

## TECHNICAL AND TACTICAL ANALYSIS OF THE ROMANIAN WOMEN'S NATIONAL TEAM IN THE QUALIFICATION CAMPAIGN FOR THE 2023 FIFA WOMEN'S WORLD CUP

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**Abstract:** Women's football in Romania has many unaddressed issues that, with due attention, can contribute to increasing the efficiency and quality of this sport, a necessity felt especially on the occasion of international competitions. The purpose of the present research is to examine the technical-tactical level (certain technical procedures and technical-tactical actions) of the women's national football team by comparing it mainly with the Italian team (ranked first) and the Republic of Moldova team (ranked last) in the qualification campaign for the 2023 FIFA Women's World Cup. The investigated technical and tactical parameters were provided by the Wyscout platform. Using the nonparametric Kruskal-Wallis test, we aimed to identify the existence of significant differences between the results obtained by the six football teams in Group G (Romania, Switzerland, Italy, Republic of Moldova, Croatia and Lithuania) in the matches played in both the first half and the second half of the championship, with a view to the following technical indicators: number of fouls committed, fouls received, possession, successful passes, duels won, aerial duels won and sliding tackles. To identify possible significant differences between the six groups (women's football teams) analysed two by two for the mentioned indicators, the Dwass-Steel-Critchlow-Fligner (DSCF) pairwise comparison test was used. The results of the present study can be used by female football players and football coaches to raise awareness on the dynamics of the game and the technical-tactical elements used by successful women's football teams.

**Keywords:** *women's football, technical and tactical analysis, 2023 FIFA Women's World Cup.*

### Introduction

The demands are increasing in elite women's football, especially on the occasion of international competitions (Casal et al., 2021; Villaseca-Vicuña et al., 2023).

Elite women's football involves explosive actions such as sprints, duels, kicks, changing pace, all of which determine the outcome of a match (Manson et al., 2014). Although teams that manage to keep possession for a longer time can create more goal-scoring opportunities, research shows that longer possession time does not guarantee a higher chance of success in turning shots into scored goals (Hughes & Franks, 2005).

Póvoas et al. (2022) analysed the physical and technical performance of female players during an international football tournament and observed that athletes from low-rank national teams (according to FIFA standards) displayed higher values in technical

performance actions than high-rank team players, and this difference was explained by the longer match time played by each athlete. Analysing football matches played at the 2015 Women's World Cup, Scanlan et al. (2020) highlighted that the area used to regain possession of the ball had an influence on creating goal-scoring opportunities. The same study revealed that making an interception and recovering a misplaced pass from the opposing team were the most effective strategies used in the above-mentioned competition to both create goal-scoring opportunities and score goals.

Alcock (2010) shows that the improvement of female players' ability to score from more than 7 metres away from the penalty circle could considerably increase the chances of scoring from a free kick. Regardless of the competitive level, receiving red or yellow cards may have a dramatic effect on the

outcome of a football match, but the consequences of a sending off can be mitigated through training sessions designed to improve a team's performance even when playing in numerical inferiority (Badiella et al., 2022). Using an artificial intelligence model, Pappalardo et al. (2021) have shown that ball recovery time is shorter in female football compared to male football and that the women's game is characterised by fewer fouls than the men's game, but the number of duels and free kicks is higher for female players. Examining gender differences in match performance characteristics of football players, Bradley et al. (2014) observed that women lost the ball more often and displayed lower pass completion rates than men. Also, Perroni et al. (2018) show that gender differences in anthropometric parameters and technical performance of young football players have an impact on shooting distance, dribbling speed and passing length.

When a team is in possession of the ball for a longer time during a game, it is assumed that the adopted play style is offensive, from a tactical point of view (Bauer & Anzer, 2021). Hewitt et al. (2014) have analysed how the number of players and their positions on the pitch can affect the available space for sprinting and creating goal-scoring opportunities in women's football. Thus, if a team dominates possession and forces the opposition to defend in a certain half of the pitch, the available running space will be smaller; instead, if the game is relatively balanced, the opportunities to move across different zones of the pitch will be greater, which would allow more space for players to run and create goal-scoring opportunities.

After making a comparative analysis of some indicators (such as shots on goal, shots into the goal area, successful passes, successful dribbles, interceptions) measured during international male and female competitions, Palade et al. (2019) observe that the development directions in women's football follow the path of men's football in technical and tactical terms. However, in international football competitions, women's teams perform a lower number of duels than male

players but show higher values for fouls (Garnica-Caparrós & Memmert, 2021).

Fernández-Cortés et al. (2022) point out that home teams win over 50% of the points in different football championships worldwide due to the home advantage, while Casal et al. (2014) show in their study that almost 36 indirect free kicks are needed to score a goal. Not least, Mara et al. (2012) argue that the percentage of successful shots on goal is higher when resulting from a corner kick than a free kick; at the same time, a greater number of corner kicks are performed by top-ranked teams.

Sarmento et al. (2018) show that counter-attack actions are the most effective tactical means when playing against an imbalanced defence.

The effects of implementing VAR (video assistant referee) in female football at the 2019 FIFA Women's World Cup were analysed (Zhang et al., 2022), being compared with the 2015 FIFA Women's World Cup, where the VAR system was not implemented. The authors concluded that the number of fouls, penalties, goals, corner kicks and red/yellow cards did not change significantly. Also, there would be no direct connection between the physical and tactical performance of players during a women's football match (Errekagorri et al., 2022; González-Fernández et al., 2022).

The percentage of successful duels and aerial duels won represent technical indicators that are associated with winning matches in women's football and can be implemented in the specific match strategy for female players, both variables being considered typical of an aggressive style of offensive and defensive play (De Jong et al., 2020). Gabbett and Mulvey (2008) claim that small-sided training games for elite female football players simulate their passing and dribbling performance displayed in competitions; however, the training stimulus is insufficient to trigger the high-intensity sprint demands encountered in international competitions.

The *purpose* of the present research was to analyse the technical and tactical performance of the national team in the qualification campaign for the 2023 FIFA Women's World

Cup by comparing the results of Romania in all matches played (during both halves of the season) with those of the other teams in the group (with an emphasis on comparing Romania's results with those of Italy, the team ranked first, and the Republic of Moldova, the team ranked last in the group). The results obtained by the six football teams in Group G (Romania, Switzerland, Italy, Republic of Moldova, Croatia and Lithuania) were compared in terms of: number of fouls committed, fouls received, possession, successful passes, duels won, aerial duels won and sliding tackles. We also aimed to identify possible significant relationships between the specified technical-tactical indicators for both the Romanian team and the Italian team (ranked first in the group).

### Research questions

1. What are the differences in the technical-tactical level (certain technical procedures and technical-tactical actions) between the national team, the Italian team (ranked first) and the Republic of Moldova team (ranked last) in the qualification campaign for the 2023 Women's World Cup?
2. What significant associations can be found between the technical-tactical indicators recorded for the Romanian team and the Italian team in the matches played during the

qualification campaign for the 2023 Women's World Cup?

### Materials and method

The framework for analysis was the 2023 FIFA Women's World Football Cup, where the Romanian women's national team was assigned to Group G along with Italy, Switzerland, Croatia, Lithuania and the Republic of Moldova, and the actual analysis comparatively follows the group stage performance of the teams from the six countries during the 2023 World Cup qualification campaign.

The technical and tactical parameters investigated in the present research were provided by the Wyscout platform.

The main elements of descriptive statistics (arithmetic mean, median and standard deviation) were calculated using MS Office Excel 2020 software. The inferential statistics procedures used are the nonparametric Kruskal-Wallis test for more than two independent samples, which aims to identify significant differences between them (and also the effect size indicator - epsilon squared  $\epsilon^2$ ), the Dwass-Steel-Critchlow-Fligner test (which compares the investigated groups two by two) and the Spearman correlation coefficient, all of these procedures being calculated with the Jamovi statistical program (The Jamovi project, 2021).

### Results

We present the values of the main statistical indicators: arithmetic mean, median and standard deviation for the results obtained by the six women's football teams.

Table 1. Descriptive statistics – Investigated indicators

|          | Country     | Fouls committed | Fouls received | Possession (percentage) | Successful passes | Duels won | Aerial duels won | Sliding tackles |
|----------|-------------|-----------------|----------------|-------------------------|-------------------|-----------|------------------|-----------------|
| Mean (m) | Romania     | 9.50            | 9.30           | 46.7                    | 72                | 51.2      | 47.6             | 4.30            |
|          | Moldova     | 15.5            | 8.20           | 35.9                    | 63.2              | 43.4      | 28.3             | 6.10            |
|          | Italy       | 8.78            | 11.6           | 65.4                    | 82.8              | 52        | 53.7             | 1               |
|          | Croatia     | 12.1            | 12.8           | 53.0                    | 77.2              | 48.1      | 49.8             | 5.78            |
|          | Lithuania   | 11.3            | 10.1           | 35.2                    | 64.8              | 49.4      | 52.6             | 3.50            |
|          | Switzerland | 10              | 10.4           | 65.6                    | 83.4              | 51.2      | 50.9             | 1.30            |
| Median   | Romania     | 8.50            | 9              | 43.5                    | 69                | 50.5      | 44.5             | 3               |
|          | Moldova     | 16              | 7.50           | 34                      | 66.5              | 44        | 26               | 4.50            |
|          | Italy       | 7               | 11             | 69                      | 84                | 52        | 50               | 0               |
|          | Croatia     | 12              | 13             | 59                      | 75                | 47        | 49               | 4               |
|          | Lithuania   | 10.5            | 9              | 31.5                    | 64.5              | 51.0      | 46.0             | 3.50            |
|          | Switzerland | 10              | 9.50           | 70                      | 85.0              | 50.5      | 48.0             | 1.50            |

|                    |             |      |      |      |      |      |      |      |
|--------------------|-------------|------|------|------|------|------|------|------|
| Standard deviation | Romania     | 2.80 | 3.59 | 16.6 | 8.38 | 9.84 | 16.1 | 3.86 |
|                    | Moldova     | 3.27 | 3.71 | 7.72 | 6.07 | 3.10 | 9.04 | 4.53 |
|                    | Italy       | 4.76 | 5.13 | 8.66 | 3.19 | 4.85 | 7.28 | 1.22 |
|                    | Croatia     | 3.30 | 4.06 | 15.3 | 6.04 | 3.95 | 18.5 | 4.32 |
|                    | Lithuania   | 5.60 | 4.75 | 9.69 | 6.09 | 5.80 | 18.8 | 2.32 |
|                    | Switzerland | 2.31 | 3.95 | 9.92 | 4.90 | 3.97 | 16.3 | 1.34 |

Using the nonparametric Kruskal-Wallis test for more than two independent samples, we investigated the existence of statistically significant differences between the results obtained by the six women's football teams in the matches played in both the first half and the second half of the championship (N = 10), with a view to the studied technical indicators.

Table 2. Results of the six teams for the fouls committed and the fouls received

| Kruskal-Wallis test | Comparison between the six football teams |    |      |         |
|---------------------|-------------------------------------------|----|------|---------|
|                     | $\chi^2$                                  | df | p    | $\xi^2$ |
| Fouls committed     | 14.85                                     | 5  | 0.01 | 0.26    |
| Fouls received      | 7.31                                      | 5  | 0.19 | -       |

Statistical analysis of the data comparing the results of the six teams for the number of fouls committed and the number of fouls received (Table 2) reveals the following aspects:

- There are statistically significant differences ( $p = 0.01$ ) between the results of the six women's football teams as regards the number of fouls committed; however, in terms of fouls received, no significant differences are noted ( $p > 0.05$ ).

- The effect size ( $\xi^2$ ) is 0.26 for the fouls committed, which indicates that the effect of the group variable (football team) on the results is strong (see Predoiu, 2020).

The results of the six teams were pairwise compared regarding the number of fouls committed and received. Table 3 shows only the significant differences found; the emphasis (in the present paper) is on the results of the Romanian team by comparison with the first and last teams in the group (Italy and the Republic of Moldova, respectively).

Table 3. Pairwise comparison – Number of fouls committed and received (DSCF test)

| Dwass-Steel-Critchlow-Fligner test |             | W      | p     |
|------------------------------------|-------------|--------|-------|
| Fouls committed                    |             |        |       |
| Romania                            | Moldova     | 4.519  | 0.018 |
| Moldova                            | Switzerland | -4.536 | 0.017 |

Note: W (Wilcoxon test value); p (significance threshold).

Regarding the number of fouls committed by the Romanian team, the statistical analysis highlights that:

- There are statistically significant differences ( $p = 0.018$ ) between the Romanian team (median = 8.50) and the Republic of Moldova team (median = 16).

- No significant differences are identified between the national team and the Italian team (ranked first in the group) in relation to the mentioned indicator ( $p > 0.05$ ).

- In terms of fouls received, there are no significant differences between the Romanian team and the Republic of Moldova team (ranked last in the group) and the Italian team, respectively. However, as shown in Figure 1, the Italian team received a higher number of fouls ( $m = 11.6$ ) compared to the national team ( $m = 9.3$ ) and the Republic of Moldova team ( $m = 8.2$ ).

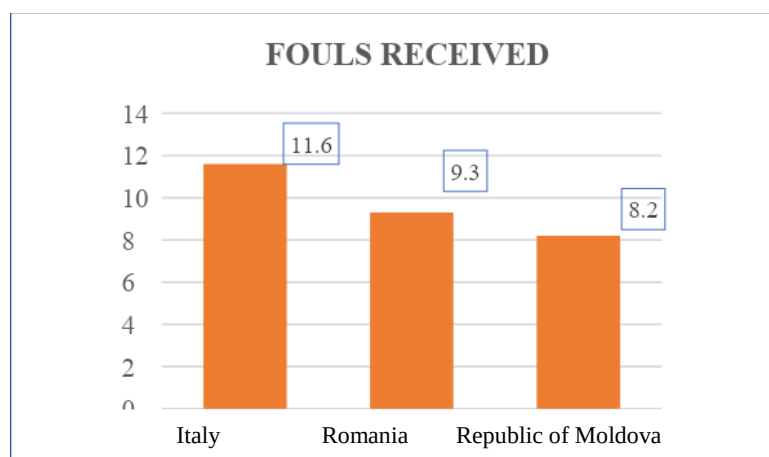


Figure 1. Comparison between the three teams regarding the number of fouls received

Table 4. Results of the six teams for possession and successful passes

| Kruskal-Wallis test | Comparison between the six football teams |    |       |         |
|---------------------|-------------------------------------------|----|-------|---------|
|                     | $\chi^2$                                  | df | p     | $\xi^2$ |
| Possession          | 31.2                                      | 5  | <0.01 | 0.54    |
| Successful passes   | 38                                        | 5  | <0.01 | 0.66    |

Table 4 highlights that:

- There are statistically significant differences ( $p < 0.01$ ) between the results of the six women's football teams in terms of ball possession but also successful passes ( $p < 0.01$ ).
- The effect size is 0.54 for ball possession and 0.66 for successful passes, which indicates a very strong effect of the group variable on the results.

Table 5. Pairwise comparison – Possession and number of successful passes (DSCF test)

| Dwass-Steel-Critchlow-Fligner test |             | W      | p                  |
|------------------------------------|-------------|--------|--------------------|
| Ball possession                    |             |        |                    |
| Romania                            | Switzerland | 4.020  | 0.051 <sup>M</sup> |
| Moldova                            | Italy       | 5.201  | 0.003              |
| Moldova                            | Switzerland | 5.137  | 0.004              |
| Italy                              | Lithuania   | -4.972 | 0.006              |
| Lithuania                          | Switzerland | 4.925  | 0.007              |
| Successful passes                  |             |        |                    |
| Romania                            | Switzerland | 4.180  | 0.037              |
| Moldova                            | Italy       | 5.212  | 0.003              |
| Moldova                            | Croatia     | 5.092  | 0.004              |
| Moldova                            | Switzerland | 5.357  | 0.002              |
| Italy                              | Lithuania   | -5.203 | 0.003              |
| Croatia                            | Lithuania   | -4.511 | 0.018              |
| Lithuania                          | Switzerland | 5.298  | 0.002              |

Note: W (Wilcoxon test value); p (significance threshold); M (marginally significant).

Regarding possession and the number of successful passes, the statistical analysis shows that no statistically significant differences have been recorded ( $p > 0.05$ ) between the Romanian team and the first team (Italy) as well as the last team in the group (Moldova). However, Figure 2 reveals that

Italy has recorded a higher score in terms of ball possession (mean = 65.4) compared to the national team (mean = 46.7) and the Republic of Moldova team (mean = 35.9).

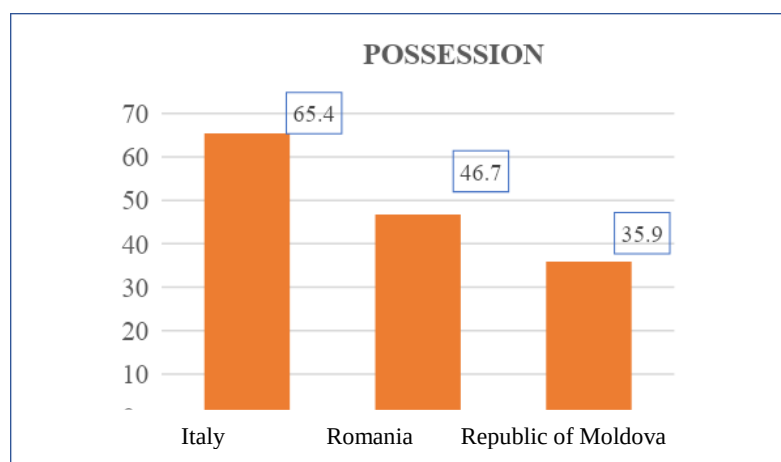


Figure 2. Comparison between the three teams in terms of ball possession

The representative team of Italy recorded on average a higher number of successful passes (m = 82.8) compared to the national team (m = 72) and the Republic of Moldova team (m = 63.2) (Figure 3).

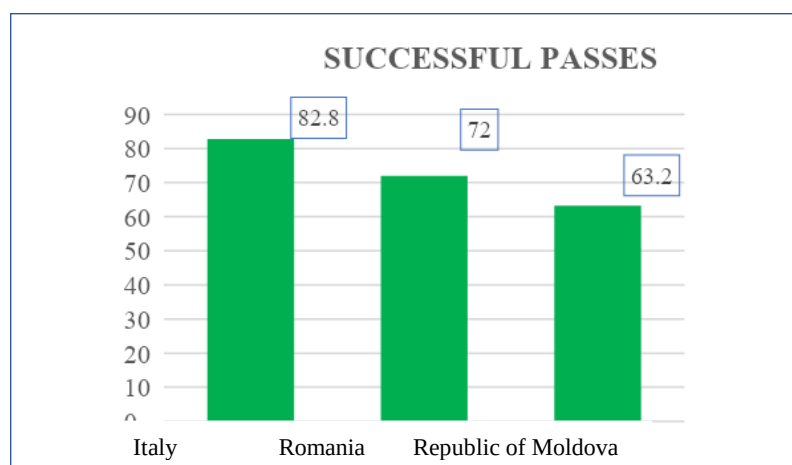


Figure 3. Comparison between the three teams regarding the number of successful passes

Table 6. Results of the six teams for the number of duels won and aerial duels won

| Kruskal-Wallis test | Comparison between the six football teams |    |       |         |
|---------------------|-------------------------------------------|----|-------|---------|
|                     | $\chi^2$                                  | df | p     | $\xi^2$ |
| Duels won           | 18.2                                      | 5  | <0.01 | 0.31    |
| Aerial duels won    | 17.9                                      | 5  | <0.01 | 0.31    |

Table 6 highlights that:

- There are statistically significant differences ( $p < 0.01$ ) between the results of the six football teams as regards both the number of duels won and the number of aerial duels won ( $p < 0.01$ ).

- In both cases, the effect size is 0.31, meaning that the group variable (football team) has a strong effect on the results achieved by the teams participating in the research.

Table 7 shows only the significant differences found. The emphasis is on the results of the Romanian team (by comparison with the first and last teams in the group).

Table 7. Pairwise comparison – Number of duels won and aerial duels won (DSCF test)

| Dwass-Steel-Critchlow-Fligner test |             | W     | p     |
|------------------------------------|-------------|-------|-------|
| <b>Duels won</b>                   |             |       |       |
| Moldova                            | Italy       | 4.747 | 0.010 |
| Moldova                            | Switzerland | 5.086 | 0.004 |
| <b>Aerial duels won</b>            |             |       |       |
| Moldova                            | Italy       | 5.208 | 0.003 |
| Moldova                            | Lithuania   | 4.442 | 0.021 |
| Moldova                            | Switzerland | 4.174 | 0.037 |

There is no significant difference ( $p > 0.05$ ) between the Romanian team, the Italian team (ranked first) and the Republic of Moldova team (ranked last in the group) regarding the number of duels won and the number of aerial duels won. However, the Italian team recorded a higher number of duels won ( $m = 52$ ) compared to the Romanian team ( $m = 51.2$ ) and the Republic of Moldova team ( $m = 43.4$ ), as well as a higher number of aerial duels won (mean = 53.7) compared to the national team (mean = 47.6) and the Republic of Moldova team (mean = 28.3). (Figures 4 and 5)

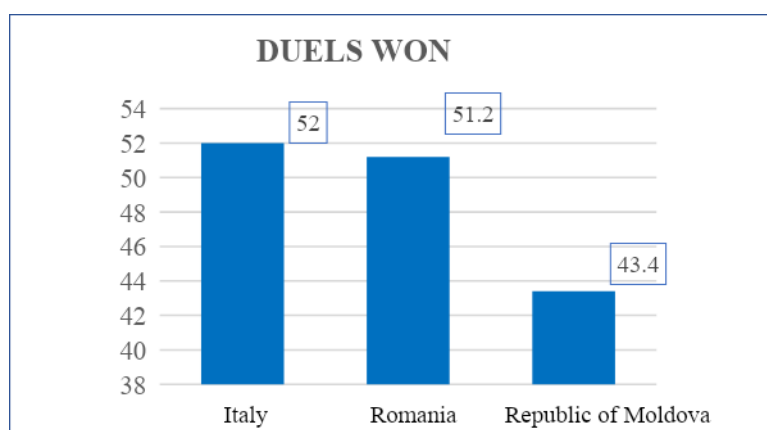


Figure 4. Comparison between the three teams regarding the number of duels won

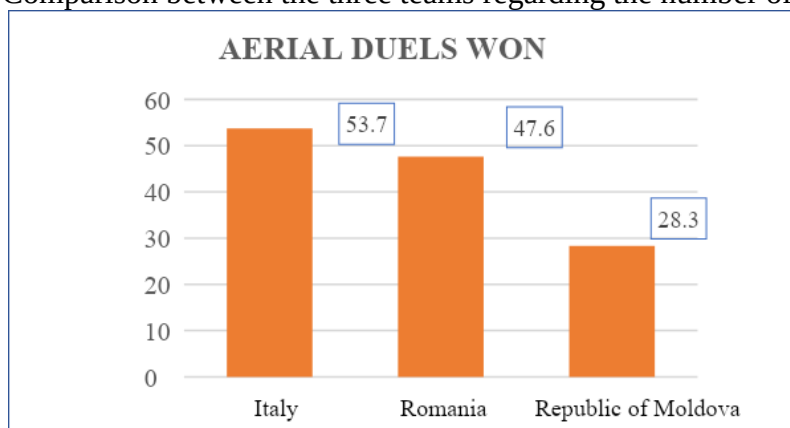


Figure 5. Comparison between the three teams regarding the number of aerial duels won



Table 8. Results of the six teams for sliding tackles

| Kruskal-Wallis test | Comparison between the six football teams |    |       |         |
|---------------------|-------------------------------------------|----|-------|---------|
|                     | $\chi^2$                                  | df | p     | $\xi^2$ |
| Sliding tackles     | 21                                        | 5  | <0.01 | 0.36    |

Table 8 reveals that:

- There are statistically significant differences between the results of the six football teams regarding the number of sliding tackles ( $p < 0.01$ ). The effect size ( $\xi^2$ ) is 0.36, which indicates that the group variable has a very strong effect on the results of the teams participating in the research.

Table 9. Pairwise comparison – Sliding tackles (DSCF test)

| Dwass-Steel-Critchlow-Fligner test |             | W      | p     |
|------------------------------------|-------------|--------|-------|
| Moldova                            | Italy       | -4.451 | 0.020 |
| Moldova                            | Switzerland | -4.279 | 0.030 |
| Italy                              | Croatia     | 4.197  | 0.036 |

Note: W (Wilcoxon test value); p (significance threshold).

Although there are no statistically significant differences ( $p > 0.05$ ) between the Romanian team and the Republic of Moldova team and the Italian team, respectively, as regards the number of sliding tackles, some important (nuance) differences can be noted (Figure 6).

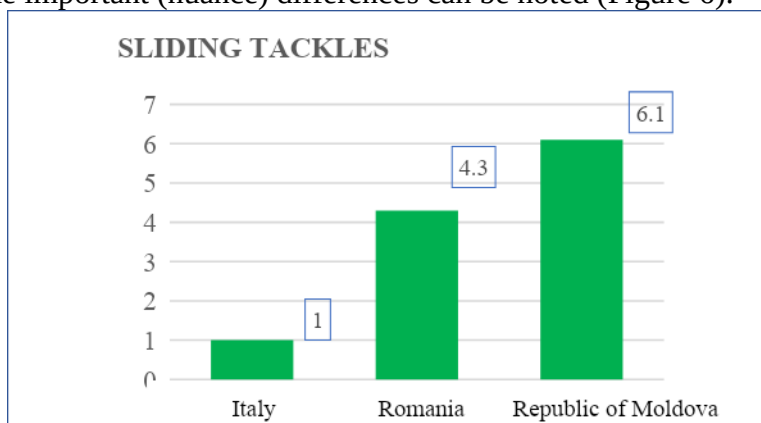


Figure 6. Comparison between the three teams regarding the number of sliding tackles

The representative team of Italy recorded on average a lower number of sliding tackles ( $m = 1$ ) compared to the national team ( $m = 4.30$ ) and the Republic of Moldova team ( $m = 6.10$ ).

We also identified significant correlations between the technical-tactical indicators recorded for both the Romanian team and the Italian team (ranked first in Group G). First, data analysis has shown that there is no statistically significant correlation ( $p > 0.05$ ) between the number of fouls and the number of cards received during the 10 games played by the Romanian and Italian women's football teams (Tables 10 and 11).

Table 10. Results for the number of fouls and the number of cards received – Romania

| Spearman correlation     |                 |       |      |       |
|--------------------------|-----------------|-------|------|-------|
|                          | Number of fouls |       |      |       |
| Variables                | N               | r     | p    | $r^2$ |
| Number of cards received | 10              | 0.352 | 0.31 | -     |



Table 11. Results for the number of fouls and the number of cards received –Italy

| <b>Spearman correlation</b> |                 |       |      |                |
|-----------------------------|-----------------|-------|------|----------------|
|                             | Number of fouls |       |      |                |
| Variables                   | N               | r     | p    | r <sup>2</sup> |
| Number of cards received    | 10              | 0.188 | 0.60 | -              |

In the case of both Romania and Italy, there is a statistically significant positive correlation between possession (value calculated as a percentage) and the number of shots on goal, which means that the two teams manage to shoot more on goal when they keep possession for a longer time (Tables 12 and 13). Longer possession time favours the increase in the number of shots on goal, which has a positive influence on creating goal-scoring opportunities in the case of the Romanian and Italian teams.

Table 12. Results for possession and the number of shots on goal – Romania

| <b>Spearman correlation</b> |                     |       |       |                |
|-----------------------------|---------------------|-------|-------|----------------|
|                             | Ball possession (%) |       |       |                |
| Variables                   | N                   | r     | p     | r <sup>2</sup> |
| Number of shots on goal     | 10                  | 0.892 | <0.01 | 0.79           |

Table 13. Results for possession and the number of shots on goal – Italy

| <b>Spearman correlation</b> |                     |       |      |                |
|-----------------------------|---------------------|-------|------|----------------|
|                             | Ball possession (%) |       |      |                |
| Variables                   | N                   | r     | p    | r <sup>2</sup> |
| Number of shots on goal     | 10                  | 0.638 | 0.04 | 0.40           |

Regarding the Romanian team, there is a statistically significant positive correlation ( $r = 0.848$ ;  $p < 0.01$ ) between the number of counterattacks and the number of duels won (Table 14), which means that the Romanian team manages to initiate a higher number of counterattacks when the number of duels won is greater. The effect size ( $r^2$ ) is 0.71, which highlights that the relationship between the two variables (number of counterattacks and number of duels won) is very strong. This aspect indicates that the Romanian team has an increased tendency to counterattack due to winning duels against the opposing team.

In the case of the Italian team, there is no statistically significant association ( $p > 0.05$ ) between the number of counterattacks and the number of duels won, as well as aerial duels won ( $p > 0.05$ ). Analysis of the research data obtained for the Italian team does not indicate a significant correlation in terms of initiating counterattacks as a result of duels won (nor as a result of aerial duels won). (Table 15)

Table 14. Results for the number of duels won, aerial duels won and counterattacks – Romania

| <b>Spearman correlation</b> |                |       |       |                |
|-----------------------------|----------------|-------|-------|----------------|
|                             | Counterattacks |       |       |                |
| Variables                   | N              | r     | p     | r <sup>2</sup> |
| Number of duels won         | 10             | 0.848 | <0.01 | 0.71           |
| Number of aerial duels won  | 10             | 0.434 | 0.21  | -              |

Table 15. Results for the number of duels won, aerial duels won and counterattacks – Italy

| Spearman correlation       |                |        |      |                |
|----------------------------|----------------|--------|------|----------------|
|                            | Counterattacks |        |      |                |
| Variables                  | N              | r      | p    | r <sup>2</sup> |
| Number of duels won        | 10             | -0.127 | 0.72 | -              |
| Number of aerial duels won | 10             | 0.130  | 0.72 | -              |

We have also identified a significant negative correlation ( $r = -0.812$ ;  $p < 0.01$ ) between possession (value expressed as a percentage) and the number of fouls committed (Table 16), which means that the Romanian team makes fewer fouls when keeping possession for a longer time. The coefficient of determination ( $r^2$ ) has the value 0.65. Thus, the relationship between the two variables (possession and number of fouls) is very strong. This suggests that longer ball possession favours the decrease in the number of fouls committed, which positively influences the overall game of the national team.

For the Italian team, there is no significant correlation between possession (%) and the number of fouls committed (Table 17). Therefore, there is no relationship between keeping possession and the number of fouls committed.

Table 16. Results for possession and the number of fouls committed – Romanian team

| Spearman correlation      |                                 |        |       |                |
|---------------------------|---------------------------------|--------|-------|----------------|
|                           | Ball possession (in percentage) |        |       |                |
| Variables                 | N                               | r      | p     | r <sup>2</sup> |
| Number of fouls committed | 10                              | -0.812 | <0.01 | 0.65           |

Table 17. Results for possession and the number of fouls committed – Italian team

| Spearman correlation      |                                 |        |      |                |
|---------------------------|---------------------------------|--------|------|----------------|
|                           | Ball possession (in percentage) |        |      |                |
| Variables                 | N                               | r      | p    | r <sup>2</sup> |
| Number of fouls committed | 10                              | -0.103 | 0.77 | -              |

### Discussion and Conclusion

The present research is based on the technical and tactical analysis of the Romanian women's national team in the qualification campaign for the 2023 FIFA Women's World Cup. The results of the Romanian team were compared with the results of Italy (ranked first) and the Republic of Moldova (ranked last in the group).

Regarding the number of fouls committed, the statistical analysis has highlighted that there are significant differences between the Romanian team and the Republic of Moldova

team (with the latter committing significantly more fouls). No significant differences were identified between the national team and the Italian team (ranked first in the group) for the mentioned indicator. Regarding the number of fouls received, no significant differences were observed between the Romanian team and the Republic of Moldova team and the Italian team, respectively. However, the Italian women's football team received a higher number of fouls compared to the national team. At the same time, the Italian team made

fewer fouls compared to the Romanian national team.

As regards possession and the number of successful passes, the statistical analysis shows that no statistically significant differences have been recorded between the Romanian team and the Italian team (ranked first) and the Republic of Moldova team (ranked last). However, it can be noted that Italy has recorded a higher score in terms of ball possession compared to the national team, as well as a higher number of successful passes.

In terms of the number of duels won and sliding tackles, no significant differences can be found between the three teams studied (Romania, Italy and Moldova). But the Italian team recorded more duels won and a smaller number of sliding tackles compared to the Romanian national team.

We also highlighted significant correlations between the technical-tactical indicators recorded for both the Romanian team and the Italian team (ranked first in Group G).

In a first phase, data analysis has shown that there is no statistically significant correlation between the number of fouls and the number of cards received by the two teams (Romania and Italy). In the case of both Romania and Italy, there is a significant positive correlation between possession (value calculated as a percentage) and the number of shots on goal, which means that the two teams manage to shoot more on goal when they keep possession for a longer time. Longer possession time favours the increase in the number of shots on goal, which has a positive influence on creating goal-scoring opportunities in the case of the Romanian and Italian teams.

Regarding the Romanian team, there is a significant positive correlation between the number of counterattacks and the number of duels won, which means that the Romanian team manages to initiate a higher number of counterattacks when the number of duels won is greater. This aspect suggests that the Romanian team has an increased tendency to counterattack due to winning duels against the opposing team. In the case of the Italian team, there is no statistically significant association

between the number of counterattacks and the number of duels won, as well as aerial duels won. Analysis of the research data obtained for the Italian team does not indicate a significant correlation in terms of initiating counterattacks as a result of duels won (nor as a result of aerial duels won).

Last but not least, we have also identified a significant negative association between possession (value expressed as a percentage) and the number of fouls committed, which means that the Romanian team makes fewer fouls when keeping possession for a longer time. This suggests that longer ball possession favours the decrease in the number of fouls committed, which positively influences the overall game of the national team. For the Italian team, there is no significant link between the two indicators. Therefore, there is no relationship between keeping possession and the number of fouls committed.

Ibáñez et al. (2018) have identified important connections between team ranking and scoring first in women's professional football, meaning that a better ranked team will increase its chances of scoring first and even winning the game, regardless of the quality of the opponents, the pitch or the venue where the match is played (home or away). The literature emphasises that football players from high ball possession teams have better technical performance for most offensive indicators (attacks, counterattacks, duels, aerial duels) and shots on goal, which leads to the conclusion that these teams are strong, especially as regards the organization of attacking actions (Liu et al., 2021).

In professional football, only 1% of all attacking actions and about 10% of all shots end up in a goal (Anzer & Bauer, 2021). Receiving red and yellow cards is an event that influences the normal course of a football game (Ryynänen et al., 2013). In elite women's football, an increase has been noted in the number of interceptions and yellow cards especially towards the end of each half (Tscholl et al., 2007).

By studying tactical behaviours in professional football with the help of computer technology, coaches can develop training programmes (Goes et al., 2021) that

increase the technical and tactical performance of professional female players in a much shorter time.

The results of the present study can be used by female football players and football coaches to raise awareness on the dynamics of the game and the technical-tactical elements used by successful women's football teams. Future studies should also address other indicators such as the number of goals scored or received, shots into the goal area, average shooting distance, corners, free kicks, successful dribbles, etc.

The recorded statistical results demonstrate the need to outline a coherent technical-tactical model for organizing the players' behaviour in order to obtain positive results that will increase the team's efficiency. The results the model aims at are as it follows: better possession, efficiently committed fouls which do not numerically affect the team, more points scored as related to the opponents', etc.

At the same time, specialized literature highlights the need to initiate a counterattack after taking possession of the ball, a principle respected by the Romanian National Team (3rd place), which is not valid for the Italian National Team (1st place). These are conclusions that require the creation of such a model, after making a strict statistical analysis of the technical and tactical elements that will be used according to the players' characteristics and different game situations, which will materialize in increased efficiency of the team and a better place in the ranking.

### Authors' Contribution

All authors have equally contributed to this study.

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