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of Excellence

International Teaching Aid  
**Competition 2023**

Reconnoitering Innovative Ideas in Postnormal Times

**iTAC**

**2023**

**iTAC 2023**  
**INTERNATIONAL TEACHING AID COMPETITION**  
**E-PROCEEDINGS**

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Cover Design : *Asrol Hasan*

Layout : *Nurina Anis Mohd Zamri*

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## **PREFACE**

iTAC or International Teaching Aid Competition 2023 was a venue for academicians, researchers, industries, junior and young inventors to showcase their innovative ideas not only in the teaching and learning sphere but also in other numerous disciplines of study. This competition was organised by the Special Interest Group, Public Interest Centre of Excellence (SIG PICE) UiTM Kedah Branch, Malaysia. Its main aim was to promote the production of innovative ideas among academicians, students and also the public at large.

In accordance with the theme "Reconnoitering Innovative Ideas in Post-normal Times", the development of novel ideas from the perspectives of interdisciplinary innovations is more compelling today, especially in the post-covid 19 times. Post-pandemic initiatives are the most relevant in the current world to adapt to new ways of doing things and all these surely require networking and collaboration. Rising to the occasion, iTAC 2023 has managed to attract more than 267 participations for all categories. The staggering number of submissions has proven the relevance of this competition to the academic world and beyond in urging the culture of innovating ideas.

iTAC 2023 committee would like to thank all creative participants for showcasing their innovative ideas with us. As expected in any competition, there will be those who win and those who lose. Congratulations to all the award recipients (Diamond, Gold, Silver and Bronze) for their winning entries. Those who did not make the cut this year can always improve and join us again later.

It is hoped that iTAC 2023 has been a worthy platform for all participating innovators who have shown ingenious efforts in their products and ideas. This compilation of extended abstracts published as iTAC 2023 E-Proceedings contains insights into what current researchers, both experienced and novice, find important and relevant in the post-normal times.

Best regards,

**iTAC 2023 Committee**  
**Special Interest Group, Public Interest Centre of Excellence (SIG PICE)**  
**UiTM Kedah Branch**  
**Malaysia**

## **STAT DECISION STARTER KIT (SDSK) V1.0: STATISTICAL ANALYSIS DECISION MAKING**

Nurul Bariyah Ibrahim

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[baryiah@uitm.edu.my](mailto:baryiah@uitm.edu.my)

Shamsunarnie Mohamed Zukri

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[shamsunarnie077@uitm.edu.my](mailto:shamsunarnie077@uitm.edu.my)

Nor Hazreeni Hamzah

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[reeni683@uitm.edu.my](mailto:reeni683@uitm.edu.my)

Noor Zafarina Mohd Fauzi

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[zafarina@uitm.edu.my](mailto:zafarina@uitm.edu.my)

Nur Safwati Ibrahim

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[safwa541@uitm.edu.my](mailto:safwa541@uitm.edu.my)

Nur Elini Jauhari

Kolej Pengajian Pengkomputeran, Informatik dan Media, UiTM Cawangan Kelantan  
[elini027@uitm.edu.my](mailto:elini027@uitm.edu.my)

### **ABSTRACT**

Recently, statistics approaches become more popular because most of the decisions are based on the statistical analysis that are provided by a statistician as a decision maker. An exactly selected statistical analysis will generate a good decision making. However, not all the researchers have enough knowledge on how to choose the appropriate statistical analysis in the certain kinds of the data especially the beginners. Statistical analysis aids can assist and lead the researchers to conduct a valid and choosing the correct analysis because this tool perhaps can eliminate or at least reduce analysis errors. Later, the researchers can confidently make decision for their future research. Hence, a statistical application called SDSK v1.0 was created and built using Ionic Framework software by dint of these reasons. This application was released in the Google Play Store, and this innovation will be extremely beneficial to beginners, particularly in terms of cost and time savings. SDSK v1.0 is fitted with particular features that will assist the user, allowing the user to easily recognize the relevant statistical analysis. Aside from that, the user can utilize the application in a wide range of scenarios with little

statistical knowledge. In conclusion, since SDSK v1.0 can be access easily anywhere, it will allow and assists the decision makers to identify the appropriate descriptive statistics, representing the data into the graphical illustration and make a correct decision on the appropriate statistical test to be used in the analysis.

**Keywords:** decision method, SDSK v1.0, statistics and statistical analysis

## INTRODUCTION

In the process of data analysis, statistical analysis plays a very important role. However, not all of the researchers had prior knowledge of analysing statistical data. Statistical analysis aids in the reduction or elimination of errors, allowing researchers to confidently draw conclusions for further study. The SDSK v1.0 statistical application was developed. considering application software enables the user to achieve a particular objective or purpose. It was designed and constructed with the help of the software known as Ionic Framework with the intention of assisting beginners in exploring and describing the data. In addition, this application, make it easier for beginners to select the statistical analysis that is most relevant for their research. This application was recently made available in the Google Play store, and the technology behind it will prove to be of great use to novice users, in particular with regard to the savings in both money and time that can be realised.

## METHODOLOGY

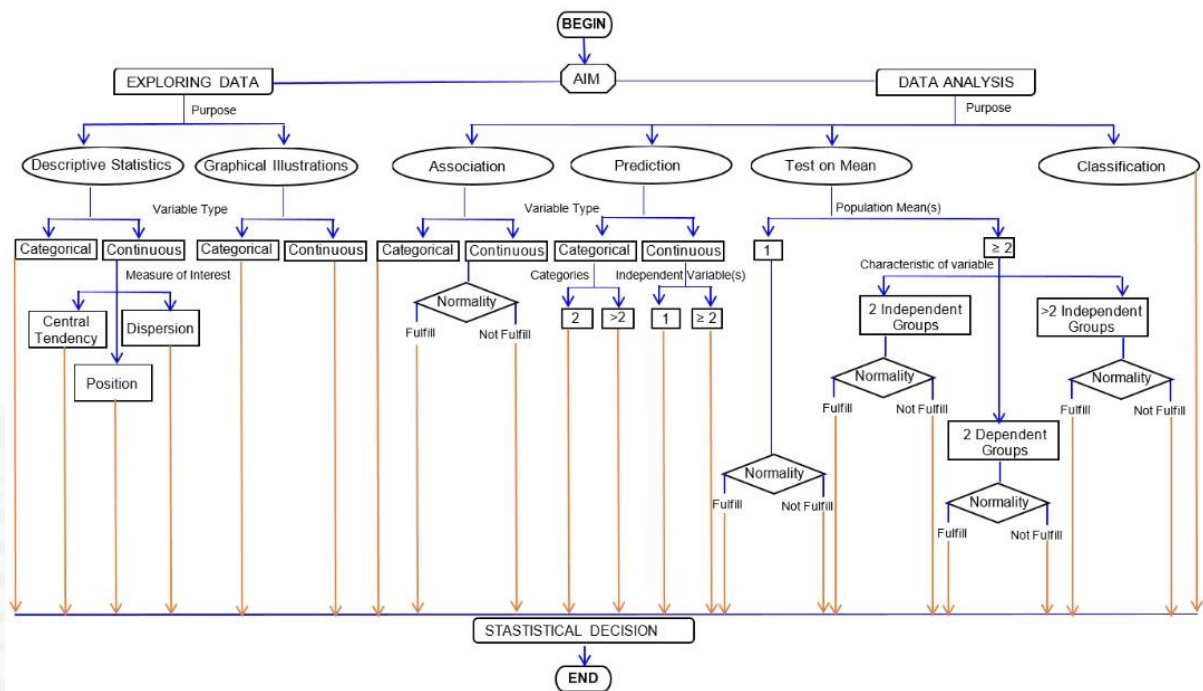
SDSK v1.0 can be considered as a decision support tool for researchers, especially the beginners to choose the appropriate statistical analysis in decision making. This project uses mobile application as a tool to run the application software as this implementation is the most convenient functionalities that people can access easily and make them amusing. The goals in developing this software application specifically to guide the beginner researchers to correctly choosing the best statistical method. In addition, this application can be use anywhere and anytime needed as long as you have mobile phone.

Figure 1 shows the traditional method of identifying the suitable statistical method.

Tasks	Conditions	Choice of significance test	
a) Producing descriptive summaries of the data	Categorical variable	frequency, percentage (row, column or total)	
	Continuous variable	summary value for the data set	mean, median, mode
		information on the variation among data values	variance, standard deviation, range
b) Producing a visual presentation of the data	Categorical variable	bar chart, clustered bar chart	
	Continuous variable	quartile, interquartile range, box and whisker plot	histogram, dot plot and scatter plot
		determine the position of a single value	quartile, interquartile range, box and whisker plot
c) Identifying the relationship between two variables	Categorical variables	Chi-square test independence	
	Continuous variables	variables are normally distributed	Pearson Product-Moment Correlation Coefficient
variables are not normally distributed		Spearman's Rank Correlation Coefficient	
d) Predicting the value for new occurrences	Categorical variable	two categories of dependent variable	Binary Logistic Regression
	more than two categories of dependent variable	Multinomial Logistic Regression	
e) Identification of the significance test on a mean	One population mean	one independent variable	Simple Linear Regression
		two or more independent variable	Multiple Linear Regression
f) Identification of the differences between means	Two independent groups	the variable is normally distributed	One sample t-test
		the variable is not normally distributed	Sign Test/ Signed Rank Test
	More than two independent groups	the variables is normally distributed	Two independent sample t-test
		the variables is not normally distributed	Mann Whitney Test
	Two dependent groups	the variables is normally distributed	One Way Analysis of Variance (ANOVA)
		the variable is not normally distributed	Kruskal Wallis Test
g) Classification of observation based on variable measured	Two or more groups of observation	the variables is normally distributed	Paired sample t-test
		the variable is not normally distributed	Wilcoxon Signed Rank Test

Figure 1. Traditional Method of Identifying Suitable Statistical Decision

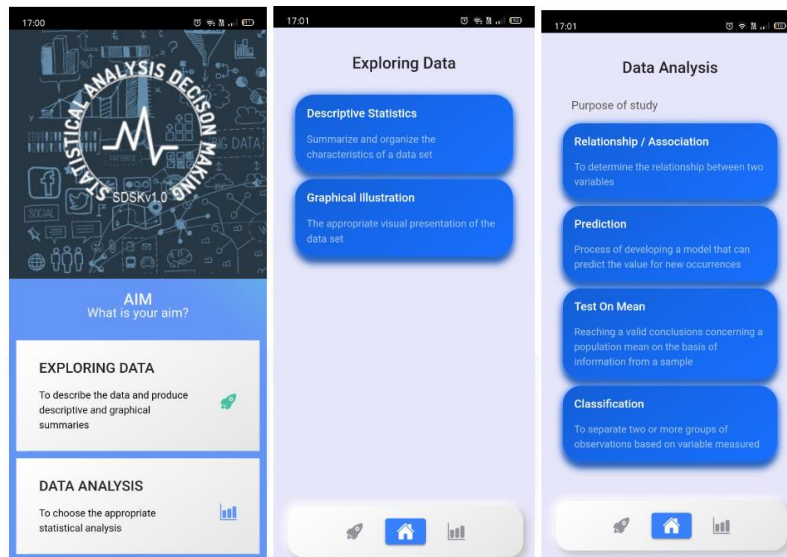
The circumstances motivate the researchers to proposed methodology for the development of this mobile application as shows in the statistical algorithm in Figure 2.



**Figure 2.** Algorithm of Statistical Decision

## RESULT AND FINDINGS

The innovation of Ionic Framework on the statistical method has led SDSK to be used to all users since now SDSK was already available in Google Play. The users just search the word of Stats Decision and then install the application (Stats Decision Starter Kit) if they need any favor in determine the right statistical technique should be used for their research. This friendly application has some interfaces. The interfaces of the application of SDSK was as shown in Figure 3. The users should know the aims of the research either for data exploration or for data analysis. There are two options in exploring data which for descriptive statistics and graphical illustration. While for data analysis, there are four options which are relationship/association, prediction, test on mean and classification.



**Figure 3.** Interfaces in SDSK

## CONCLUSION

SDSK v1.0 comes complete with comprehensive features that will be useful to the user and make it simpler for them to choose which statistical analysis is most applicable to their needs. In addition to that, the user just needs a basic understanding of statistics to make use of these applications in a variety of contexts. In line with the development of technology, the creation of the SDSK v1.0 application is seen to be able to help all groups that do not have a strong statistical foundation including students and researchers. SDSK has many advantages since it is easy to use regardless of time and place. Besides that, SDSK v1.0 is user-friendly because of cloud consultation. With the variety of benefits offered by SDSK v1.0, this software can attract the attention of users.



## REFERENCES

D. Wackerly, W. Mandenhall and R. Scheaffer: *Mathematical Statistics with Applications* (Dexbury Advanced Series, 2007). 7<sup>th</sup> ed.

S. Umar and B. Roger: *Research Method for Business* (Wiley, 2016). 7<sup>th</sup> ed.



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