consistent dominance in ball possession across all quarters against Cambodia. From the first to the final quarter, Thailand logged longer possession durations than Cambodia. By match end, Thailand had controlled the ball for 23:20.78 compared to Cambodia's 16:39.32. Overall, Thailand led in possession at 58.36% to Cambodia's 41.64%. The match concluded with a decisive 7-1 victory for Thailand. This outcome illustrates that Thailand's victory aligns with their extended ball possession.

Table 3. Shooting Frequency Breakdown: Cambodia vs. Thailand

Quarter	Cambodia				Thailand			
	Penalty Stroke	Penalty Corner	Total Shots	Points	Penalty Stroke	Penalti Corner	Total Shots	Points
1		1	3 (1 goal)	1		2	3 (1 goal)	1
2			1	1	1	1	5 (3 goal)	4
3				1		3	5 (2 goal)	6
4				1		2	3 (1 goal)	7
Total	-	1	4	1	1	8	16	7

Source: Personal Document, 2026

Table 3 displays shooting frequency details. Thailand recorded 16 shots, earning 7 points (1 in Q1, 3 in Q2, 2 in Q3, 1 in Q4). Furthermore, Thailand obtained 1 penalty stroke and 8 penalty corners. Conversely, Cambodia executed 4 shots, scoring 1 point in the first quarter, alongside 1 penalty corner in the same period.

Table 4. Overall Match Analysis: Indonesia vs. Cambodia

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Indonesia	22:20,65	55,86%	18	13	24	6 (win)
Cambodia	17:39.35	44,14%	3	1	4	1 (loss)

Source: Personal Document, 2026

Table 4 reveals that Indonesia held possession for 55.86% and accumulated a total of 24 shots. Cambodia maintained possession for 44.14% with 4 total shots, culminating in a definitive victory for Indonesia.

Table 5. Ball Possession Breakdown: Indonesia vs. Cambodia

Quarter	Indonesia		Cambodia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	04:35,35	1	05:14,65	0
2	10:34,95	3	09:25,05	0
3	16:28,46	4	13:31,54	0
4	22:20,65	6	17:39.35	1
%	55,86%	6	44,14%	1

Source: Personal Document, 2026

Table 5 signifies increasing Indonesian dominance. Although Cambodia edged out possession in the first quarter (05:14.65 vs. 04:35.35), Indonesia led 1-0. Indonesian control solidified from the second quarter onward, ending with 22:20.65 compared to Cambodia's 17:39.35. Overall possession stood at 55.86% for Indonesia against 44.14% for Cambodia. The final score of 6-1 in favor of Indonesia mirrors the disparity in possession duration.

Table 6. Shooting Frequency Breakdown: Indonesia vs. Cambodia

Quarter	Indonesia				Cambodia			
	Penalty Stroke	Penalty Corner	Frequency shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1		2	8 (1 goal)	1			1	0
2			6 (2 goal)	3				0
3			6 (1 goal)	4				0
4		3	4 (2 goal)	6		1	3 (1 goal)	1
Total	-	5	24	6	-	1	4	1

Source: Personal Document, 2026

Table 6 details that Indonesia executed 24 shots on goal, securing six points across all quarters , and obtained five penalty corners. Cambodia managed four shots, scoring a single point and earning one penalty corner in the final quarter. The match ended 6-1 for Indonesia.

Table 7. Overall Match Analysis: Indonesia vs. Malaysia

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Indonesia	19:15,96	48,15%	8	6	14	2 (loss)
Malaysia	20:44,04	51,85%	7	6	15	3 (win)

Source: Personal Document, 2026

Table 7 displays Indonesia holding 48.15% possession and 14 shots. Malaysia edged them out with 51.85% possession and 15 shots, achieving victory.

Table 8. Ball Possession Breakdown: Indonesia vs. Malaysia

Quarter	Indonesia		Malaysia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	04:52,07	1	05:07,93	0
2	09:26,30	1	10:23,70	1
3	14:49,08	2	15:10,92	1
4	19:15,96	2	20:44,04	3
%	48,15%	2	51,85%	3

Source: Personal Document, 2026

Table 8 outlines a tightly contested match. Malaysia led early possession (05:07.93) but trailed Indonesia 1-0 in points. This possession trend extended through the third quarter (Malaysia 15:10.92 vs. Indonesia 14:49.08) while Indonesia maintained a 2-1 lead. By the final quarter, Malaysia leveraged their 51.85% total possession to flip the match to a 3-2 victory. Indonesia finished with 48.15% possession. Malaysia's slight statistical advantage in possession led to the win.

Table 9. Shooting Frequency Breakdown: Indonesia vs. Malaysia

Quarter	Indonesia				Malaysia			
	Penalty Stroke	Penalty Corner	Frequency Shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1			3 (1 goal)	1			2	0
2			1	1		1	4 (1 goal)	1
3			2 (1 goal)	2			2	1
4		4	8	2		4	7 (2 goal)	3
Total	-	4	14	2	-	5	15	3

Source: Personal Document, 2026

Table 9 highlights the competitive nature of the game. Indonesia recorded 14 shots netting two goals and four penalty corners. Malaysia narrowly led with 15 shots yielding three goals, alongside five penalty corners. Malaysia's minor edge in shooting and set pieces correlated directly with their triumph.

Table 10. Overall Match Analysis: Philippines vs. Cambodia

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Philippines	22:48,95	57,22%	4	3	7	0 (loss)
Camboa	17:11,05	42,78%	4	19	23	8 (win)

Source: Personal Document, 2026

Table 10 shows the Philippines commanded 57.22% possession with a mere seven shots. Conversely, Cambodia, with only 42.78% possession, executed a staggering 23 shots to win the match

decidedly.

Table 11. Ball Possession Breakdown: Philippines vs. Cambodia

Quarter	Philippines		Cambodia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	05:31,21	0	04:28,79	2
2	11:22,09	0	08:37,91	3
3	16:40,31	0	13:19,69	3
4	22:48,95	0	17:11,05	8
%	57,22%	0	42,78%	8

Source: Personal Document, 2026

As indicated in **Table 11**, the Philippines dominated possession consistently every quarter. This trend culminated in a final tally of 22:48.95 (57.22%) against Cambodia's 17:11.05 (42.78%). Strikingly, this dominance did not translate to victory. The Philippines suffered a heavy 8-0 defeat, proving Cambodia could win despite an inferior possession rate.

Table 12. Shooting Frequency Breakdown: Philippines vs. Cambodia

Quarter	Philippines				Cambodia			
	Penalty Stroke	Penalty Corner	Frequency Shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1			1	0		1	10 (2 goal)	2
2				0			2 (1 goal)	3
3			4	0		2	2	3
4			2	0	1	2	9 (5 goal)	8
Total	-	-	7	0	1	5	23	8

Source: Personal Document, 2026

Table 12 clarifies that Cambodia's 23 shots heavily outmatched the Philippines' seven scoreless attempts. Cambodia also capitalized on one penalty stroke and five penalty corners , culminating in an 8-0 victory.

Table 13. Overall Match Analysis: Thailand vs. Singapore

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Thailand	15:42,15	38,03%	10	9	19	4 (win)
Singapore	24:17,85	61,97%	3	2	5	1 (loss)

Source: Personal Document, 2026

In **Table 13**, Thailand possessed the ball for just 38.03% but fired 19 shots. Singapore dominated possession at 61.97% but managed only five shots, allowing Thailand to secure the win.

Table 14. Ball Possession Breakdown: Thailand vs. Singapore

Quarter	Thailand		Singapore	
	Ball Possession Timen	Points	Ball Possession Timen	Points
1	04:22,17	0	05:37,83	1
2	08:39,79	1	11:20,21	1
3	12:15,08	3	17:44,92	1
4	15:42,15	4	24:17,85	1
%	38,03%	4	61,97%	1

Source: Personal Document, 2026

Table 14 underscores Singapore's consistent possession dominance spanning every quarter , amassing 61.97% overall versus Thailand's 38.03%. Nevertheless, this metric was not directly proportional to the final result. Trailing in the first quarter, Thailand recovered to win 4-1 , demonstrating victory with substantially lower possession.

Table 15. Shooting Frequency Breakdown: Thailand vs. Singapore

Quarter	Thailand				Singapore			
	Penalty Stroke	Penalty Corner	Frequency Shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1		1	4	0		1	2 (1 goal)	1
2		3	5 (1 goal)	1			3	1
3	1	1	5 (2 goal)	3				1
4		1	5 (1 goal)	4				1
Total	1	6	19	4	-	1	5	1

Source: Personal Document, 2026

Table 15 details Thailand's immense superiority in attacking volume, producing 19 shots, one penalty stroke, and six penalty corners. In contrast, Singapore produced a total of five shots and one penalty corner, scoring their lone goal early in the match. Thailand ended with a commanding 4-1 win.

Table 16. Overall Match Analysis: Thailand vs. Indonesia

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting I	
Thailand	16:27,39	41,14%	5	4	9	0 (loss)
Indonesia	23:32,61	58,86%	0	7	7	3 (win)

Source: Personal Document, 2026

Table 16 shows Thailand maintaining 41.14% possession and nine total shots , while Indonesia managed 58.86% possession with seven highly efficient shots to emerge victorious.

Table 17. Ball Possession Breakdown: Thailand vs. Indonesia

Quarter	Thailand		Indonesia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	03:44,54	0	06:15,46	1
2	07:18,39	0	12:41,61	1
3	12:00,41	0	17:59,59	2
4	16:27,39	0	23:32,61	3
%	41,14%	0	58,86%	3

Source: Personal Document, 2026

Table 17 reflects absolute possession dominance by Indonesia across all quarters (58.86% to 41.14%). Consequently, Indonesia's 3-0 victory perfectly parallels their extended ball control.

Table 18. Shooting Frequency Breakdown: Thailand vs. Indonesia

Quarter	Thailand				Indonesia			
	Penalty Stroke	Penalty Corner	Frequency Shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1				0		1	3 (1 goal)	1
2			3	0			1	1
3		1	2	0			2 (1 goal)	2
4		3	4	0			1 (1 goal)	3
Total	-	4	9	0	-	1	7	3

Source: Personal Document, 2026

Table 18 illustrates an anomaly: Thailand generated more total shots (nine versus seven) but failed to score. Despite Indonesia recording fewer attempts and just one penalty corner (against Thailand's four), they achieved a 3-0 shutout through superior clinical efficiency.

Table 19. Overall Match Analysis: Thailand vs. Malaysia

Team	Ball Possession Time	% Ball Possession	Shooting Frequency			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Thailand	19:13,54	48,06%	6	6	12	4 (loss)
Malaysia	20:46,46	51,94%	3	11	14	1 (win)

Source: Personal Document, 2026

Table 19 displays Malaysia possessing the ball 51.94% with 14 shots compared to Thailand's 48.06% and 12 shots, resulting in a Malaysian win.

Table 20. Ball Possession Breakdown: Thailand vs. Malaysia

Quarter	Thailand		Malaysia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	03:59,02	1	06:00,98	0
2	09:25,63	1	10:34,37	3
3	14:23,46	1	15:36,54	4
4	19:13,54	3	20:46,46	5
%	48,06%	3	51,94%	5

Source: Personal Document, 2026

Table 20 highlights Malaysia's persistent possession advantage in every quarter. Malaysia won the game 5-3, validating that their victory correlates strongly with extended ball possession.

Table 21. Shooting Frequency Breakdown: Thailand vs. Malaysia

Quarter	Thailand				Malaysia			
	Penalty Stroke	Penalty Corner	Frekuensi Shoot	Points	Penalty Stroke	Penalty Corner	Frequency Shoot	Points
1			1 (1 goal)	1			3	0
2		2	5	1	1	2	5 (3 goal)	3
3			2	1		2	4 (1 goal)	4
4		2	4 (2 goal)	3		2	2 (1 goal)	5
Total	-	4	12	3	1	6	14	5

Source: Personal Document, 2026

Malaysia exhibited heightened aggression, amassing 14 shots against Thailand's 12. This offensive volume resulted directly in a 5-3 win, complemented by their superiority in dead-ball situations (six penalty corners and one penalty stroke to Thailand's four penalty corners).

Table 22. Overall Analysis: Finals Match Indonesia vs. Malaysia

Team	Ball Possession Time	% Ball Possession	Frekuensi shooting			Final Score (win/loss)
			Shoot off Target	Shoot on Target	Total Shooting	
Indonesia	17:49,70	44,57%	8	8	16	3 (win)
Malaysia	22:10,30	55,43%	2	5	7	3 (loss)

PSO: Penalty Shootout Indonesia $\frac{2}{3}$, Malaysia $\frac{1}{3}$ (5-3 Indonesia Win)

Source: Personal Document, 2026

Table 22 reveals a stark contrast between possession and attacking frequency. Malaysia held a substantial 55.43% possession yet managed only seven total shots. Indonesia, while lacking possession (44.57%), was aggressively superior with 16 shots, ultimately driving them to secure a dramatic victory via Penalty Shootout.

Table 23. Ball Possession Breakdown: Finals Match Indonesia vs. Malaysia

Quarter	Indonesia		Malaysia	
	Ball Possession Time	Points	Ball Possession Time	Points
1	04:39,31	0	05:20,69	0
2	09:50,89	0	10:09,11	1
3	13:55,61	0	16:04,39	3
4	17:49,70	3	22:10,30	3
%	44,57%	3	55,43%	3
PSO	2 / 3	5	1 / 3	4

Source: Personal Document, 2026

Malaysia led in possession entirely throughout the match , taking a 3-0 lead into the final quarter. Despite Malaysia continuing to dominate the ball in the final frame, Indonesia staged an effective rally to tie the score 3-3, proving decisive effectiveness supersedes pure possession time.

Table 24. Shooting Frequency Breakdown: Finals Match Indonesia vs. Malaysia

Quarter	Indonesia				Malaysia			
	Penalty Stroke	Penalty Corner	Frequency Shoot	Points	Penalty Stroke	Penalty Corner	Frequency shoot	Points
1		1	1	0			1	0
2		1	6	0		1	1 (1 goal)	1
3		1	5	0		3	5 (2 goal)	3
4		1	4 (3 goal)	3				3
Total	-	4	16	3	-	4	7	3
PSO		2 / 3		5		1/3		4

Source: Personal Document, 2026

Table 24 shows Indonesia dominating the shot count from the second quarter onwards. Their relentless attacks materialized in three goals off four attempts in the final quarter to erase a massive deficit. Indonesia massively outperformed Malaysia in overall shot frequency (16 to 7), leading them to win the shootout 2-1.

DISCUSSION

Ball Possession Analysis

In this study, ball possession is defined as the active effort to secure the ball via dribbling and passing to teammates. Observational data demonstrates that teams commanding higher possession rates won 62.5% of their matches (5 of 8 matches), whereas teams trailing in possession secured victories in 37.5% of instances. Significant disparities in possession were largely absent, though isolated matches exhibited notable variances. High possession translating directly into victory occurred in matches like Cambodia vs. Thailand, Indonesia vs. Cambodia, and Thailand vs. Malaysia. Conversely, matches such as Philippines vs. Cambodia and Thailand vs. Singapore showcased teams

triumphing despite inferior possession times. Notably, the dramatic Indonesia vs. Malaysia final emphasized this dynamic, where Indonesia clinched the win following a shootout despite trailing in possession statistics. Strong ball retention remains a foundational asset for securing victory, with statistical findings confirming 62.5% of winning teams controlled the ball more effectively. Such control enables teams to systematically dismantle opponent defenses utilizing highly accurate passing to locate and exploit defensive gaps, leading directly to goals or high-probability scoring opportunities (Anugrah et al., 2022). Thus, superior ball possession fundamentally elevates the chance to secure a win. Nonetheless, the 37.5% counter-statistic emphasizes that possession is not an absolute, immutable prerequisite for victory (Pietersz & Syafii, 2025).

Shooting Frequency Analysis

Shooting frequency encapsulates all shot attempts directed at the goal, regardless of whether they score, are saved, or miss entirely. An overwhelming 87.5% of matches in the sample were won by the team recording a higher shot frequency, leaving a mere 12.5% for teams winning with fewer shots. In essence, 7 out of 8 matches—including Indonesia's dramatic finals shootout victory—were claimed by the more offensively aggressive team. Set pieces like penalty strokes and corners naturally elevate this frequency, though their conversion rates depend on varied internal and external team factors. Therefore, high shot volume establishes itself as a primary determinant of match victory, contingent upon maintaining quality accuracy (shots on target) (Pietersz & Syafii, 2025).

Impact on Victory

The correlation between ball possession, shooting frequency, and overall victory is evidently not absolute (100%). While possession is essential to generating high-probability chances through accurate passing (Anugrah et al., 2022), findings align with previous research indicating that while possession positively impacts results, low-possession teams remain wholly capable of winning. Statistically, success rooted in possession peaked at 62.5%, whereas success correlating with shooting frequency reached a robust 87.5%. This conclusively asserts that a high volume of shot attempts exerts a much stronger influence on securing victory than merely possessing the ball, granted those attempts must be consistently directed on target.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions derived from this research include: (1) Superior ball possession effectively supports a team in pursuing victory, evidenced by 5 out of 8 matches (62.5%) being won by the team with dominant possession, though this does not negate the ability of teams with minimal possession to still achieve victory. (2) An elevated shooting frequency represents a highly significant winning factor, accounting for an 87.5% win rate, despite multifaceted external factors resulting in occasional anomalies. (3) Ultimately, shooting frequency dictates the outcome of a match much more powerfully than possession, provided those attempts are sharply accurate.

Recognizing existing limitations within this study, it is recommended that future researchers expand upon and integrate broader variables into subsequent studies. Furthermore, the evolution and development of specialized technologies and applications designed specifically to measure real-time possession and shooting frequency across diverse sports, notably indoor hockey, are highly encouraged.

ACKNOWLEDGEMENTS

The researcher wishes to express profound gratitude to all associated parties supporting this research: 1) Mr. Rian Triprayogo, M.Pd, and Mr. Dikdik Najmu Ramadan, M.Or, as supervising lecturers who guided the author to completion; 2) Mr. Sendy Mohamad Anugrah, M.Or, the pre-proposal seminar lecturer who inspired the research topic; 3) Parents, siblings, and friends, alongside the owner of Jawara Swimming, for their continuous encouragement, prayers, and support.

REFERENCES

- Anugrah, S. M., Amiq, F., & Hariyanto, A. (2022). Analisis Akurasi Operan Pemain Sepak Bola Tim Nasional Indonesia Pada Ajang SEA Games 2021: Babak Kualifikasi Grup. *Jurnal Sains Keolahragaan Dan Kesehatan*, 7(1), 1–12. <https://doi.org/10.5614/jskk.2022.7.1.1>
- Budiwanto, S. (2017). *Metodologi Penelitian dalam Keolahragaan*.
- Candra Susanto, P., Ulfah Arini, D., Yuntina, L., & Panatap Soehaditama, J. (2024). Konsep Penelitian Kuantitatif: Populasi, Sampel, dan Analisis Data (Sebuah Tinjauan Pustaka). <https://doi.org/10.38035/jim.v3i1>
- Hamzah, A. P. (2016). Efektifitas Kegiatan Outbound terhadap Kecerdasan Emosi Atlet Putra Hockey SMA Negeri 46 Jakarta.
- Hanifah, Sutedja, A., & Ahmaddien, I. (2020). *Pengantar Statistika*.
- Hasanah, N., & Rustriadi, T. (2021). Pembinaan Prestasi Cabang Olahraga Hockey di Kabupaten Kebumen (Issue 2). <https://journal.unnes.ac.id/sju/index.php/inapes>
- Maidiana. (2021). Penelitian Survey. *ALACRITY: Journal Of Education*, 1(2).
- Metikasari, S., & Roepadjadi, J. (2020). Analisis Kondisi Fisik Tim Hockey Indoor Putri Kabupaten Sidoarjo.
- Niandika, M. (2022). Bola Tolak Peluru dalam Memperkuat Ketepatan Flick pada Cabor Hockey Indoor Kab. Sidoarjo.
- Pietersz, S. A., & Syafii, I. (2025). Analisis Kemenangan Berdasarkan Kalah Persentase Ball Possesion Pada Fifa U-20 Women's World Cup Colombia 2024, 8(6).
- Ramadhan, M. N., & Faruk, M. (2021). Analisis Kecepatan Pelari dalam Melakukan Pertahanan pada penalty Corner Permainan Olahraga Hockey.
- Rustandi, E. (2019). Hubungan Tingkat Kecemasan dengan Hasil penalti Stroke pada Permainan Hoki (Studi Deskriptif pada UKM Hoki Universitas Majalengka). In *Research Physical Education and Sports p-issn* (Vol. 1, Issue 1).
- Sari, S., Fallo, I. S., Qosim, A., Fuzita, M., Rustanto, H., Yane, S., Duli Agus Lauh, W., Cahyadi, A., Rahmat, A., Permana, A., Sabransyah, M., & Wardhani, R. (2022). Pelatihan Pelatih Insoor

- dan Field Permainan Hockey Tingkat Daerah Provinsi Kalimantan Barat. Agustus, 6(2).
- Siyoto, S., & Sodik, M. A. (2015). Dasar Metodologi Penelitian.
- Utami, D. (2015). Peran Fisiologi Dalam Meningkatkan Prestasi Olahraga Indonesia Menuju Sea Games.