



APPLICATION OF DECISION SUPPORT SYSTEM (DSS) FOR FLOOD MITIGATION PROJECT IN URBAN AREA

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ABSTRACT

Nowadays, Petaling District, Selangor has become the flood prone areas when it comes to the end of the year. This research objectives are to determine the types of Decision Support System (DSS) that has been implemented by the organizations that are dealing with the flood mitigation projects and to identify the advantages of using DSS for flood mitigation projects. There are two methods of data collection used in this research. The primary data is obtained through a survey which was conducted in Petaling District whereby 103 respondents were required to answer questionnaire given in order to gather information on the types of DSS and its advantages. These respondents were Grade 7 contractor companies that are registered under CIDB located in Petaling District. Meanwhile, the secondary data are collected through articles, journals, websites and books. Statistical Package for the Social Sciences (SPSS) is applied to run and analyse the data that have been collected. The results indicate that Model-Driven DSS has been the most favourite types of DSS used by contractor companies when dealing with flood mitigation projects. Apart from that, the findings also show the respondents are agreed that the ability to generate timely warning is the most significant benefit that can be obtained by applying DSS for the flood mitigation project. It can be summarized that the overall research objectives have been achieved.

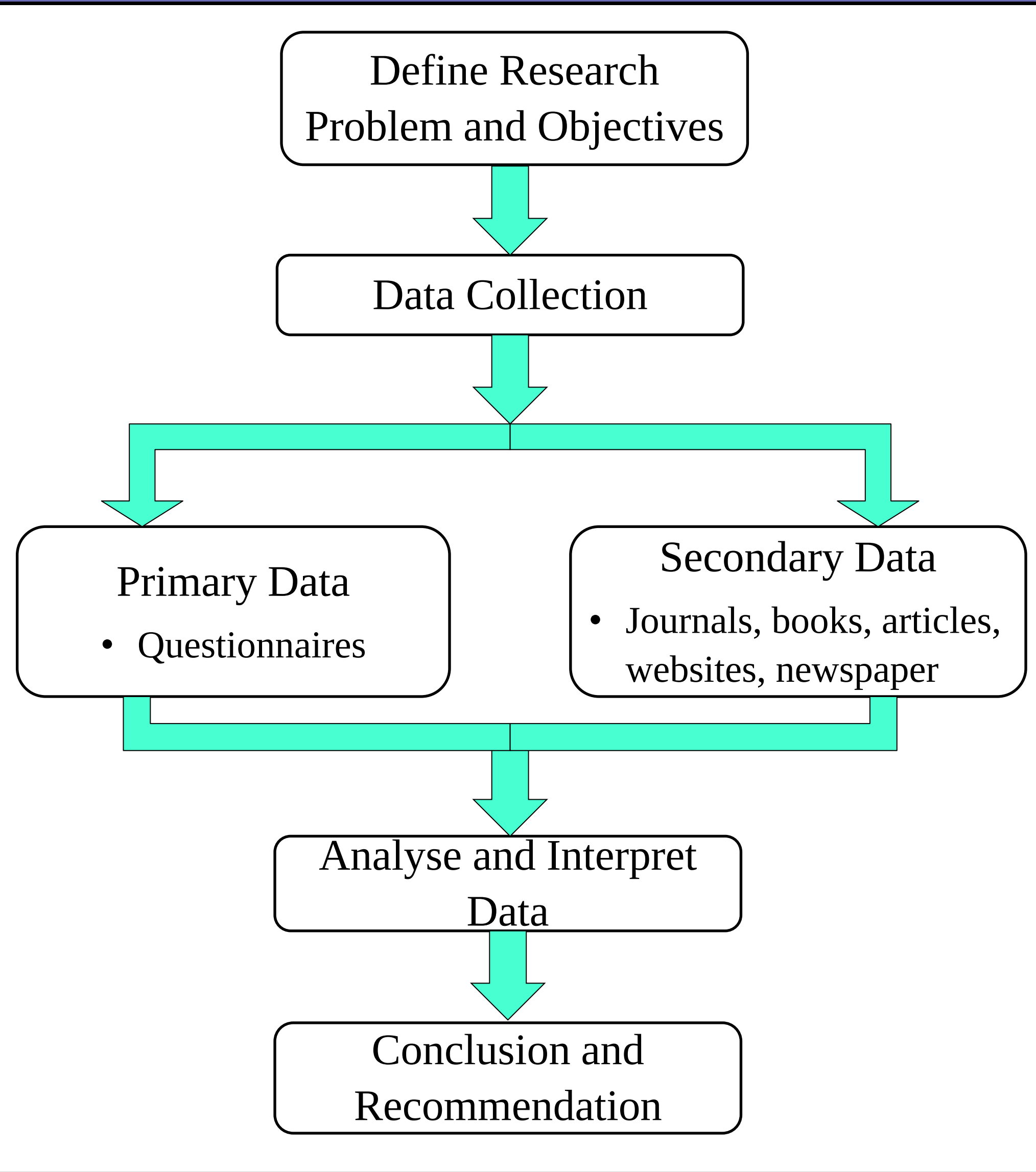
INTRODUCTION

Decision Support System (DSS) is developed to assist decision makers to make decision during different phases of flood mitigation project (Mirfenderesk, 2009). Many studies have been carried out, however, there are still massive floods happen due to perspective of its physical geographical characteristics of the location and DSS is not widely used. If this situation continues, it will lead to a serious problem as floods cause damages to agriculture, properties, and even increase in mortality rate. In conjunction with that, this research is conducted in order to determine the types of DSS implemented among organizations and the advantages of DSS.

OBJECTIVES

- To determine the types of Decision Support System (DSS) that has been implemented by the organizations that are dealing with the flood mitigation projects
- To identify the advantages of using Decision Support System (DSS) for flood mitigation projects

METHODS



CONCLUSION

It can be concluded that the application of DSS can be considered as the best option in making decisions that are related to the water resources issues. It is obvious that floods cannot be prevented thus an improved technology tools are required to forecast the possibility of flood to happen together with generating warning in order to minimize the potential losses.

RECOMMENDATION

Future Research

- Increase number of population
- Adapt in other industries

Increase Implementation of Using DSS

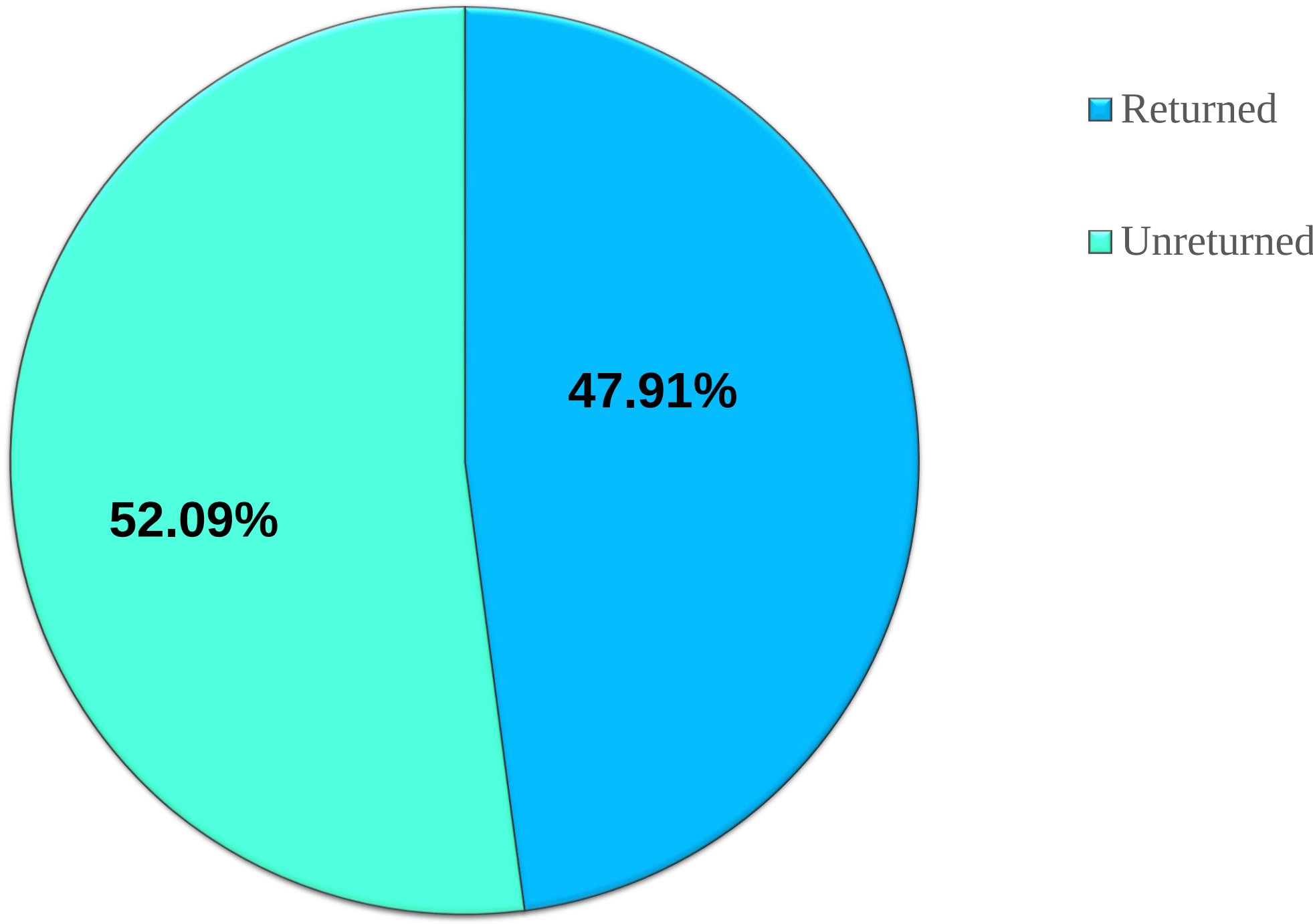
- Collaboration with government departments
- Decision Support System (DSS) seminar

RESULTS

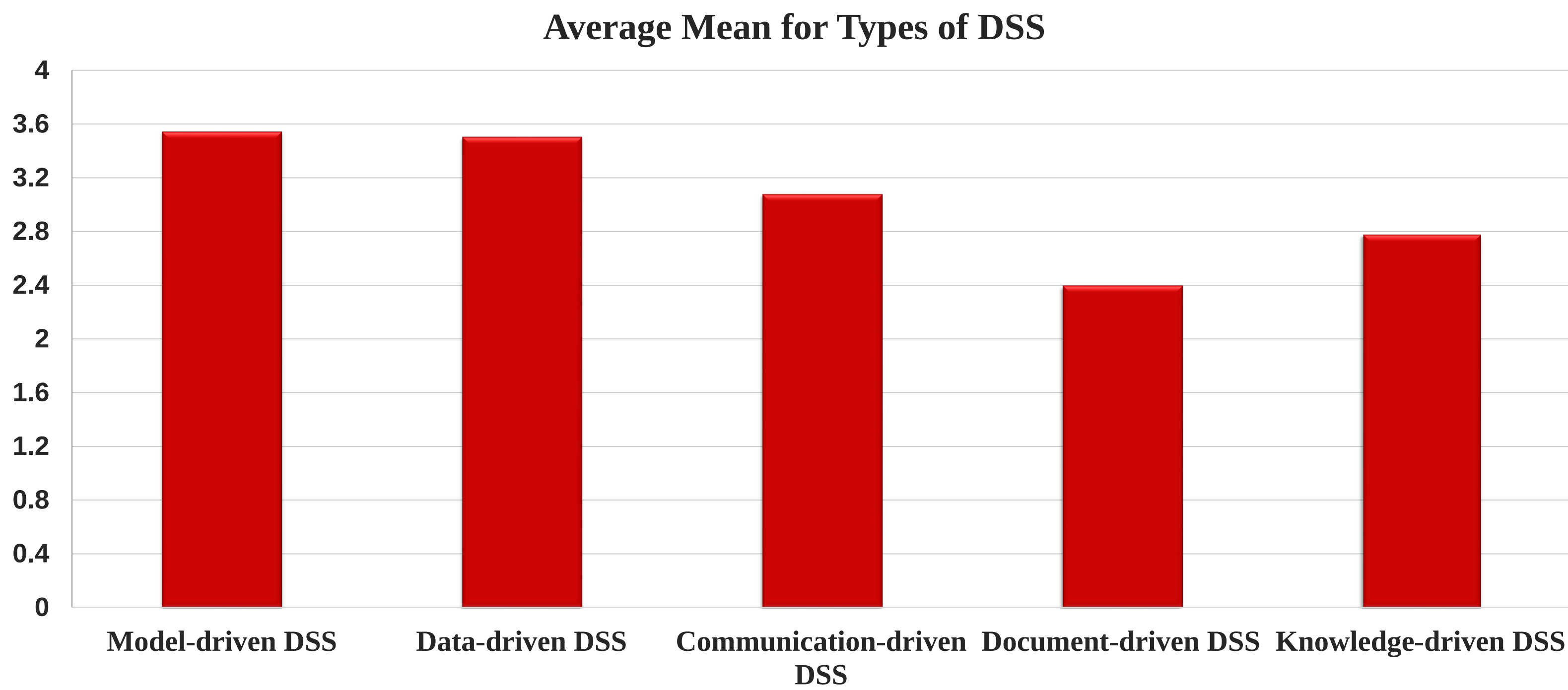
1) Response Rate

Response rate	Distributed	Returned
Total	215	103

- 103 out of 215 questionnaires were returned.
- The returned response rate is 47.91%.
- The responses have collected successfully from respondents as the target sample size has achieved.



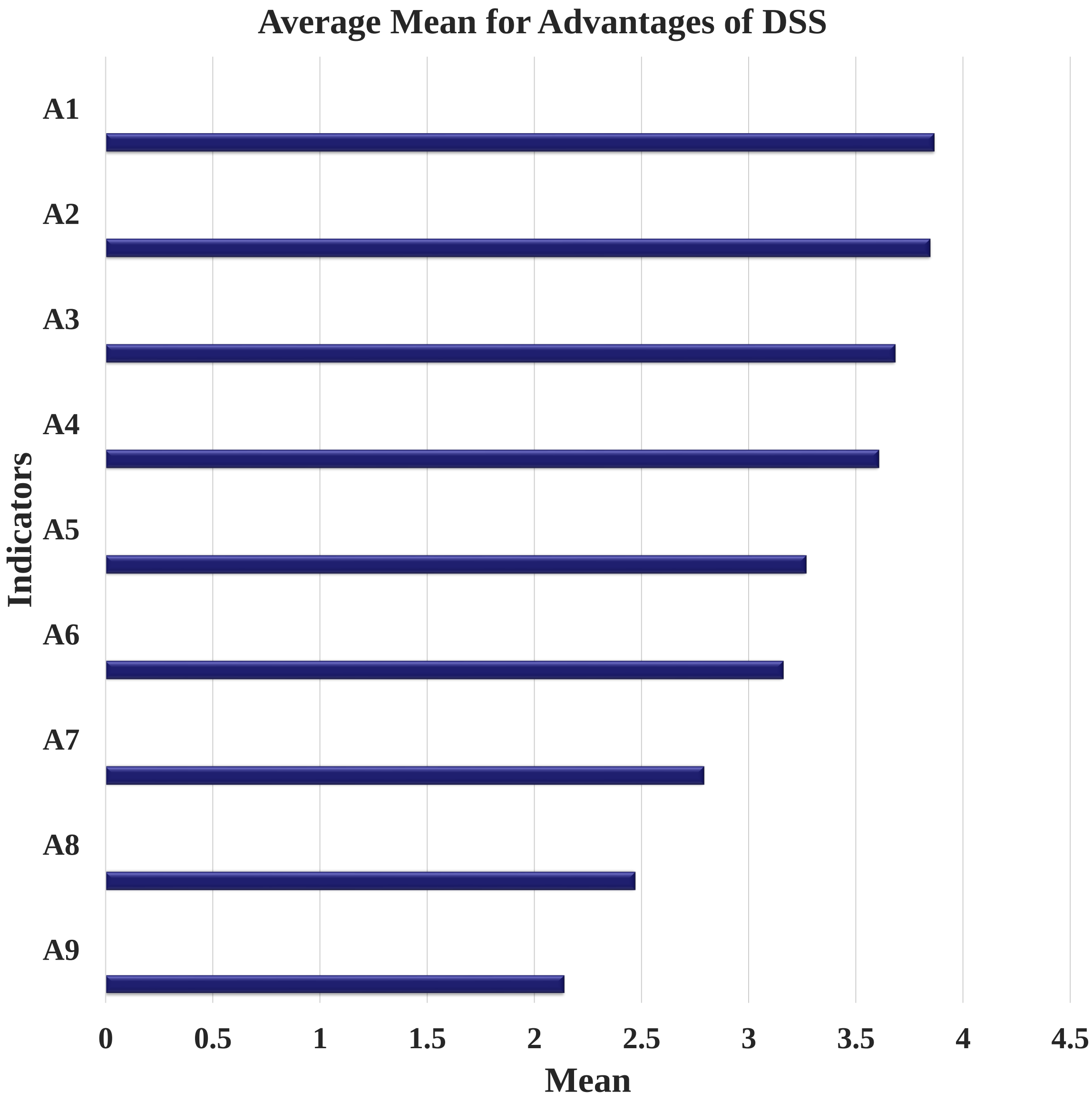
2) Types of Decision Support System (DSS)



- Model-driven DSS has the highest mean score 3.5437.
- Document-driven DSS has the lowest mean score 2.3981.
- It shows that model-driven has often implemented by the organization based on the range of average index method.

3) Advantages of Decision Support System (DSS)

No	Indicators	Statement	N	Mean
1	A1	Ability to generate timely warning	103	3.8641
2	A2	Comprehensive and capable in handling different stages of flood management	103	3.6796
3	A3	Information obtained from DSS is factual, accurate, consistent and reliable to use	103	3.6019
4	A4	DSS provides information that is quick to run and easy to use	103	3.1553
5	A5	DSS enables to produce outputs that allow the user to visualize impact of flood events on the area where they live	103	3.8447
6	A6	Provides virtual planning experience	103	3.2621
7	A7	The system can be flexible and reliable, restructuring to meet the different needs of the decision-maker	103	2.4660
8	A8	DSS allows users using face to face via online consultation to provide input into the decision making process	103	2.7864
9	A9	DSS protects intellectual of property right by implementing three aspects such as authentication, authorisation and auditing	103	2.1359



- Statement of “Ability to Generate timely warning” or A1 has the highest mean score with the value 3.8641.
- “DSS protects intellectual of property right by implementing three aspects such as authentication, authorisation and auditing” or A9 has the lowest mean score 2.1359.
- Based on the range of average index method, most of the organization agree to the statement A1.