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The Effect of the 'Fast Game' in Handball on the Final Ranking of Teams in Major International Competitions

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The main purpose of that study was to identify which of the independent variables that measured fast play tactics (Fast Throw-Offs and Fast Breaks) could predict a team's ranking in a high-level tournament. Researchers collected statistical data on the teams that took part in the final tournament of the Men's EHF EURO 2022. The main analyses of the study were Hierarchical Regression Analyses utilising the Stepwise methodology. As a result, the final ranking of the teams is significantly affected by more than 38% by the process of playing fast and fast breaks in particular. On the contrary, the FTO, either in all its efforts or in its final outcome (successful FTOs), is not an indicator that predicts or influences the final ranking of the high-level teams taking part in a major event. In conclusion, both the overall efforts of fast breaks and the successful fast breaks efforts of the teams during the games of a major event, are important elements and factors that predict the performance of the teams.

Keywords: fast play, fast breaks, fast throw-offs, handball, fast game

INTRODUCTION

Handball is an Olympic sport and one of the most popular and fastest team ball games in the world (Ferrari et al., 2019; Saavedra, 2018; Karcher & Buchheit, 2014). The speed of the game is increasing over time, resulting in a faster and more spectacular performance. As a result, high demands are placed on the speed of the game, especially

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for high-level players (Wagner et al., 2020). Furthermore, the throwing speed of the ball exceeds 100 km/h, reaching up to 141 km/h in recent years (Fritz et al., 2020). The increase in speed and dynamics of the attack phase, especially of the fast attack actions, is one of the characteristics of modern handball (Bajgoric et al., 2017). The fastest and most spectacular situation of the game is the fast break (Seil et al., 1998). The fast break is the fastest way to score a goal on an opposing team (Belcic et al., 2021). Moreover, the fast break is the first attack attempt after gaining possession of the ball (Marczinka, 1993).

Fast throw-off after a conceded goal, on the other hand, is a collective tactical action that the teams choose as a means of achieving a goal. Fast execution of a throw-off after a goal can also be used as an indicator of the differentiation of the final result of the teams (Silva et al., 2021). Only teams in adequate physical condition can apply fast breaks efficiently, forcing teams to improve their physical abilities during training (Ökrös & Pàll, 2008).

In modern Handball, tactics during a game play an important role (Bojić et al., 2020). Some teams organise their game tactically in such a way as to follow a slow tempo, going to organised attacks (set game), while others, among other tactics, choose the fast game that includes fast breaks and fast throw-offs (FTO).

Changing the rules is common among team sports and has a significant effect on a team's performance, and thus on the coach's work. Some changes are advantageous for a certain team while others are not. Whatever the changes, the coach and/or the team's tasks have to be adjusted in order to diminish the negative impact of the new rules or even to take advantage of them (Marczinka & Gál, 2018).

The philosophy of both the IHF (International Handball Federation) and the EHF (European Handball Federation) is to create playing conditions with even greater speed, in order to make the sport even more attractive and exciting. For this reason, according to the latest announcements of the IHF, from July 1st, 2022, the International Handball Federation plans to test three rule amendments. The three rules to be tested are: a) four passes in passive play instead of six, b) a two-minute suspension for hitting the goalkeeper's head with the ball instead of a direct red card at the moment, and c) throw-off not on the line but inside the centre circle. The diameter of the centre circle has not yet been determined; three different sizes (between 3.5 and 4.5 meters) are being tested. The player who executes the throw-off has three seconds after the whistle to take the throw-off. During this time, the player is not allowed to bounce or jump, but has an unlimited number of steps within the circle. The opponents must stay outside the throw-off circle and are only allowed to intercept the ball when it has completely crossed the line of the circle – comparable to the rules for throwing off. After the first complete pass, the defenders are allowed to enter the centre circle (International Handball Federation, [IX Rules of the Game a) Indoor Handball], 2022). It becomes obvious that, with these changes, the specific game condition, i.e. the fast game, acquires greater speed and therefore the whole game acquires greater speed.

Nowadays, match analysis has become a subject of great interest in the performance of team sports such as handball (Ferrari et al., 2019). Results of investigations to date show that teams differ significantly in technical-tactical game indicators, especially concerning the criterion of the match result (Srhoj et al., 2001).

Srhoj et al. (2001) after their analysis, state that fast breaks and half-fast breaks significantly influence the determination of the match result. Moreover, knowing that attack is the moment that distinguishes the success of the team in a match, the analysis of the handball game shows that the fast counter-attacks and the position where the pivot performed the finalisation are predictive factors of success (Costa et al., 2017). On the contrary, Ferrari et al. (2019) state that, typically, team performance indicators are provided by comparing winners and losers, and that no difference was found in the game style (positioned and fast breaks). It is therefore unclear whether fast play affects the outcome of a match, mainly because the reports are contradictory.

In addition, in the overall statistical analysis of the EHF matches for each team in the 2022 European Championship there is no reference to the playing position per player and in the court during fast breaks and fast throw-offs, so this was something we tried to analyse for each team separately but also the sum of the teams, linking the content of the aforementioned analysis with the performance and results of the teams, i.e. the victories and defeats and their final ranking. Consequently, the present study, has a double purpose: the evaluation of the fast play of high-level teams a) to re-evaluate it at a later time, taking the new regulations into account, and b) to identify which of the independent variables that measured fast play tactics (Fast Throw-Offs and Fast Breaks) could predict a team's ranking in a high-level tournament (the 2022 European Championship).

METHOD

Data collection

In every EHF EURO both men and women the scientific committee of EHF collects and disseminates the overall descriptive statistical analysis of the tournaments. These descriptive data analyses are presented at the official EHF site of the tournament and also at the official EHF site. The official EHF site and also the official tournament site provides free access to these statistical data. Researchers collected statistical data on the teams that took part in the final tournament of the Men’s EHF EURO 2022, held on 13 - 30 January 2022 in Hungary and Slovakia. For our analysis researchers used the data of 24 national teams. Each team depending on its final ranking, played at least 3 up to 9 games. Specifically, Austria, Belarus, Bosnia & Hercegovina, Czech Republic, Hungary, Lithuania, North Macedonia, Portugal, Slovenia, Serbia, Slovakia and Ukraine played 3 games, Croatia, Germany, Monte Negro, Netherlands, Poland and Russia played 7 games, Iceland and Norway 8 games and Denmark, France, Spain and Sweden played 9 games until the end of the tournament. From each game the data of Left Fast Breaks, Central Fast Breaks, Right Fast Breaks, and Fast Throw-Offs were taken into account for each team. All these data recorded to SPSS and then.

Statistics

In order to identify relationships between the study's variables, the researchers initially performed a Pearson Correlation analysis after verifying that the variables in question conformed to the Gaussian standard through a one-sample Kolmogorov-Smirnov test (exact two-tailed). The main analyses of the study were Hierarchical Regression Analyses utilising the Stepwise methodology in order to identify which of the independent variables that measured fast play tactics (Fast Throw-Offs and Fast Breaks) could predict a team's Tournament Ranking. The significance level was set at 0.05 and the statistical processing of the study data was done using the SPSS 25 programme.

FINDINGS

To identify the effects of fast play on a team's tournament placing, the present study utilised a series of variables that identify this play style. More specifically, Left Fast Breaks, Central Fast Breaks, Right Fast Breaks, and Fast Throw-Offs were taken into account. For all the aforementioned variables, the researchers focused separately on total efforts (both successful and unsuccessful) and successful efforts in order to identify whether it was the total playstyle or its success that better predicted a team's final placement in the tournament. Since each team played a different number of matches in the tournament, all variables were transformed into averages per match played. The final variables included in the empirical investigation were: Total Left Fast Breaks per Match Played (TLFB) (M=.89, SD=.55), Successful Left Fast Breaks per Match Played (SLFB) (M=.75, SD=.51), Total Central Fast Breaks per Match Played (TCFB) (M=2.20, SD=1.33), Successful Central Fast Breaks per Match Played (SCFB) (M=1.70, SD=1.03), Total Right Fast Breaks per Match Played (TRFB) (M=.70, SD=.61), Successful Right Fast Breaks per Match Played (SRFB) (M=.54, SD=.47), Total Fast Throw-Offs per Match Played (TFTO) (M=.31, SD=.35) and Successful Fast Throw-Offs per Match Played (SFTO) (M=.24, SD=.34) (Table 1).

Table 1
Descriptive statistics

	Mean	Standard Deviation	Variance
Total Left Fast Break (TLFB) per match played	.89	.55	.30
Successful Left Fast Break (SLFB) per match played	.75	.51	.26
Total Central Fast Break (TCFB) per match played	2.20	1.33	1.76
Successful Central Fast Break (SCFB) per match played	1.70	1.03	1.07
Total Right Fast Break (TRFB) per match played	.70	.61	.37
Successful Right Fast Break (SRFB) per match played	.54	.47	.22
Total Fast Throw-Off per match played (TFTO)	.31	.35	.13
Successful Fast Throw-Off per match played (SFTO)	.24	.34	.12

As the first measure of relationships between the study's variables, Pearson correlations were calculated between a) Ranking in the Tournament and the total fast play effort variables TLFB, TCFB, TRFB and TFTO (Table 2), and b) Ranking in the Tournament and all the successful fast play effort variables SLFB, SCFB, SRFB and SFTO (Table 2).

As we see from Table 2, a negative Pearson correlation (r(24)=-.425, p=.039) was identified between Tournament Ranking and Total Central Fast Break (TCFB) per match played. Based on the coding of the variables, this correlation signifies that teams with higher TCFB per match played tend to achieve better Tournament Ranking than those with lower. A second statistically significant positive Pearson correlation (r(24)=.464, p=.022) was identified between TCFB and TFTO. Based on the coding of the variables, this correlation signifies that teams with a higher TCFB average tend to also have a higher TFTO average.

Table 2
Pearson correlations TLFB, TCFB, TRFB, TFTO & tournament ranking

Pearson Correlation		Ranking of teams in the tournament	Total Left Fast Break (TLFB) per match played	Total Central Fast Break (TCFB) per match played	Total Right Fast Break (TRFB) per match played
Total Left Fast Break	r	-.178			
(TLFB) per match played	p	.406			
Total Central Fast Break	r	-.425*	.078		
(TCFB) per match played	p	.039	.718		
Total Right Fast Break	r	-.338	.146	-.235	
(TRFB) per match played	p	.106	.495	.268	
Total Fast Throw-Off per	r	-.105	.036	.464*	-.039
match played (TFTO)	p	.626	.867	.022	.856

Before proceeding to the Pearson correlation parametric analysis, a one-sample Kolmogorov-Smirnov test (exact 2-tailed) was performed to assess the normality of the variables. The results indicated that all variables conformed to the Gaussian standard (Table 3).

Table 3
One-sample kolmogorov-smirnov test

	Test Statistic	Exact Sig. (2-tailed)
Total Left Fast Break (TLFB) per match played	0.212	0.199
Successful Left Fast Break (SLFB) per match played	0.227	0.144
Total Central Fast Break (TCFB) per match played	0.119	0.847
Successful Central Fast Break (SCFB) per match played	0.119	0.845
Total Right Fast Break (TRFB) per match played	0.146	0.633
Successful Right Fast Break (SRFB) per match played	0.179	0.377
Total Fast Throw-Off per match played (TFTO)	0.224	0.154
Successful Fast Throw-Off per match played (SFTO)	0.260	0.064

As presented in Table 4, a negative Pearson correlation (r(24)=-.421, p=.041) was identified between Tournament Ranking and Successful Central Fast Break (SCFB) per match played. Based on the coding of the variables, this correlation signifies that teams with higher SCFB per match played tend to achieve better Tournament Ranking than those with lower.

Table 4
Pearson correlations SLFB, SCFB, SRFB, SFTO & tournament ranking

Pearson Correlation		Ranking of teams in the tournament	Successful Left Fast Break (SLFB) per match played	Successful Central Fast Break (SCFB) per match played	Successful Right Fast Break (SRFB) per match played
Successful Left Fast Break (SLFB) per match played	r	-.035			
	p	.872			
Successful Central Fast Break (SCFB) per match played	r	-.421*	.003		
	p	.041	.987		
Successful Right Fast Break (SRFB) per match played	r	-.359	.180	-.213	
	p	.085	.401	.319	
Successful Fast Throw-Off per match played (SFTO)	r	-.081	-.094	.399	-.031
	p	.706	.664	.053	.884

Hierarchical Linear Regression

After the initial Pearson Correlation tests, two hierarchical regression analyses were performed in order to identify whether Fast Breaks from left, centre, and right per match, as well as Fast Throw-Offs per match, can predict the placement of a team in the tournament. The hierarchical regressions utilised the stepwise method, in which the model starts with zero predictors, the strongest predictor variable is inserted in the model, and then new predictors are inserted one by one until none of the excluded predictors contributes significantly to the model. The criterion for the probability of F entering the model was set at 0.05, while the second hierarchical regression focused on successful efforts only.

DV: Tournament Ranking IVs: TLFB, TCFB, TRFB, TFTO

The first hierarchical regression analysis utilised values for all variables per match played without differentiating between successful and unsuccessful efforts. Therefore DV was Tournament Placement and potential IVs were Total Left Fast Breaks (**TLFB)** per Match Played, Total Central Fast Breaks (**TCFB**) per Match Played, Total Right Fast Breaks (**TRFB**) per Match Played, and Total Fast Throw-Offs (**TFTO**) per Match Played.

The first predictor that entered the model (model A1) was Total Central Fast Breaks per Match Played. The Regression was statistically significant ($F_{(1, 22)} = 4.840$, p=0.039) and R^2 was calculated at 0.180, therefore the predictor explained 18% of the IV variance. The second strongest and final predictor that entered the model was Total Right Fast Breaks per Match Played. The second model’s regression was statistically significant ($F_{(2, 21)} = 6.526$, p=0.006) and R^2 was calculated at 0.383, therefore the predictors explained 38.3% of the IV variance. None of the remaining predictors could contribute significantly to the model, therefore model A2 is the final product of the first hierarchical regression analysis. Betas, standardised Betas, t, and significance for predictors in models 1 and 2 are presented in Table 5.

Table 5
Stepwise hierarchical regression analysis for tournament ranking with potential IVs: TLFB, TCFB, TRFB, TFTO

Tournament Ranking		Unstandardised Coefficients	Standardised Coefficients	t	p
		B	Bstd		
A1	(Constant)	17.486		6.646	<0.001
	Total Central Fast Break (TCFB) per match played	-2.263	-.425	-2.200	0.039
A2	(Constant)	22.571		7.443	<.001
	Total Central Fast Break (TCFB) per match played	-2.845	-.534	-3.027	.006
	Total Right Fast Break (TRFB) per match played	-5.402	-.464	-2.629	.016

Regarding the final model, the Durbin-Watson statistic (d= 1.482) was within the 1<d<3 range that according to Field (2009) may be considered normal and negative for autocorrelation. Collinearity statistics (VIF=1.059, Tolerance=0.945) were within the criteria of Tolerance> 0.1 and VIF <10 (Pallant, 2007; Salkind, 2007), therefore there are no multicollinearity problems in the model. The standardised residuals histogram revealed that the distribution was approximately normal. Analysis of the Normal P-P plot of regression standardised residuals indicated that there was a strong linear relationship between the DV and the two IVs, while the scatterplot of standardised residuals and regression standardised predicted values indicated there was no pattern in the dispersion of residuals. Therefore the validity of the assumptions of the homogeneity of variance, the linearity of the data, and the normal distribution of the residuals was verified (Pallant, 2007).

The equation resulting from the model A2 regression analysis is the following (Figures 1, 2, 3 from Table 4): Tournament Ranking =22.571 – 2.845* TCFB – 5.402* TRFB. Therefore, the first Hierarchical Linear Regression analysis demonstrates that Total Central Fast Break (TCFB) per match played and Total Right Fast Break (TRFB) per match played are statistically significant predictors of Tournament Ranking, explaining 38.3% of its variance.

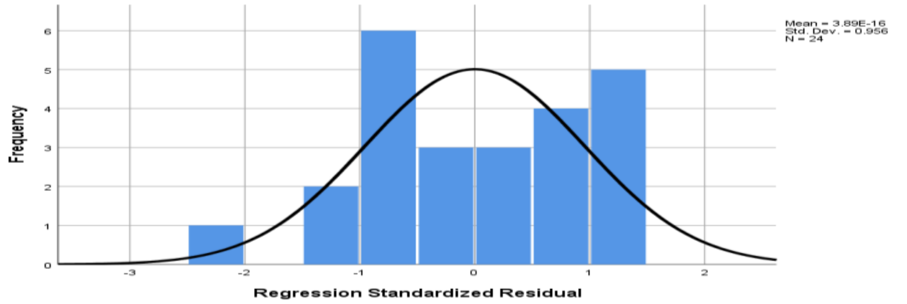

Figure 1
Regression figures for model A2: Histogram – Dependent variable: Ranking of teams in the tournament

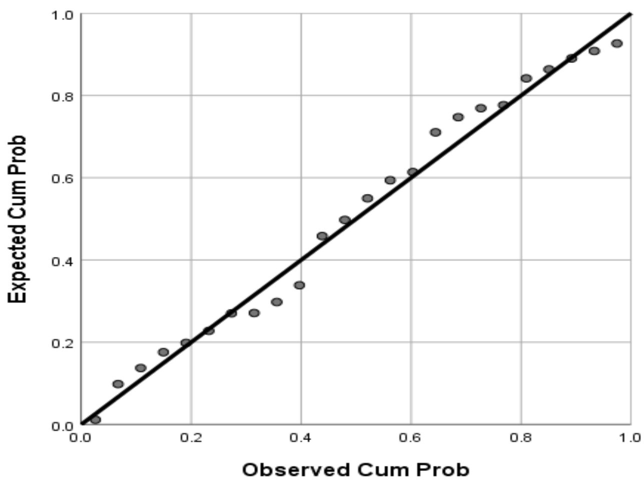

Figure 2
Regression figures for model A2: Normal P-P plot of regression standardised residual – Dependent variable: Ranking of teams in the tournament

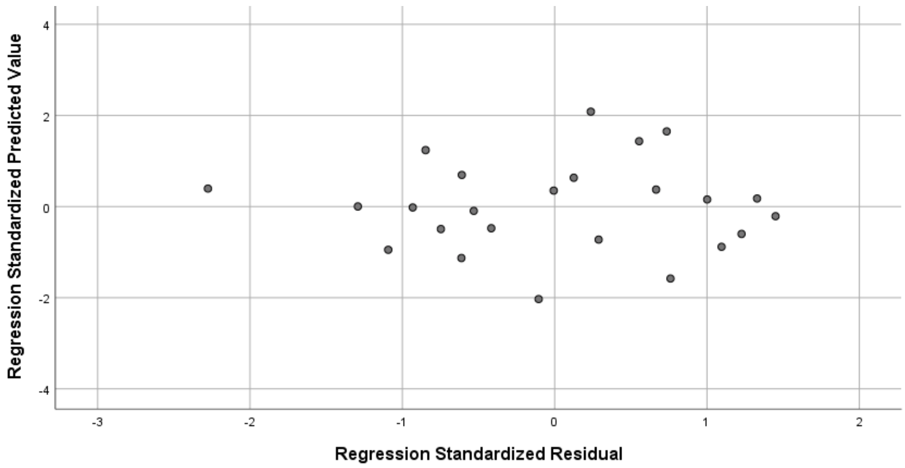

Figure 3
Regression figures for model A2: Scatterplot – Dependent variable: Ranking of teams in the tournament

DV: Tournament Ranking IVs: SLFB, SCFB, SRFB, SFTO

The second hierarchical regression analysis utilised values for all variables per match played, taking only successful efforts into account. DV was Tournament Placement and potential IVS was Successful Left Fast Breaks (SLFB) per Match Played, Successful

Central Fast Breaks (SCFB) per Match Played, Successful Right Fast Breaks (SRFB) per Match Played, and Successful Fast Throw-Offs (SFTO) per Match Played.

The first predictor that entered the model (model B1) was Successful Central Fast Breaks per Match Played. The Regression was statistically significant ($F_{(1, 22)} = 4.737$, $p=0.041$) and R^2 was calculated at 0.177, therefore the predictor explained 17.7% of the IV variance. The second strongest and final predictor that entered the model was Successful Right Fast Breaks per Match Played. The second model's regression was statistically significant ($F_{(2, 21)} = 6.639$, $p=0.006$) and R^2 was calculated at 0.387, therefore the predictors explained 38.7% of the IV variance. None of the remaining predictors could contribute significantly to the model, therefore model B2 is the final product of the second hierarchical regression analysis. Betas, standardised Betas, t, and significance for predictors in models 1 and 2 are presented in Table 6.

Table 6
Stepwise hierarchical regression analysis for tournament ranking with potential IVs: SLFB, SCFB, SRFB, SFTO

Model		Unstandardised Coefficients	Standardised Coefficients	t	Sig.
		B	Beta		
B1	(Constant)	17.408		6.638	<.001
	Successful Central Fast Break (SCFB) per match played	-2.884	-0.421	-2.176	0.041
B2	(Constant)	22.394		7.542	<.001
	Successful Central Fast Break (SCFB) per match played	-3.567	-0.521	-2.978	0.007
	Successful Right Fast Break (SRFB) per match played	-7.078	-0.469	-2.684	0.014

Regarding the final model, the Durbin-Watson statistic ($d= 1.764$) was within the $1<d<3$ range that according to Field (2009) could be considered normal and negative for autocorrelation. Collinearity statistics (VIF=1.047, Tolerance=0.955) were within the criteria of Tolerance> 0.1 and VIF <10 (Pallant, 2007; Salkind, 2007), therefore there are no multicollinearity problems in the model. Examination of the histogram of standardised residuals revealed that the distribution was approximately normal. Analysis of the Normal P-P plot of regression standardised residuals indicated that there was a strong linear relationship between the DV and the two IVs, while the scatterplot of standardised residuals and regression standardised predicted values indicated there was no pattern in the dispersion of residuals. Therefore the validity of the assumptions of the homogeneity of variance, the linearity of the data, and the normal distribution of the residuals was verified (Pallant, 2007).

The equation resulting from the model B2 regression analysis is the following (Figures 4, 5, 6 from Table 6): Tournament Ranking =22.394 – 3.567* TCFB – 7.078* TRFB. Therefore the first Hierarchical Linear Regression analysis demonstrates that Successful Central Fast Break (SCFB) per match played and Successful Right Fast Break (SRFB) per match played are statistically significant predictors of Tournament Ranking, explaining 38.7% of its variance.

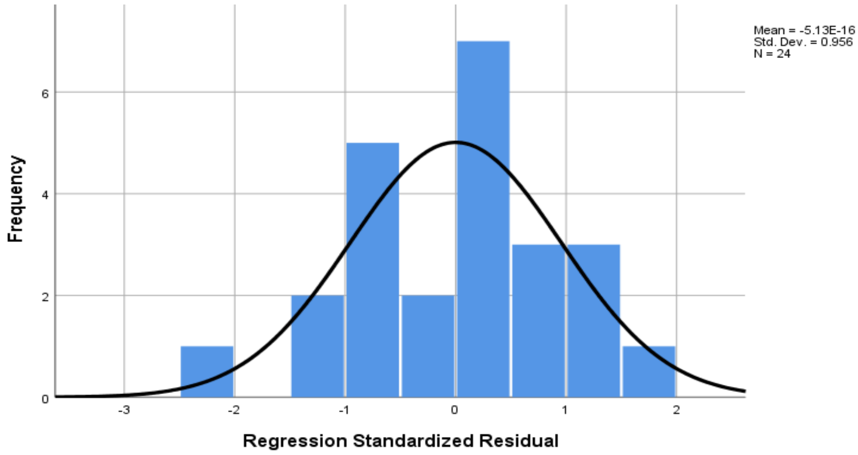

Figure 4
Regression figures for model B2: Histogram – Dependent variable: Ranking of teams in the tournament

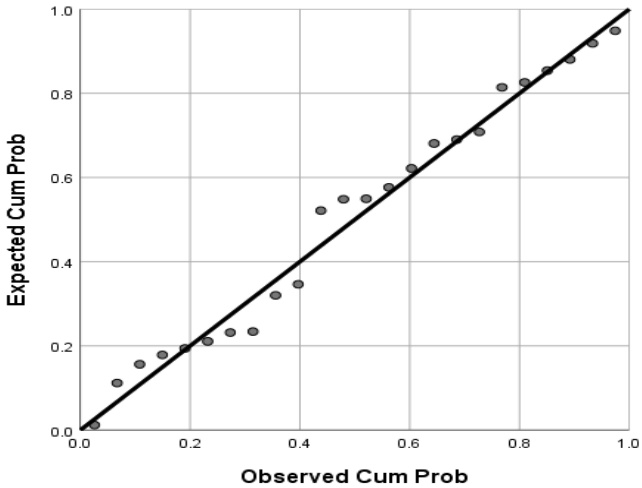

Figure 5
Regression figures for model B2: Normal P-P plot of regression standardised Residual – Dependent variable: Ranking of teams in the tournament

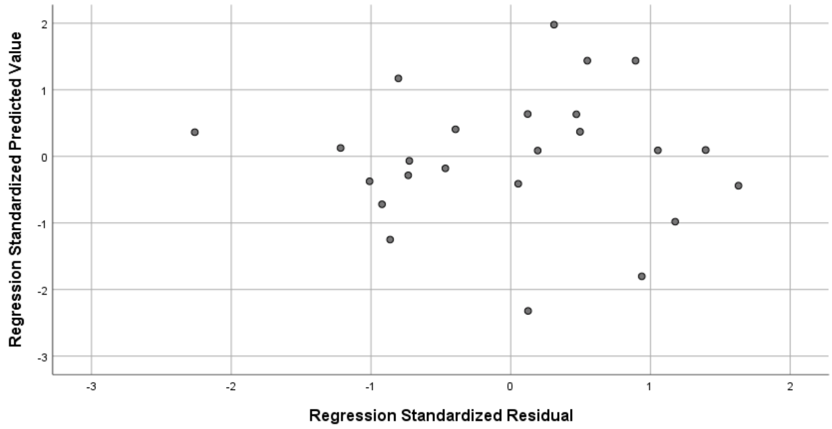

Figure 6
Regression figures for model B2: Scatterplot – Dependent variable: Ranking of teams in the tournament

DISCUSSION

In modern sports science, analysing the overall performance of the teams plays an important role for coaches in configuring the player and team models (Bilge, 2012; Silva et al., 2021). The procedural information of actions contributes to the interpretation of game situations and provides a framework for game anticipation (Hassan et al., 2017). In this context, the information that coaches obtain from the observation and analysis of the games does not represent the reality of the game and it is obvious that the numbers need to be supplemented by the knowledge of the coaches or researchers (Sampaio, 2003). In order to overcome the difficulties in the analysis of the game processes, it is important to develop a focused orientation for the study of sequences of the game (Amatria et al., 2019). Current research in this area and the evolution of game analysis will allow training to become much more valid and objective (Taborsky, 2007). Furthermore, the analysis of a major competition, such as the EHF Euro, is mandatory for determining the evolutionary trends of the different sports (Silva et al., 2021).

Accordingly, the analysis of the results of this research showed that the reasoning of the present research is justified. That is, the trend of increasing the speed of the game, which is also attested by the IHF's desire to promote even faster play through the amendments to the regulations (International Handball Federation, [IX Rules of the Game a) Indoor Handball], 2022), is a significant factor in shaping the final result of a match and consequently the final ranking in a major event (Srhoj et al., 2001; Ökrös & Pàll, 2008).

More specifically, in terms of the total number of fast breaks and FTOs, the results showed that only fast breaks are a predictor of the final ranking of the teams. The total number of fast breaks from the centre and the right zones of attack predicts the ranking of the teams by 38.3%. Therefore, the fast game, as it manifests itself through fast breaks, is a very important factor not only in predicting but also in shaping the result and consequently the final ranking. According to Rogulj et al. (2011), the total number of fast breaks performed by a team is the most reliable indicator of qualitative differentiation among teams. Moreover, De Paula et al. (2020), report that fast breaks contribute to the prediction of victory only in unbalanced matches (more than 8 goals difference). This result was found by comparing women’s World Championship matches from 2007 – 2017, where there were a certain number of weak teams. Furthermore, Celes et al. (2019), analyzing the matches of the U19 World Handball Championship in 2019, found that successful fast breaks have the largest contribution in predicting the final result of a handball match. Successful fast breaks along with missed penalties, successful 9-meter shots, successful penetrations, successful wing shots and successful 6-meter shots, have a prediction rate ranging from 57.3% to 76.4%.

On the contrary, the total number of FTOs is not a predictor of the final ranking of the teams and therefore is not a predictor or a result shaper. This is probably due to the national teams’ limited preparation time before major events. This results in a lack of regular preparation in elements such as the FTO, while fast breaks are one of the basic individual technical and tactical elements of high-level players (Yiannakos et al., 2005). Silva et al. (2021), also state that FTO carries risks because it requires high fitness, creates the possibility of increased technical errors and also reduces control of the offensive game (compared to " organised set attack"). The same authors found that losing teams use fast throws more often than winning teams. Winning teams are more judicious in the way they use fast throws, often choosing to use the "set -system attack". In disadvantageous game situations the losing teams choose to use FTO more often, but when the game is tied the winning teams are the ones who play FTO after a goal.

In terms of the number of successful fast breaks and FTOs, the results showed that only successful fast breaks are a predictor of the final ranking of the teams. Thus, it appeared that successful fast breaks from the centre and the right zones of attack predict the final ranking of the teams by 38.7%. Therefore, the fast game and especially the successful efforts (those that result in goals), as they are manifested through fast breaks, are a very important factor not only in predicting but also in shaping the final result and, by extension, the final ranking. More specifically, we would say that it is very logical for successful fast breaks to be made from the centre and right zones of attack, since, as reported by Costa et al. (2017), pivot and wings are the players who generally excel due to fast breaks. Therefore, given that the pivots attempt fast breaks mostly from the central zone of attack, it makes sense for the fast breaks to appear from there. Additionally, at high-level handball games such as the Olympic Games, World and European Championships, handball players who play in the position of the right-wing are left-handed and this fact gives an advantage both in the throwing angle and in other movement characteristics of these players. In addition, the beginning of the fast break is based on the players’ immediate and fast transition from the defensive state of play to the offensive state of play. The reaction time especially in the lateral attacking players is a critical factor that determines the start of the fast break either immediately (first wave) or indirectly (second wave). One reason for starting the fast break from the right side is that left-handed players have a shorter reaction time than right-handed ones and consequently, a better and faster reaction to the moving object (ball) (Przednowek et al., 2019). This also explains partly, the results of our study, since in the present research it was found that fast breaks are executed mainly from the center and the right side of the court.

Moreover, as reported by Gümüş and Gençoğlu (2020), it is almost certain that a fast break will be successful when it occurs in a game situation in which one team plays without a goalkeeper (empty goal). This is the current trend in modern Handball, either when a team is attacking with one player fewer due to a suspension or when they are playing with one additional player in attack (7 vs 6 field players).

On the contrary, the number of successful FTOs is not a predictor of the final ranking of the teams and therefore is not a result predictor or a shaper of the final result and, by extension, the final ranking. This is probably due to the limited number of either total or successful efforts shown by the teams as a whole. This fact is very common and appears in major events (Miranda, 2016; Silva, 2008, 2011). Another possible reason is that the FTO is an element of selective group tactical choice and consequently teams use it accordingly, with different results each time (Silva et al., 2021).

CONCLUSION

In conclusion, we would say that both the overall efforts of fast breaks and the successful fast breaks efforts of the teams during the games of a major event are important elements and factors that predict the performance of the teams. As a result, the final ranking of the teams is significantly affected by more than 38% by the process of playing fast and fast breaks in particular. On the contrary, the FTO, either in all its efforts or in its final outcome (successful FTOs), is not an indicator that predicts or influences the final ranking of the high-level teams taking part in a major event. Finally, we could say that further research and analysis of the data are needed to fully consolidate such a predictive model for establishing the ranking and classification of high-level handball teams in major tournaments.

DECLARATION OF INTEREST STATEMENT

The authors report there are no competing interests to declare.

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