Paper : Game Analysis

Effectiveness of FIFA/Coca-Cola World Ranking in Predicting the Results of FIFA World Cup™ Finals

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The aim of this study was to examine effectiveness of FIFA/Coca-Cola World Ranking (FIFA Ranking) in the prediction of the results of FIFA World Cup™ (World Cup) finals. All results of World Cup USA 94, France 98, Korea/Japan 2002, and Germany 2006 and FIFA Rankings just prior to each World Cup were used as data. The analytical procedures were as follows: 1) establishing rules for winning and losing in the World Cup, and 2) confirming the prediction accuracy of results of World Cup Germany 2006 based on these rules. The probability that the top sixteen teams in FIFA Ranking would advance to the final tournament was 78.0%. The probability was statistically higher than the probability for teams lower than the top sixteen teams. The probability that high-ranked teams beat low-ranked teams in the preliminary round was 69.1% ($p < 0.05$). The probability that the top sixteen teams in Germany 2006 would participate in the final tournament was 68.8%. There was no significant difference between competitions ($\chi^2(1) = 0.024$, *ns*). In Germany 2006, the prediction accuracy of participation in the final tournament was 62.5%. FIFA Ranking and results of World Cup were moderately correlated ($r = 0.40$). These findings indicated that FIFA Ranking was effective as a prediction method for the results of World Cup finals.

Keywords: soccer, team skill, accuracy

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1. Introduction

In August, 1993, the *Federation Internationale de Football Association* (FIFA) established the FIFA/Coca-Cola World Rankings (FIFA Rankings) with the purpose of clarifying the respective positions of the national / regional teams of FIFA member nations relative to team skill and performance levels (FIFA, 2007). The FIFA Rankings have been used as a criterion for setting the participation quotas of the respective continents for the FIFA World Cup™ (World Cup). Considering that the World Cup benefit the participating nations in terms of economic gain, soccer promotion and the improvement of performance, the FIFA Rankings play an important role.

The system employed in calculating the FIFA Rankings was revised in 1999 and again in 2006, following World Cup Germany 2006. Under the system that was used up to World Cup Germany 2006, rankings were determined based on the results of international "A" matches over the previous 8 years in consideration of the importance of individual matches, opponent strength, and loss margins. Points were calculated based on game results over the previous 8 years with more recent results and more significant matches being more heavily weighted to reflect the more current competitive state of the teams. Under this system, the more matches that a team played, the more points it obtained. Some pointed out, however, that such a system favored regions that scheduled a higher number competitive qualifying matches, while counting against teams, such as host teams, that qualify directly for major tournaments without the need to compete in preliminary matches. As a result, the ranking system was modified following the 2006 World Cup. Under the new system, rankings are based on game results

over the previous 4 rather than 8 years. However, the extent to which the newly-revised FIFA Rankings reflect the actual status of team skills has not been clarified.

A study was carried out to evaluate team skills in relation to World Cup results (O'Donoghue et al., 2003). In the study, 2002 FIFA World Cup results were predicted using the results of international games over the previous years. Among the several potential methods for the prediction of results, according to the research, is a method by which a maximum 4 of the 8 teams that would advance to the quarterfinals could be predicted. This method is based on previous game results, as with the calculation method for FIFA Rankings. It is, however, unclear whether the method used in the research was superior to the FIFA Rankings in terms of predicting World Cup results. Having been revised twice, the FIFA Ranking calculation method could be revised yet again in the future. Any new evaluation method, however, would require clarification of its relative merits in comparison with the existing evaluation method. In order to gain a victory, it is important to predict which teams will advance to the final tournament as accurately as possible and to collect adequate data on such teams at the earliest possible stage. In the First Round, for which the schedule has been set, it becomes vital for a team to predict the match status of the opposing team in order to devise adequate strategies.

The aim of this study was to evaluate the efficacy of the FIFA Rankings in the prediction of World Cup results through an examination of the relation between previous World Cup results and corresponding FIFA Rankings and through a comparison of FIFA Ranking-based prediction with the prediction method used in a previous study.

2. Methods

2.1. Data

Data used in this study were the results of the first round and of the final tournaments of the 1994 World Cup USA, the 1998 World Cup France, the 2002 World Cup Korea / Japan, and the 2006 World Cup Germany as well as the FIFA Rankings issued in May of the respective tournament years.

2.2. Data collection

The results of the respective matches played in the earlier 3 World Cups and the corresponding FIFA Rankings issued in May of the respective World Cup years were collected from the official FIFA website (http://www.fifa.com/). The final results and the FIFA Rankings of the teams participating in the respective World Cups are as presented in **Appendix 1**.

2.3. Analytical procedures

After analyzing the relationship between World Cup results and FIFA Rankings, result prediction rules were established. Using these result prediction rules, the results of World Cup Germany were predicted. The effectiveness of the prediction was evaluated based on a comparison of the predicted and actual results of World Cup Germany.

2.3.1. Analyses of the relationship between the FIFA Rankings and World Cup results

Utilizing data from World Cup USA, World Cup France, and World Cup Korea / Japan, an investigation was made into the 1) relationship between FIFA Rankings and teams advancing to the final, 2) relationship between FIFA Rankings and teams advancing to the final tournament, and 3) the results of the matches between the upper- and lower-ranked teams in terms of FIFA Rankings. Based on the assumption that FIFA Rankings are valid indexes for the evaluation of team skills and that, therefore, the top 16 teams in the FIFA Rankings for the participating teams (participating team FIFA Rankings) were to advance to the final tournament, the rates at which the top 16 teams in the participating team FIFA Rankings would advance to the final tournament and the rates at which the other teams would advance to the final tournament were compared. Similarly, based on the assumption that the upper-ranked teams would most likely beat the lower-ranked teams on the FIFA Ranking list, game results of the upper- and lower-ranked teams were compared in terms of the First Round and the Final Tournament.

2.3.2. Establishment of result prediction rules

Result prediction rules were established based on the results of the analyses of the relationships between the FIFA Rankings and the World Cup

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Table 1 Relation of FIFA Ranking and participating teams in the final

	USA 94	France 98	Korea/Japan 02	Germany 06
1st	Brazil (1)	France (15)	Brazil (2)	Italy (11)
2nd	Italy (13)	Brazil (1)	Germany (8)	France (8)

Note. FIFA Rankings of teams which participated in the final round are indicated in parenthesises.

results regarding 1), 2), and 3). By applying these rules to the prediction for World Cup Germany results, the efficacy of the prediction was examined.

2.3.3. Evaluation of the efficacy of FIFA Ranking-based prediction of game results

The efficacy of the FIFA Ranking-based prediction for the game results was evaluated from multiple perspectives as follows: 1) The relationship between the FIFA Rankings and the teams advancing to the final: the FIFA Rankings for the participating teams of the 3 World Cups (USA, France, and Korea/ Japan) held prior to World Cup Germany were checked. Efficacy was evaluated based on the degree of coincidence between these FIFA Rankings and the participating team FIFA Rankings for World Cup Germany. 2) The relationship between the FIFA Rankings and the probability of advancement to the final tournament: the probability of the top 16 teams in the participating team FIFA Rankings advancing to the final tournament was calculated. Efficacy was evaluated through a comparison of probability and the degree of prediction accuracy of the previous study. 3) The game results of the upper- and lower-ranked teams in terms of FIFA Rankings: winning percentages of the upper- and lower-ranked teams were calculated. Efficacy was evaluated based on the winning percentage of the upper-ranked teams in the 3 World Cups and that in World Cup Germany. Using the rules for 2) and 3), teams that would advance to the final tournament of World Cup Germany were predicted. Efficacy was evaluated based on the accuracy of prediction. Lastly, using all of the data, the efficacy of FIFA Ranking-based prediction was examined based on correlation between FIFA Rankings (or participating team FIFA Rankings) and World Cup results.

2.4. Statistical analysis

Differences between the probabilities of the top 16 teams of the participating team FIFA Rankings advancing to the final tournament and those of the other teams advancing to the final tournament, and differences in the rates at which the upper-ranked teams would beat the lower-ranked teams were tested by Fisher's exact test. Differences of the probabilities of the top 16 teams on the participating team FIFA Ranking list advancing to the final tournament (as well as the rates at which the other teams advanced to the final tournament) were tested by chi-square test (χ^2 test). In order to calculate the correlation between FIFA Rankings (or participating team FIFA Rankings) and World Cup results, the World Cup results had to be numerically converted. The conversion was conducted by two methods. In the first method (results a), the top 4 teams of the respective World Cups were designated respectively as 1, 2, 3, and 4, in descending order, and the top 8 teams were designated as 5, top 16 as 6, and teams that lost in the First Round were designated as 7. In the other method (results b), the best 8 teams were designated as 8, best 16 were designated as 16, and teams that lost in the First Round were designated either as 24 (World Cup USA) or as 32 (World Cup France, Korea/ Japan, and Germany). Considering the data characteristics, the Spearman rank correlation coefficient was used as the correlation coefficient. The level of statistical significance was set at 0.05.

3. Results

3.1. The teams advancing to the final and their FIFA Rankings

Table 1 shows the relation between the teams advancing to the final and their FIFA Rankings. Regarding the 3 World Cups held prior to World Cup Germany, all the teams that advanced to the final were among the top 15 in the participating team FIFA Rankings.

3.2. Probability of advancing to the final tournament and FIFA Rankings

Table 2 shows the probabilities of the top 16 teams in the participating team FIFA Rankings and of the other teams advancing to the final tournament. The probability of the top 16 teams in the participating team FIFA Rankings advancing to the final tournament was 81.3% in World Cup USA, the

Table 2 Relation of FIFA Ranking and probabilities of advance to the final tournament.

FIFA Ranking	USA 94	France 98	Korea/Japan 02	Total	Germany 06
Top sixteen teams	81.3%(13/16)	68.8%(11/16)	68.8%(11/16)	72.9%(35/48)*	68.8%(11/16)
The other teams	37.5%(3/8)	31.3%(5/16)	31.3%(5/16)	32.5%(13/40)*	31.3%(5/16)

Note. Frequency is indicated in parenthesises; Asterisk indicates a significant difference between the top sixteen teams and the other teams.

Table 3 Results of upper level teams in FIFA Ranking.

	Competition	Win	Lose	Total	Winning percentage	Significance
First round	Total of three competitions	65	29	94	69.1%	p = 0.0002
	Germany 06	26	11	37	70.3%	p = 0.0200
Final tournament	Total of three competitions	31	17	48	64.6%	p = 0.0594
	Germany 06	6	10	16	37.5%	p = 0.4544

highest of all the 3 World Cups held prior to World Cup Germany. The average probability of the top 16 teams advancing to the final tournament in the 3 World Cups was 72.9%, which was significantly high in comparison with the other teams (32.5%) (two-tailed test: $p = 0.0002$, $p < 0.05$).

3.3. Results of the matches between the upper- and the lower-ranked teams

Table 3 presents the game results of the upper-ranked teams in the 3 World Cups held prior to World Cup Germany and those in World Cup Germany. There were 52 games (including 36 games in the First Round) in World Cup USA and 64 games (including 48 games in the First Round) in World Cup France and also in World Cup Korea/ Japan, totaling 180 games (including 132 games in the First Round). Because no extra time is allowed in the First Round, it is possible for games to end in a draw. In the 3 World Cups held prior to World Cup Germany, 38 of a total of 132 games ended in a draw. In the First Round of the 3 World Cups, the rate at which the upper-ranked teams beat the lower-ranked teams was 69.1% (65 wins/ 94 games), which is statistically significantly high (two-tailed test: $p = 0.0002$, $p < 0.05$). In the final tournament, the corresponding rate was 64.6% (31 wins/ 48 games), which was lower than the rate for the First Round. There was no significant difference in quantity between victories and defeats (two-tailed test: $p = 0.0594$, *ns*).

3.4. Evaluation of the efficacy of FIFA Ranking-based prediction of game results

From the analytical results presented in **Tables 1** through 3, the following 3 rules were set as the rules for game result prediction. 1) Teams participating in the final are 2 of the top 15 teams in the participating team FIFA Rankings. 2) The probability of the top 16 teams in the participating team FIFA Rankings entering the final tournament is high. 3) In the First Round, the rate at which the upper-ranked teams beat the lower-ranked teams is high.

Utilizing these rules, the results of World Cup Germany were examined. As shown in **Table 1**, the Italian team, which was ranked 11, and the French team, which was ranked 8, advanced to the final. This outcome was consistent with Rule 1, just as the results of the other 3 World Cups were. As shown in **Table 2**, the rate at which the top 16 teams in the participating team FIFA Rankings advanced to the final tournament in World Cup Germany was 68.8%, showing no significant difference ($x^2(1) = 0.024$, *ns*) in comparison with the corresponding rate for the 3 World Cups (total: 70.8%). The rate at which the other teams advanced to the final tournament in World Cup Germany was 31.3%, showing no significant difference ($x^2(1) = 0.0071$, *ns*) in comparison with the corresponding rate for the 3 World Cups (35.0%).

Table 4 shows the prediction results for the teams advancing to the final tournament. Following Rule 3, the predictions were made on the assumption that the upper-ranked teams beat the lower-ranked teams. A comparison of the teams predicted to advance to the final tournament and the teams that actually advanced to the finals revealed that the prediction accuracy was 62.5% (10 of a total of 16 teams). According to Rule 2, the Costa Rican team and the Korean team had low probabilities of advancing to the final tournament because neither was among the top 16 teams in the

Table 4 Prediction accuracy for participation in final tournament of Germany 06.

Group	Prediction	Result
A	Germany, (Costa Rica)	Germany, Ecuador
B	England, Sweden	England, Sweden
C	Netherlands, Argentina	Netherlands, Argentina
D	Mexico, Portugal	Mexico, Portugal
E	Czech Republic, USA	Italy, Ghana
F	Brazil, Japan	Brazil, Australia
G	France, (Korea Repubulic)	France, Switzerland
H	Spain, Tunisia	Spain, Ukraine

Note. Parenthesises indicate the probability of participation in the final tournament is low by application of the second rule.

participating team FIFA Rankings. The prediction accuracy would be 71.4% (10 of the total 14 teams), if these 2 teams were excluded.

Table 5 shows the correlation between FIFA Rankings (or participating team FIFA Rankings) and World Cup results. The correlation coefficient was approximately 0.4, a moderate value, with no regard for the methods to indicate the results.

4. Discussions

This study aimed to evaluate the efficacy of FIFA Rankings for the prediction of World Cup results by examining the relations between the results of past World Cups and corresponding FIFA Rankings and by comparing the FIFA Ranking-based prediction with the prediction method used in a previous study.

In the 3 World Cups held prior to World Cup Germany, the teams that advanced to the final were among the top 15 teams in the participating team FIFA Rankings. The same can be said regarding World Cup Germany. This result seems valid, considering that the probability of the top 16 teams in the participating team FIFA Rankings advancing to the final tournament was 70.8%, as shown in **Table 2**. A maximum of 16 teams are able to advance to the final tournament. This means that any of the 16 teams that have advanced to the final tournament has a possibility of advancing to the finals. If FIFA Rankings were able to serve as the index which evaluates team skills accurately, the top 2 teams in the participating team FIFA Rankings would advance to the finals, and the upper-ranked team would prevail. However, it was only in World Cup USA that Brazil, number one in the participating team FIFA Rankings, won the final. Two of the 4 World Cup champion teams were low-ranked teams. In a study on the prediction of World Cup

Table 5 Correlations of FIFA Rankings and result of World Cup (N = 120).

	Results (a)	Results (b)
FIFA Ranking	0.400	0.394
FIFA Ranking (Ranking of participating team in World Cup)	0.400	0.405

Note. Values in the table indicate rank correlation coefficient.

champions (O'Donoghue et al., 2003), the Brazilian team was predicted to win the 2002 World Cup Korea / Japan in a simulation using 282 International soccer competition games (World Cups, European Football Championships, and Copa Americas). The reproducibility of the results of the simulation has not, however, been verified. The rules obtained in this study were based only upon the data of the 4 most recent World Cups. Further investigation is needed.

In a comparison of the probability of the top 16 teams in the participating team FIFA Rankings advancing to the final tournament with other teams for the 3 World Cups held prior to World Cup Germany, the former was significantly high (**Table 2**). If FIFA Rankings were an accurate index for game result prediction, the rate at which the top 16 teams in the participating team FIFA Rankings advance to the final tournament would be 100%. For the data used for this study, however, the corresponding rate was approximately 70%. This result does not support the validity of the FIFA Rankings. O'Donoghue and colleagues examined the accuracy of a number of prediction methods in a paper published in 2003 and concluded that the most accurate among those examined by them were predictions made by those who had "research experience in soccer culture, history, and politics as well as an interest in the evolution of international soccer," and that the accuracy of such predictions for teams that would advance to the quarterfinals was 50% (4 teams out of 8), while the prediction accuracy of quantitative prediction methods based on simulation was 37.5%. As shown in **Appendix 1**, 3 of the top 8 teams in the participating team FIFA Rankings advanced to the quarterfinals, making the prediction accuracy of the FIFA Rankings 37.5%. Meanwhile, the accuracy of predictions for the teams advancing to the quarterfinals based on the assumption that the upper-ranked teams would beat the lower-ranked teams was 62.5%, predicting 5 of the 8 teams (see **Appendix 2**). It has been proven,

therefore, that FIFA Rankings are more successful than the prediction method used by O'Donoghue and colleagues in terms of prediction accuracy.

If FIFA Rankings were a perfectly reliable index for evaluating team skills, the rate at which the upper-ranked teams beat lower-ranked teams would be high. In this study, the corresponding rate in the First Round was calculated as approximately 70%, which was significantly high (**Table 3**). This indicates that FIFA Rankings are effective as a means of predicting game results in the First Round. Meanwhile, the rate at which the upper-ranked teams beat the lower-ranked teams decreased in the Final Tournament. In World Cup Germany, said rate became lower than the rate at which the lower-ranked teams beat the upper-ranked teams. In soccer, the concept of "home advantage" has been widely accepted. In general, the home team is considered to have a significant advantage over visiting teams. No host nations failed to advance to the final tournament in the past World Cups. The method of drawing for group placement for the First Round of the World Cup can also give an advantage to some teams. Besides, the previous calculation method for FIFA Rankings could militate against a host nation who was exempt from playing competitive qualifying matches. Such issues were considered attributable to the low winning percentage of the upper-ranked teams. Moreover, since differences in team skills among participating teams are supposed to be smaller in the final tournament than in the First Round, FIFA Rankings could hardly be reflected in winning percentages.

The accuracy of the FIFA Ranking-based prediction for the teams advancing to the final tournament of World Cup Germany was 62.5% (10 teams of the 16 teams) (see **Table 4**). Among the 8 groups participating in the First Round, it was only Group E both of whose 2 winning teams failed to be predicted. The FIFA Rankings of the individual teams of Group E were: Czech Republic—2nd place, USA—5th place, Italy—13th place, and Ghana—48th place. The median value of the FIFA Rankings was 9.0. Considering that the median value of the FIFA Rankings of all the participating teams in World Cup Germany was 23.0, it is obvious that upper-ranked teams were concentrated in Group E. This seems to explain why it can be difficult to predict the results of matches between the upper-ranked teams only from their places in the FIFA Rankings.

In order to verify the validity of the value measured by test, evidence based on the relation of test scores to the other variables (AERA et al., 2002), that is, correlations between the existing test and adequate external criterion (Gregory, 1992), is needed. In this study, FIFA Rankings could serve as the existing test and the World Cup results as adequate external criterion. The correlation coefficient for the FIFA Rankings (or participating team FIFA Rankings) and the World Cup results was approximately 0.4 (**Table 5**), indicating a moderate relation. Considering that the correlation efficient is moderately high, that the prediction accuracy for the teams advancing to the final tournament is 60-70%, and that this prediction accuracy exceeds that obtained in the previous study, it can be said that FIFA Rankings are an effective means of predicting World Cup results.

5. Conclusion

This study aimed to evaluate the efficacy of FIFA Rankings for predicting World Cup results by examining the relations between the results of past World Cups and corresponding FIFA Rankings and by comparing the FIFA Ranking-based prediction with the prediction method used in a previous study. Within the range of the statistical methods and samples that were used in this study, the following results have been obtained:

1) Teams that advanced to the final were among the top 15 teams in the participating team FIFA Rankings.
2) The probability of the top 16 teams advancing to the final tournament was 70.8%, exceeding the prediction accuracy rate of the previous study results.
3) Though it was as high as 69.1% in the First Round, the rate at which the upper-ranked teams beat the lower-ranked teams was less high in the final tournament.
4) The accuracy of the FIFA Ranking-based prediction for the teams advancing to the final tournament was 62.5%.
5) Considering that the correlation efficient is moderately high, that the prediction accuracy for the teams advancing to the final tournament is 60-70%, and that this prediction accuracy exceeds that obtained in the previous study, it can be said that FIFA Rankings are an effective

means of predicting World Cup results.

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Appendix 1 FIFA Ranking and results of participating teams in World Cup final round

USA 94				France 98				Korea/Japan 02				Germany 06			
	FIFA Ranking	Team	Result		FIFA Ranking	Team	Result		FIFA Ranking	Team	Result		FIFA Ranking	Team	Result
1	1	Brazil	1st	1	1	Brazil	2nd	1	1	France	1st round	1	1	Brazil	Top 8
2	2	Germany	Top 8	2	2	Germany	Top 8	2	2	Brazil	1st	2	2	Czech Republic	1st round
3	3	Sweden	3rd	3	4	Mexico	Top 16	3	3	Argentina	1st round	3	3	Netherlands	Top 16
4	4	Norway	1st round	4	5	England	Top 16	4	5	Portugal	1st round	4	4	Mexico	Top 16
5	6	Argentina	Top 16	5	6	Argentina	Top 8	5	6	Italy	Top 16	5	5	USA	1st round
6	7	Nigeria	Top 16	6	7	Norway	Top 16	6	7	Mexico	Top 16	6	6	Spain	Top 16
7	8	Switzerland	Top 16	7	8	Yugoslavia	Top 16	7	8	Spain	Top 8	7	7	Portugal	4th
8	9	Spain	Top 8	8	9	Chile	Top 16	8	11	Germany	2nd	8	8	France	2nd
9	10	Romania	Top 8	9	10	Colombia	1st round	9	12	England	Top 8	9	9	Argentina	Top 8
10	11	Netherlands	Top 8	10	11	USA	1st round	10	13	USA	Top 8	10	10	England	Top 8
11	12	Repubulic of Ireland	Top 16	11	12	Japan	1st round	11	15	Repubulic of Ireland	Top 16	11	13	Italy	1st
12	13	Mexico	Top 16	12	13	Morocco	1st round	12	17	Cameroon	1st round	12	16	Sweden	Top 16
13	16	Italy	2nd	13	14	Italy	Top 8	13	18	Paraguay	Top 16	13	18	Japan	1st round
14	18	Colombia	1st round	14	15	Spain	1st round	14	19	Sweden	Top 16	14	19	Germany	3rd
15	20	Russia	1st round	15	18	France	1st	15	20	Denmark	Top 16	15	21	Tunisia	1st round
16	23	USA	Top 16	16	19	Croatia	3rd	16	21	Croatia	1st round	16	23	Iran	1st round
17	24	Cameroon	1st round	17	20	Korea Republic	1st round	17	22	Turkey	3rd	17	23	Croatia	1st round
18	29	Bulgaria	4th	18	21	Tunisia	1st round	18	23	Belgium	Top 16	18	26	Costa Rica	1st round
19	30	Morocco	1st round	19	22	Romania	Top 16	19	24	Uruguay	1st round	19	29	Poland	1st round
20	32	Greece	1st round	20	24	South Africa	1st round	20	25	Slovenia	1st round	20	29	Korea Republic	1st round
21	34	Belgium	Top 16	21	25	Netherlands	4th	21	27	Nigeria	1st round	21	32	Cote d'Ivoire	1st round
22	35	Saudi Arabia	Top 16	22	27	Denmark	Top 8	22	28	Russia	1st round	22	33	Paraguay	1st round
23	37	Korea Republic	1st round	23	29	Paraguay	Top 16	23	29	Costa Rica	1st round	23	34	Saudi Arabia	1st round
24	43	Bolivia	1st round	24	30	Jamaica	1st round	24	31	Tunisia	1st round	24	35	Switzerland	Top 16
				25	31	Austria	1st round	25	32	Japan	Top 16	25	39	Ecuador	Top 16
				26	34	Saudi Arabia	1st round	26	34	Saudi Arabia	1st round	26	42	Australia	Top 16
				27	35	Bulgaria	1st round	27	36	Ecuador	1st round	27	44	Serbia and Montenegro	1st round
				28	36	Belgium	1st round	28	37	South Africa	1st round	28	45	Ukraine	Top 8
				29	41	Scotland	1st round	29	38	Poland	1st round	29	47	Trinidad and Tobago	1st round
				30	42	Iran	1st round	30	40	Korea Republic	4th	30	48	Ghana	Top 16
				31	49	Cameroon	1st round	31	42	Senegal	Top 8	31	57	Angola	1st round
				32	74	Nigeria	Top 16	32	50	China PR	1st round	32	61	Togo	1st round

Note. FIFA Rankings are values just prior to each World Cup.

Appendix 2 Accuracy for predicting the top 8 teams in Korea/Japan 02

Prediction	Observation
Germany	○Germany
England	○England
Spain	○Spain
Argentina	Senegal
Italy	USA
Brazil	○Brazil
Portugal	Korea Republic
Turkey	○Turkey

Note. The top 8 teams were predicted based on the assumption that upper level teams in FIFA Ranking would beat lower level teams. Prediction accuracy was 62.5%(5/8).