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An Autonomous Institution, Affiliated to Bharathiar University, An ISO 9001:2015 Certified Institution,

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EMERGING TRENDS IN SCIENCE AND TECHNOLOGY (ETIST-2021)

27th October 2021

Jointly Organized by

Department of Biological Science, Physical Science and Computational Science

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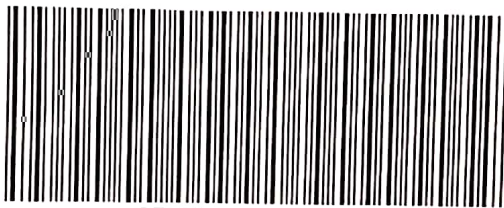
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A Primer Working Comparative Analysis on Android Operating System And I Phone Operating System in Mobile Phones-A Customers Perspective

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ABSTRACT:

Google's Android and Apple's IOS have been playing significant role in the Smartphone era . The smart mobile phones change our life to lead in more comfort zone. They help to perform different task of daily life on mobile phones in shorter time. Convenient money transfer, paying bills by using smart phones in few seconds and thereby saves a lot of time. Each Mobile phone has different options and features as involves different operating system. The present study has made comparison on IOS and Android operating system. This paper aims to highlight the differences between the two operating systems by comparing the core features and performance for both functionally identical mobile applications developed for each .The main motive to do a survey on both iPhone and Android Operating system. A comparative study is made to identify the consumer's preference towards the two most popular operating system and to analyse which operating system provided user's more satisfaction. Percentage analysis, ANOVA, t-test and Friedman Ranking was used to analyse the responses. Data has been collected from 150 respondents in Coimbatore city.The study found the Android operating system mobile phones are most preferred rather than IOS.

Keywords: *Mobile operating system, Android, IOS, mobile device core features and performance comparison.*

INTRODUCTION:

Today the world is moving towards rapid mobility by having smart phones in our hands. Now a days smartphones are transferred as replacement for the computers and laptops almost. The features of smart phones and performance based on the operating system and applications how they support. As we all major mobile operating systems are used like iOS, Android, Windows and Blackberry. The first two smartphones owns upto 92 percent of the total smartphone market share. With the increase in the demand and use of the smartphones security concern is a major issue now a days.The smart mobile phones made our life to lead in more comfort zone. They help to perform different task of daily life on mobile phones in shorter time.Convenient money transfer, paying bills by using smart phones in few seconds and thereby saves a lot of time. Each Mobile phone has different options and features as

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involves different operating system. The present study has made comparison on IOS and Android operating system. This paper aims to highlight the differences between the two operating systems by comparing the core features and performance for both functionally identical mobile applications developed for each. The main motive to do a survey on both iPhone and Android Operating system. The present paper has two main objectives first is to make a comparative study on both operating system and second objective is to analyse the core problems faced by the consumer's in this operating system. This study compares the consumers Satisfaction level and core problems faced by them in Android and iPhone operating system.

STATEMENT OF THE PROBLEM:

To identify the level of consumers satisfaction and core problems faced by the them in mobile operating system by comparing android and iOS operating system. In this present generation smart phones plays significant role. Android and iPhone is presently the world's most commonly used smartphones and in mobile technology. The research paper is to make users aware about the issues of these operating systems, what are the commination present in these operating systems and to identify the consumers most preferred operating system and their satisfaction. Based on the above discussion this study has focussed to find out the level of consumer's satisfaction and main problems faced by the them in mobile operating system by comparison of Android and IOS operating system. An attempt is made to identify the satisfaction level of the consumer's, and problems faced by them in android and iOS operating system and lastly to analyse which OS gave user's more satisfaction.

OBJECTIVE OF THE STUDY:

- ❖ To find out the consumer's satisfaction level on Android operating system and iPhone operating system in mobile.
- ❖ To study the problems faced by the consumer's on iPhone operating system and Android operating system.

REVIEW OF LITERATURE

Robert Györödi and Doina Zmaranda Vlad (2017) have studied "A Comparative Study between Applications Developed for Android and iOS" They found the differences between the operating systems by analysing core feature performance metrics for both functionally identical mobile applications developed for each platform. They concluded that iOS was clearly faster than Android with views and UI elements being drawn on the screen within the time frame limit to not cause user interface fluidity issues. The emulation process also proved to be much more efficient with iOS devices. **Ovidiu Constantin Novac, Mihaela Novac (2017)** have conducted a study on "Comparative Study of Google Android, Apple iOS and Microsoft Windows Phone Mobile Operating Systems". The study is analysed the based on the features of the operating system. They study concluded that 70 percent of consumers prefers iPhone for security purpose. **Aditya Sahani (2017)** has studied "Android v/s IOS – The Unceasing Battle" The objective of the study is to focus on the security system. He has Compared and analysed both the operating systems by factors such as security, file transfer, updates and some other features helps us to identify the key differences on both the operating system and the author gives a brief idea about the vulnerabilities and malware attacks on both Android and IOS. He concluded that Android is found better in security system. **K. Divya S. Venkata Krishna Kumar (2016)** studied "Comparative analysis of smart phone operating system ANDROID, APPLE iOS

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AND WINDOWS". The Objective of the study is to produce a comparative study on smart phone operating systems Android, iOS, Windows. The major mobile operating systems are Android from Samsung, iOS from Apple and Windows from Microsoft Technology has been selected to compare the features of these Operating system's two Statistical Tools were used by the Researchers . Android is found 80.7% and is the best smart phone operating according to there research. **Lena Reinfelder and Zinaida Benenson(2014)** have studied "Differences between Android and iPhone users in their security and privacy awareness". Based on an online survey conducted with over 700 German respondents (mostly university students) study found out that Android users seem to be more aware ofthe risks associated with the app usage than iPhone users. **Ahmed Ali studied ("2014")**"A Review of Different Comparative Studies on Mobile Operating System". The objective of this study is to discuss different technologies used with different mobiles in the market. Methodology used in this study ,there stated as there are aiming to review different mobile operating systems used in different mobile phones.For this purpose, there have studied different papers related to mobile operating system and there provided a brief review of these studies.

METHODOLOGY FOR THE STUDY:

The data collected from questionnaire and Secondary data (Journals, magazines and websites). Convenience sampling method is adopted for Sampling technique. The study has analysed 150 Respondents sample size .Coimbatore city is selected as Area of study for the period of December 2020 to March 2021.The present study has used Percentage analysis, Friedman rank test, t-Test and ANOVA Statistical tools for analysis purpose.

ANALYSIS OF ANDROID AND IOS

A comparative study on Customers Satisfaction towards Android Operating system and iPhone Operating system in Mobile Phones is conducted based on sample of 150 respondents. The data collected and tabulated and the further statistical measures are also employed in fulfilling the objectives of the study.

OPERATING SYSTEM PREFERRED BY THE RESPONDENTS

Table 1 shows the Mobile operating system preferred by the Respondents.Of the 150 respondents, 109 respondents have preferred Android operating system.The result shows that 27.3% of the respondents prefer iPhone operating system and 72.7 % of the respondents prefer Android operating system.Majority of the respondents prefer Android.

Table 1
Operating System Preferred by the Respondents

Operating system	No. of the Respondents	Percentage
IOS	41	27.3
Android	109	72.7
Total	150	100.0

SOURCE OF DATA: Primary data

OPERATING SYSTEM PREFRRD BY THE RESPONDENTS AND SATISFACTION LEVEL OF THE RESPONDENTS ON IOS AND ANDROID OPERATINGSYSTEM

Table 2
OS PREFERRED BY THE RESPONDENTS

Operating system	Mean	Std. Deviation
IOS	2.17	.819
ANDROID	2.34	.819

SOURCE OF DATA: Computed data

Mean score were found out for each operating system. The highest mean score is 2.34 for ANDROID. The lowest mean score is 2.17 for IOS.

t-test for Equality of means

Sig.	T	Df
.978	-1.160	148
	-1.161	72

*Significant at 5 per cent level

T-Test is applied to find the difference between Operating systems preferred by the respondents. The Sig. value (.978) is greater than the 0.05 value. Hence there is a no significant in respondents preferred OS. Hence the null hypothesis is accepted.

MOBILE OPEARTING SYSTEM THAT FREEZES AND CRASHES MORE.

Table 3 shows the Mobile Operating System Freezes and Crashes more. Of the 150 respondents, 114 respondents have opted Android operating system. The result shows that 24% of the respondents chosen iPhone operating system and 76 % of the respondents chosen Android operating system. Majority of the respondents chosen Android operating system.

Table 3
Mobile Operating System Freezes and Crashes

Operating system	No .of the Respondents	Percentage
IOS	36	24.0
Android	114	76.0
Total	150	100.0

SOURCE OF DATA: Primary data

OPERATING SYSTEM FREEZES OR CRASHES MORE STATED BY RESPONDEMENTS AND SATISFACTION LEVEL OF THE RESPONDENTS ON IOS AND ANDROID OPERATING SYSTEM.

Table 4
Operating System that Freezes and Crashes More

Operating system	Mean	Std. Deviation
IOS	2.64	.840
ANDROID	2.19	.786

SOURCE OF DATA: Computed data

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Mean score were found out for each operating system. The highest mean score is 2.64 for ANDROID.

The lowest mean score is 2.19 for IOS.

t-test for Equality of means

Sig.	T	Df
.958	2.962	148
	2.862	55

*Significant at 5 per cent level

T-Test is applied to find the difference between Operating System that Freezes And Crashes More.

The Sig. value (.958) is greater than the 0.05 value. Hence there is a no significant in respondents stated problem in both OS. Hence the null hypothesis is accepted

MOBILE OPERATING SYSTEM WITH ADVANCED BACKUP OPTION

Table 5 shows the operating system with Advanced backup chosen by the respondents.of the 150 respondents,81 respondents have opted IOS as it has Advanced backup option. The result shows that 54% of the respondents chosen iPhone operating system and 46% of the respondents chosen Android operating system. Majority of the respondents chosen I OS.

**Table 5
Advanced backup option**

Operating system	No. of the Respondents	Percentage
IOS (I cloud)	81	54.0
Android (Backup & Restore)	69	46.0
Total	150	100.0

SOURCE OF DATA: Primary data

SATISFACTION LEVEL OF THE RESPONDENTS ON IOS AND ANDROID OPERATING SYSTEM IN BACKUP OPTION

**Table 6
Os With Advanced Backup Option**

Operating system	Mean	Std. Deviation
IOS	2.34	.695
ANDROID	2.28	.888

SOURCE OF DATA: Computed data

Mean score were found out for each operating system. The highest mean score is 2.34 for IOS.

The lowest mean score is 2.28 for ANDROID.

Sig	T	Df
.503	1.831	148
	1.847	148

*Significant at 5 per cent level

T-Test is applied to find the difference between Operating systems with advanced backup option stated by the respondents. The Sig. value (.503) is greater than the 0.05 value. Hence there is a no significant in respondents stated problem in both OS.Hence the null hypothesis is accepted.

MOBILE OPERATING SYSTEM WITH MORE CONNECTIVITY ISSUES

Table 7 shows shows operating system with connectivity issues stated by the respondents..Of the 150 respondents,94 respondents have opted IOS as it has More Connectivity Issues. The result shows that 62% of the respondents chosen iPhone operating system and 37% of the respondents chosen Android operating system. .Majority of the respondents chosen I OS.

Table 7
Mobile Operating System With More Connectivity Issues

Operating system	No. of. Respondents	Percentage
Android	32	37.0
IOS	94	62.0
Total	150	100

SOURCE OF DATA: Primary data

SATISFACTION OF THE RESPONDENTS ON IOS AND ANDROID OPERATING SYSTEM IN CONNECTIVITY ISSUES IN OPERATING SYSTEM

Table 8
Connectivity Issues In Operating System

Operating system	Mean	Std. Deviation
IOS	2.34	.695
ANDROID	2.28	.888

SOURCE OF DATA: Computeddata

Mean score were found out for each operating system. The highest mean score is 2.34 forIOS.

The lowest mean score is 2.28 for ANDROID.

t-test for Equality of means

Sig	T	Df
.070	.468	147
	.497	137.097

*Significant at 5 per cent level

T-Test is applied to find the difference between Connectivity issues in iOS and Android operating system . The Sig. value (.070) is greater than the 0.05 value. Hence there is a no significant in operating system.Hence the null hypothesis is accepted

FRIEDMANS RANK TEST

The Table explains the Problems Faced by The Consumer's On IOS and Android.The second objective is stated as to find out the problems faced by the consumer's on IOS and Android operating system according to that objective I had Framed the Ranking Questions and using non-parametric testand K-Independent Sample is applied to calculated the percentage for rankingstatement.

Table 9

problems faced by the consumer's on IOS and Android operating system

FACTORS	MEAN RANK	RANKING
Storage problem	2.89	1
Anti-virus problem	3.29	2
Life of the Battery	3.88	3
Data sharing problem	4.31	4
Non Removable battery complaints	4.86	5
Overheat problem	5.23	6
Forget password	5.77	7
Sensor problem	5.79	8

Test Statistics

N	150
Chi-Square	212.107
D f	7
Asymp .Sig.	.000

The shows that the problems face by the respondents. first rank has been given to Storage problem (2.89) second rank has been revealed to Anti-virus problem (3.24),Third rank has been identified to Battery Life, Fourth rank has been given to Data sharing problem (4.31), fifth rank has been given to problem of Non Removable battery(4.86), Sixth rank has been identified to Overheating(5.23),Seventh rank has been revealed to Forget password(5.77) and Sensorproblem has been given as Eighth rank (5.79).

SUMMARY OF FINDINGS

- In this comparative study 72% of the respondents owing android phone because iOS price in comparatively higher than androidphone.

- Respondents stated that Android operating system is Freezing or crashing more compared to IOS operatingsystem.
- Android operating system have more Connectivity issues then iOS.
- Occasional security updates. Security threats rare, because iOS is locked and downloading apps out of the App Store is complicated. When I compared the both iPhone and Android operating system security thread of iPhone operating system is higher then AndroidIOS.
- Android file transfer is Easier than iOS .Using USB port and Android File Transfer Photos can be transferred viaUSB without apps in Android OS but in iOS we need apps for file transfer it is more difficult to transfer files in iOS . Media files can be transferred only through iTunes desktop it as considered often problem faced by the IOSusers.
- In Android operating system Available language(s) are100+ but in IOS 34 Languages only available it as considered often problem faced by the IOS users. It is very big disadvantage in iPhone operatingsystem.
- The iPhone operating system has advanced backup option IOS(I Cloud) compared to Android (Backup & Restore).54% of android users also stated that IOS has advanced backupoption.
- Most of the businessmen prefers only iPhone operating system because for security purpose compared to Android operating system. Data's are more securable only in iPhone operatingsystem.

CONCLUSION:

After all the study and the above discussion and the surveys, we conclude that iOS mobile operating system of Apple Inc. provide more security by supporting its Sandbox architecture (iCloud) for the apps. Thus providing more confidentiality to the user data. Apple is also gaining the trust of its user through these functionalities. Also the increase in market revenue of Apple Inc. is due to their devices which offer high security to the user data. Android developers and Google Inc. have a lot of work to do on it so that they can compete with apple devices. Android and iOS have the major shares in the market. Android is being user friendly, customizable and cheap compared to iOS.iOS on the other hand can be improved on the side of user customization by providing more customization and power at the user level. In this paper, comparision is made with the two operating systems. We think that Android is a better operating system than iOS because of the following reasons: It is more customizable as compared to iOS and thus allows design creativity within users and Android app developers. It allows users to install 3rd party applications which are not allowed in iOS. Although some security issues still remain, Android goes to great extents to secure the data of the users. Consequently, the developed performance tests and their results can be used to anticipate where the slow or inefficient parts of the application will be on eachdevice.

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