For office use only	Team Control Number	For office use only
T1 _____	**2013647**	F1 _____
T2 _____		F2 _____
T3 _____	Problem Chosen	F3 _____
T4 _____	**D**	F4 _____

2020
MCM/ICM
Summary Sheet

Summary

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Keywords: keyword1; keyword2

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1 Introduction

1.1 Background

1.2 Problem Description

1.3 General Assumptions

1.4 Notation

2 Analysis of the Problem

2.1 Correlation Analysis and Heat Map

According to the data given, we computed the correlation among the passing position, event type, event sub type and the outcome. Here we use the ϕ coefficient of chi-squares test, where $\phi = \sqrt{\frac{\mathcal{X}^2}{n}}$. The advantage of using ϕ coefficient is it can test the association between several variables and is always bigger than zero. The following is the result.

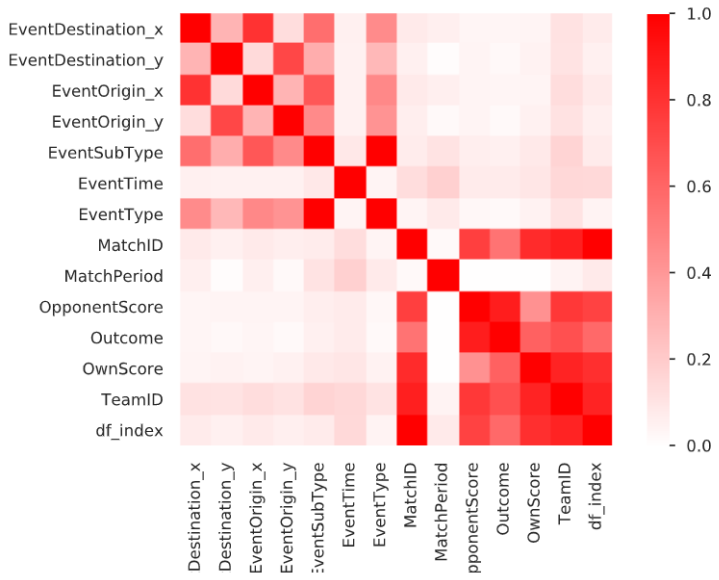

Figure 1: ϕ_k coefficient between different variables.

We can see that the area of passing position and outcome has very weak association.

2.2 Network Analysis

3 Network Display

4 Build Network Science Model

5 Model Validation

6 Validating the Model

7 Conclusions

8 A Summary

9 Evaluate of the Mode

10 Strengths and weaknesses

10.1 Strengths

References

[1] D. E. KNUTH The TEXbook the American Mathematical Society and Addison-Wesley Publishing Company , 1984-1986.

[2] Lamport, Leslie, LATEX: " A Document Preparation System ", Addison-Wesley Publishing Company, 1986.

[3] `http://www.latexstudio.net/`

[4] `http://www.chinatex.org/`

Appendices

Appendix A First appendix

Aliquam lectus. Vivamus leo. Quisque ornare tellus ullamcorper nulla. Mauris porttitor pharetra tortor. Sed fringilla justo sed mauris. Mauris tellus. Sed non leo. Nullam elementum, magna in cursus sodales, augue est scelerisque sapien, venenatis congue nulla arcu et pede. Ut suscipit enim vel sapien. Donec congue. Maecenas urna mi, suscipit in, placerat ut, vestibulum ut, massa. Fusce ultrices nulla et nisl.

Here are simulation programmes we used in our model as follow.

Input matlab source:

```
function [t,seat,aisle]=OI6Sim(n,target,seated)
pab=rand(1,n);
for i=1:n
    if pab(i)<0.4
       aisleTime(i)=0;
    else
        aisleTime(i)=trirnd(3.2,7.1,38.7);
    end
end
```

Appendix B Second appendix

some more text **Input C++ source:**

```
//============================================================================
// Name        : Sudoku.cpp
// Author      : wzlf11
// Version     : a.0
// Copyright   : Your copyright notice
// Description : Sudoku in C++.
//============================================================================

#include <iostream>
#include <cstdlib>
#include <ctime>

using namespace std;

int table[9][9];

int main() {

    for(int i = 0; i < 9; i++){
        table[0][i] = i + 1;
    }

    srand((unsigned int)time(NULL));

    shuffle((int *)&table[0], 9);

    while(!put_line(1))
    {
        shuffle((int *)&table[0], 9);
    }

    for(int x = 0; x < 9; x++){
        for(int y = 0; y < 9; y++){
            cout << table[x][y] << " ";
        }

        cout << endl;
    }
```

```
    return 0;
}
```