

**A COMPARITIVE STUDY ON ANDROID AND iOS OPERATING SYSTEM WITH
REFERENCE TO MOBILE OPERATORS**

MASTER OF BUSINESS ADMINISTRATION

by

ASHISH KUMAR SHARMA

Register No.40410023



SCHOOL OF MANAGEMENT STUDIES

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

**Accredited with Grade "A" by NAAC I 12B Status by UGC I
Approved by AICTE**

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600 119

APRIL 2022



www.sathyabama.ac.in

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited with Grade “A” by NAAC | 12B Status by UGC | Approved by AICTE

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600119

SCHOOL OF BUSINESS ADMINISTRATION

BONAFIDE CERTIFICATE

This is to clarify that this project report is the Bonafede work of Ashish Kumar Sharma (40410023) who has done this project work entitled **A COMPARITIVE STUDY ON ANDROID AND iOS OPERATING SYSTEM WITH REFERENCE TO MOBILE OPERATORS** under my supervision from December 2021 to May 2022.

Dr. John Britto

Internal guide

Dr. Bhuvaneshwari

Dean – School of Business Administration

Submitted for Viva voice Examination held on_____.

Internal Examiner

External Examiner

DECLARATION

I **Ashish Kumar Sharma 40410023** hereby declare that the Project Report entitled “**A COMPARITIVE STUDY ON ANDROID AND iOS OPERATING SYSTEM WITH REFERENCE TO MOBILE OPERATORS)**” done by me under the guidance of Dr. JOHN BRITTO MBA, MPhil, PhD. Assistant Professor, School of Business Administration is submitted in partial fulfilment of the requirements for the award of Master of Business Administration degree.

DATE: APRIL 2022

PLACE: CHENNAI

NAME: Ashish Kumar Sharma

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my sincere thanks to **Dr. G. Bhuvaneswari, Dean - School of Management Studies** and **Dr. A. Palani, Head - School of Management Studies** for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Project Guide **Dr. JOHN BRITTO** for his valuable guidance, suggestions and constant encouragement paved way for the successful completion of my project work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **School of Management Studies** who were helpful in many ways for the completion of the project.

ASHISH KUMAR SHARMA

TABLE OF CONTENTS

CHAPTER NO.	TITLE	PAGE NO
	ABSTRACT	
	LIST OF TABLES	
	LIST OF CHARTS	
1	INTRODUCTION	1
	1.1 Introduction	1
	1.2 Industry Profile	4
	1.3 Company Profile	8
	1.4 Need for the Study	20
	1.5 Scope and Significance of Study	20
	1.6 Objectives of the Study	20
	1.7 Limitations of the Study	21
2	REVIEW OF LITERATURE	22
3	RESEARCH METHODOLOGY	25
4	DATA ANALYSIS AND INTERPRETATION	31
5	FINDINGS, SUGGESTIONS AND CONCLUSION	58
	ANEXURE	

Abstract:

Google's Android and Apple's iOS have been the frontrunners in the Smartphone era that we have been witnessing. Since the past 5 years we have seen revolutionary changes in the usage of mobile phones. Apple with its iPhone series created ripples in the market but in 2007 Android OS launched by Google challenged the dominance of Apple iOS.

Further we have seen the smart phone market was fueled by youth who have preference for innovations. They are the ones who have been downloading various Apps and fueling the growth of such phones. A comparative study was done keeping this in mind to identify the consumer's preference towards the two most popular OS. An attempt is made to identify various factors that influence purchase decision between them and lastly to analyze which OS gave user's more satisfaction.

The research carried out in this area helped us know the challenges faced by the marketer for reaching its target audience and the challenges faced by the customer while judging the brand during purchase.

LIST OF TABLES

Table no.	Particulars	Page no.
4.1	Respondents based on age	31
4.2	Respondents based on gender	32
4.3	Respondents based on qualification	33
4.4	Respondents based on employment status	34
4.5	Respondents based on income level	35
4.6	Respondents based on usage of operating system	36
4.7	What will you take into consideration before selecting your operating system	37
4.8	Operating system freezes or crashes more	38
4.9	Operating system have a better backup option	39
4.10	Mobile operating system has more compatibility issues	40
4.11	Ranking statement for both android and iOS operating system	41
4.12	Operating system do you feel value for money	42
4.13	Overall performance of android operating system	43
4.14	Overall performance of iOS operating system	44
4.15	Rating of android operating system on user interface	45
4.16	Rating of iOS operating system on user interface	46
4.17	Rating of android operating system on multi-tasking	47
4.18	Rating of iOS operating system on multi-tasking	48
4.19	Opinion of respondents which operating system has the better battery life management	49
4.20	How user friendly is an iOS	50
4.21	How user friendly is an android	51
4.22	Best features of android operating system	52
4.23	Best features of iOS operating system	53
4.24	Which operating system offers better software updates	54
4.25	What are the specific features you like in specific operating system	55

CHAPTER 1: INTRODUCTION

INTRODUCTION:

The two major smart phone market players are IOS and Android operating system. With the usage of mobile phone, the mobile technology is also developing day to day. The mobile phone has made our life to live in more comfort zone. We can perform different tasks of our daily life on mobile phones in few seconds. We can do money transfer, pay electricity bills by using smart phones in few seconds it saves a lot of time. When a customer goes to market to buy a mobile phone, he has multiple options to choose and he gets confused when he sees number of mobile phones launched by various companies. Each Mobile phone has different features and use different operating system. In this study 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 system. Our main motive to do a survey on both iPhone and Android Operating system. In that I have taken two main objectives first is to make a comparative study on both operating system and second objective is to analyze the core problems faced by the consumers in this operating system.

Today's mobile devices are multi-functional devices capable of hosting a broad range of applications for both business and consumer use. Like a computer operating system, a mobile operating system is the software platform that determines the functions and features available on your device, such as touchwheel, keyboards, wireless security, and synchronization, messaging and more. Some of the more common and well-known Mobile operating systems are Google's Android and Apple's IOS because of their Popularity we are going to talk about these two operating systems which are commonly seen in market and then compare them with each other.

There is no doubt that the use of the internet and mobile technology has deeply influenced our lives. Mobile commerce (m-commerce) has emerged through the existence of mobile phones and personal devices such as Personal Digital Assistants (PDA) and tablets. M-

commerce refers to electronic commerce transactions conducted via mobile phones and it is a relatively new area of research, which has a potential for rapid growth and wide extension. M-commerce has some core characteristics that differentiate it from classic e-commerce. These include ubiquity, personalization, flexibility, dissemination, convenience, instant connectivity and location-specific services. These features, which are specific to mobile platforms, provide important advantages for m-commerce.

Mobile users prefer to use mobile applications rather than browsers to access mobile services. Application markets have grown rapidly as a result of vesting user interest in mobile applications. Our study focuses on measuring and analyzing user perceptions of mobile applications and explores how operating systems being used affect user preferences.

India has been witnessing a revolution in the smartphone market. Android and iOS are two major OS who have been fighting out in the market for the big bite. Indian Mobile market has been traditionally dominated by Nokia. But later on, with emergence of Smartphones the Nokia got left behind in the race. And it was Blackberry's and iPhone's who catches up. All the flimflams and excitement about the costlier iPhones and Blackberry's vanished, after the arrival of the most anticipated, open-source mobile operating system, the Google Android, which is fated to turn the industry upside down. Despite the growth and popularity for iPhones and Blackberry's, it is predicted that, Android will make a history in sales and on acquiring the market share, slicing down the markets of both Symbian's and iPhones. Open Handset Alliance (OHA) a confederation of 50 Telecoms, mobile hardware, and software companies, headed by Google, and was found on 5th of November, 2007. The consortium's goal is deployed, the advanced open standards for mobile devices. Android is an open-source mobile OS platform, purely based on the Linux operating system.

Android is a software stack for mobile devices that includes an operating system, middleware and key applications launched by Google in 2007 and came as a threat to other leading operating systems like apple iPhone due to which apple had to undergo extensive research and

thus launched apple iPhone 4&4S which has better user interface and more easily downloadable applications. This continuous rivalry is the main area of research which effect consumer buying behavior while selecting a brand.

Apple may have been catching all the headlines with its revolutionary iPhone. But history could remember Google as the company that really turned the mobile phone sector on its head in 2007-08. It came up with first open handset alliance operating system – Android. Android entered the market and captured a great market share of 27% in just two years.

We cannot deny the fact the apple iPhone is the best marvel ever made in the field of technology. It is very true that other businesses always learned from apple and today apple toughest emerging competition is Android. We would like to carry out research in the area of competitive analysis where in upper middle class and upper-class segment of people will be targeted.

What is Android

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Google Inc. purchased the initial developer of the software, Android Inc., in 2005. Android's mobile operating system is based on the Linus kernel. Google and other members of the open handset alliance collaborated on android's development and release.

The Android Open-Source Project (AOSP) is tasked with the maintenance and further development of Android. The Android operating system is the world's best-selling smartphone platform.

Android has a large community of developers writing applications ("apps") that extend the functionality of the devices. There are currently over 200,000 apps available for Android. Android market is the online app store run by Google. Developers write primarily in the java language, controlling the device via Google-developed Java libraries.

The Android open-source software stack consists of java application running on a Java-based object-oriented application framework on top of Java core libraries running on a Dalvik virtual machine featuring JIT compilation. Libraries written in C include the surface manager, Open Core media framework, SQ Lite relational database management system, OpenGL ES 2.0 3D graphics API, Web Kit layout engine, SGL graphics engine, SSL, and Bionic lib. The Android operating system, including the Linux kernel, consists of roughly 12 million lines of code including 3 million lines of XML, 2.8 million lines of C, 2.1 million lines of Java, and 1.75 million lines of C++. The Android operating system is used on Smartphone's, netbooks, tablets, Google TV, and other devices.

Android Market

Android Market is an online software store developed by Google for Android devices. An application programs ("app") called "Market" is preinstalled on most Android devices and allows users to browse and download apps published by third-party developers, hosted on Android Market. Users can also search for and read detailed information about apps from the Android Market website.

Android market is one source for the users to get applications for their devices with ease and provides them with full information on its usage. It is well developed store which categorizes every application for the simplicity of users and to provide them with maximum utility.

Apple iOS

iOS is Apple's mobile operating system. Originally developed for the iPhone, it has always extended to support other Apple, Inc. devices such as the iPod touch, iPad and Apple TV. Apple, Inc. does not license iOS for installation on third-party hardware. As of May 31, 2011, Apple, Inc.'s App Store contains more than 500,000 iOS applications, which have collectively been downloaded more than 15 billion times. In the last quarter of 2010, it had a 26% share of the smartphone operating system market in terms of units sold, behind Google's Android and Nokia's Symbian. As of May 2010, it accounted for 59% of mobile web consumption—including both the iPod Touch and the iPad.

Apple iOS Store

The Apple/iOS App Store is a digital application distribution platform for iOS developed and maintained

by Apple. The service allows users to browse and download applications from the iTunes Store that were developed with the iOS SDK or Mac SDK and published through Apple Inc. Depending on the application, they are available either for free or at a cost. The applications can be downloaded directly to a target device, or downloaded onto a PC or Mac via iTunes. 30% of revenue from the store goes to Apple, and 70% go to the producer of the app.

Apple iOS v/s Google Androids

Android and iOS are very similar. They both are based hugely on their massive application support and media. Digging beyond the skin and deep into the guts of the operating systems, they begin to differ some, but for what most of the people purchasing them are going to use them for, they will serve the exact same purpose.

Apple's iOS is and always will be based on simplicity. You pick up an iPhone for the first time and you already

know how to use it. Minutes after you purchase the phone, you scavenge the App Store for the best applications and all of the ones your friends told you to download. This is where some of those differences come into play. Not only is the iPhone simple to use, but most of the applications in the App Store are visually beautiful. iOS is largely a media-driven operating system and the App Store and users have a higher expectation of graphics and visuals in their applications.

Android, however, is not there yet. It is an open-source operating system and the Android Market is much more susceptible to low-quality applications and applications with horrendous graphics. Google's Android was built with openness in mind. One word describes the major difference between the two mobile platforms, customization.

Now there are a lot of comparative studies done in the past with the customer's perspective wherein when one looks for a new smartphone, choosing an iPhone or Android phone isn't a simple task. While both phones offer a lot of great features, they may seem so similar that it's hard to distinguish between them. If you look closely, though, you'll find that there are some key differences.

A few of those differences are examined Hardware is the first place that the differences between the iPhone and Android become clear. Apple is the only company that makes iPhones, giving it extremely tight control over how the software and hardware work together. On the other hand, Google offers its Android software to many phone makers (Samsung, HTC, LG, and Motorola, among others, offer Android phones). As a result, Android phones vary quite a bit in size, weight, features, user experience, and quality.

OS Compatibility when we Look towards it we Find iPhone as to be Number One Choice and Android is a Slow Mover in this

Apps

Selection vs. Control While the iPhone App Store offers about the same number of apps as Google Play—around 9000,000 (as of June 2013) --overall selection isn't the only factor. Apple is famously strict (some might say unpredictable) about what apps it allows and how it changes its policies, while Google's standards for Android are somewhat more lax.

Gaming

A Growing Giant The iPhone has changed the way games are played. The iPhone has rapidly become a major player in the mobile video game market, with tens of thousands of great games. The growth of the iPhone as a gaming platform, in fact, has led some observers to forecast that Apple is well on its way to eclipsing Nintendo and Sony as the leading mobile game platform.

User Experience

Elegance vs. Customization People who like complete control over the customization of their phones, and want to be able to fiddle the lowest level functions, will prefer Android

thanks to its greater openness (one downside of this, though, is that each company that makes Android phones can tweak them, sometimes replacing default Android apps with inferior tools developed by that company). Android customization can also require some complex technical skills that the average person rarely has.

VERSION HISTORY:

ANDROID

Android is updating day by day since its release. These updates to the base operating system mainly focusing on fixing bugs as well as adding new features to provide more comfortable environment. Generally, each new version of the Android operating system is developed under a code name based on a dessert item. Past updates included Cupcake and Donut. The most recent released versions of Android are:

2.0/2.1 (Eclair), which revamped the user interface and introduced HTML5 and Exchange ActiveSync 2.5 support.

2.2 (Froyo), which introduced speed improvements with JIT optimization and the Chrome V8 JavaScript engine, and added Wi-Fi hotspot tethering and Adobe Flash support

2.3 (Gingerbread), which refined the user interface, improved the soft keyboard and copy/paste features, and added support for Near Field Communication

3.0 (Honeycomb), a tablet-oriented release which supports larger screen devices and introduces many new user interface features, and supports multicore processors and hardware acceleration for graphics. The Honeycomb SDK has been released and the first device featuring this version, the Motorola Xoom tablet, went on sale in February 2011. Google has chosen to withhold the development source code, which calls into question the "openness" of this Android release. Google claims this is done to eliminate manufacturers putting a tablet-specific OS on phones, much like the previous autumn, where tablet manufacturers put a non-tablet optimized phone OS (Android 2.x) on their Tablets resulting in bad user experiences. **4.0 (Ice Cream)**, a combination of Gingerbread and Honeycomb into a "cohesive whole. This version had new features added to the

Smartphone's Such as photo enhancements, offline email searching, facial recognition unlocks, network data, and usage monitoring.

4.0 (Ice Cream Sandwich) is a version of the Android mobile operating system developed by Google. Unveiled on October 19, 2011, Android 4.0 builds upon the significant changes made by the tablet-only release Android 3.0 "Honeycomb", in an effort to create a unified platform for both smartphones and tablets, whilst simplifying and modernizing the overall Android experience around a new set of human interface guidelines. As part of these efforts, Android 4.0 introduced a new visual appearance codenamed "Hollo", which is built around a cleaner, minimalistic design, and a new default typeface named Roboto.

4.1,4.2,4.3(Jelly Bean)is the name given to three major point releases of the Android mobile operating system developed by Google, spanning versions between 4.1 and 4.3.1.The first of these three, 4.1, was unveiled at Google's/Developer conference in June 2012, focusing on performance improvements designed to give the operating system a smoother and more responsive feel, improvements to the notification system allowing for "expandable" notifications with action buttons, and other internal changes. Two more releases were made under the Jelly Bean name in October 2012 and July 2013 respectively, including 4.2—which included further optimizations, multi-user support for tablets, lock screen widgets, quick settings, and screen savers, and 4.3—contained further improvements and updates to the underlying Android platform.

4.4 (KitKat)is a version of the Android mobile operating system developed by Google. Google announced Android 4.4 KitKat on September 3, 2013. Although initially under the "Key Lime Pie" ("KLP") codename, the name was changed because "very few people actually know the taste of a key lime pie." Some technology bloggers also expected the "Key Lime Pie" release to be Android 5. KitKat debuted on Google's Nexus 5 on October 31, 2013, and was optimized to run on a greater range of devices than earlier Android versions, having 512 MB of RAM as a recommended minimum; those improvements were known as "Project Svelte" internally at Google. The required minimum amount of RAM

available to Android is 340 MB, and all devices with less than 512 MB of RAM must report themselves as "low RAM" devices.

5.0/5.1.1(Lollipop) is a version of the Android mobile operating system developed by Google, spanning versions between 5.0 and 5.1.1. Unveiled on June 25, 2014, during the Google I/O Conference, it became available through official over-the-air (OTA) updates on November 12, 2014, for select devices that run distributions of Android serviced by Google. Its source code was made available on November 3, 2014.

6.0 (Marshmallow) is an upcoming update to the Android mobile operating system, most likely to be released in Q3 2015 ("tentatively slated for September"), with its third and final preview released on August 17, 2015. Marshmallow will primarily focus on improving the overall user experience, and will bring a few features such as a redesigned permission model in which applications are no longer automatically granted all of their specified permissions at installation time, Doze power scheme for extended battery life when a device is not manipulated by the user, and native support for fingerprint recognition.

7.0 (Nougat) is the seventh major version and 14th original version of the Android operating system. First released as an alpha test version on March 9, 2016, it was officially released on August 22, 2016, with Nexus devices being the first to receive the update.

8.0 (Oreo) is the eighth major release and the 15th version of the Android mobile operating system. It was first released as an alpha quality developer preview in March 2017 and released to the public on August 21, 2017. It contains a number of major features, including notification grouping, picture-in-picture support for video, performance improvements, and battery usage optimization, and support for auto fillers, Bluetooth 5, system-level integration with VoIP apps, wide color gamuts, and Wi-Fi Aware. Android Oreo also introduces two major platform features: Android Go – a software distribution of the operating system for low-end devices – and support for implementing a hardware abstraction layer.

9.0 (Pie) Android Pie utilizes a refresh of Google's "material design" language, unofficially referred to as "Material Design 2.0". The revamp provides more variance in aesthetics, encouraging the creation of custom "themes" for the base guidelines and components rather than a standardized appearance. Bottom-aligned navigation bars are also more prominent. As applied to Android Pie's interface, rounded corners (influenced by the proprietary Google theme used by in-house software implementing Material Design 2.0) are more prominent. In addition, Pie contains official support for screen cutouts ("notches"), including APIs and system behaviors depending on their size and position. Android certification requirements restrict devices to two cutouts, which may only be along the top or bottom of the screen.

10 (Android Q) Android 10 introduces a revamped full-screen gesture navigation system and new app open and close animations, with gestures such as swiping from either side edge of the display to go back, swiping up to go to the home screen, swiping up and holding to access Overview, swiping diagonally from a bottom corner of the screen to activate the Google Assistant, and swiping along the gesture bar at the bottom of the screen to switch apps. The use of an edge swiping gesture as a "Back" command was noted as potentially causing conflicts with apps that utilize sidebar menus and other functions accessible by swiping. An API can be used by apps to opt out of handling a back gesture within specific areas of the screen, a sensitivity control was added for adjusting the size of the target area to activate the gesture, and Google later stated that the drawer widget would support being "peeked" by long-pressing near the edge of the screen, and then swiped open. The traditional three-key navigation system used since Android "Honeycomb" remains supported as an option, along with the two-button "pill" style navigation introduced in Android 9.0 Pie.

11 (Android 11) is the eleventh major release and 18th version of Android, the mobile operating system developed by the Open Handset Alliance led by Google. It was released on September 8, 2020. The first phone launched in Europe with Android 11 was the Vivo X51 5G and after its full stable release, the first phone in the world which came

with Android 11 after Google Pixel 5 was OnePlus 8T. As of November 2021, 34.7% of Android devices run Android 11 (API 30), making it the most used version of Android.

12 (Android 12) Android 12 delivers even more personal, safe and effortless experiences on your device. Featuring a totally reimagined UI just for you, new privacy features that are designed for your safety and put you in control, and more seamless ways to get straight to your gameplay or even switch to a new device. Android 12 is our most personal OS ever, featuring dynamic colour capabilities that can transform your experience based on your wallpaper and responsive motion that responds to your touch. Even the widgets have been given a facelift, with your favorite people always available right there on your home screen. And with a more spacious redesign, colour contrast optimizations and new features to help those with low vision, Android 12 is designed to be accessible for even more users.

APPLE iOS:

Apple's mobile operating system, iOS, contains a number of different features developed over its many versions and iterations since 2007. Many such features were, when first developed and introduced by Apple, lauded as innovative, even groundbreaking advances. The following sections detail the features introduced with the various iOS versions. **iOS** (formerly **iPhone OS**) is a mobile operating system created and developed by Apple Inc. exclusively for its hardware. It is the operating system that powers many of the company's mobile devices, including the iPhone and iPod Touch; the term also included the versions running on iPads until the name iPadOS was introduced with version 13 in 2019. It is the world's second-most widely installed mobile operating system, after Android. It is the basis for three other operating systems made by Apple: iPadOS, tvOS, and watchOS. It is proprietary software, although some parts of it are open source under the Apple Public Source License and other licenses

iPhone OS (iOS 1)

- Touch screen: Apple includes a screen that responds to finger presses and swipes
- Pinch-to-Zoom: User can pinch the screen to zoom the view in or out
- Apple Safari web browser: A mobile version of Apple's Web browser
- iTunes compatibility: USB connection to iTunes-enabled computer
- Touch screen keyboard: A touch screen keyboard replaces physical buttons, allowing a much larger screen without sacrificing device compactness
- Hidden file system: Unlike with a computer, the user cannot directly access the files present on the device
- Home button: A button present on the front of the device allows user to return there from any app at any time
- Home screen web snippets*: A quick view of the web is present on the home screen
- Multi touch keyboard*: Keyboard can accept more than a single button press at a time
- Re-arrange home screen icons*
- Wi-Fi iTunes purchases*: The user can make purchases from the device

iPhone OS 2 (iOS 2)

- App store: The user can purchase apps from Apple
- Support for 3rd party apps: Users and companies can develop apps
- iOS Developer Kit: Code used to develop apps for third party support is available
- Contact search: Can search contacts by name
- Microsoft Exchange support: Push email and other features have support
- iTunes Genius support*: Playlists created by iTunes based on past music
- Podcast downloads*: Audio files downloadable from 3rd parties (audiobooks, web shows, etc.)
- Google Street View*: Can view streets and maps from iPhone

iPhone OS 3 (iOS 3)

- Copy/Paste capability: Text selectable to copy and paste
- Spotlight search: Can search a web page with keywords
- USB/Bluetooth tethering: Other mobile devices can access internet through iPhone
- Landscape keyboard: iPhone can be turned horizontally to make a two-fingered keyboard
- Find my iPhone: iPhone can be located and shutdown or wiped clean
- Voice control: iPhone can respond to voice commands such as call or send message (pre-Siri)
- Voice control over Bluetooth*: User can use Bluetooth device to input voice commands
- Downloadable ringtones*: New ringtones available for the iPhone
- Remote lock*: Device can be shut off using mobile.me

iPhone OS 4 (iOS 4)

- Multitasking: iPhone cannot run background apps, but can receive certain notifications from apps
- Video Chat: Can communicate through videos using iPhone
- Retina Display: iPhone display enhanced
- Threaded email: Email similar to text message threads in their display
- Game center*: An organization app used to place all games in one place
- TV show rentals*: iPhone can now display TV shows
- iTunes Ping*: Social network specifically tailored to music
- Verizon availability*: iPhone now available to Verizon users
- 3G tethering*: iPhone becomes hotspot for Wi-Fi enabled devices

iPhone OS 5(iOS 5)

- Siri: Enhanced and interactive voice control
- PC-free: Device can be activated without a computer
- Notification center: A drop down notification center for organizing app actions
- iTunes Wi-Fi Sync: iPhone can share data back and forth with iTunes
- iCloud: A network the user can setup to connect all their Apple devices
- iMessage: Apple's texting app

iPhone OS 6 (iOS 6)

iOS 6 is the sixth major release of the iOS mobile operating system developed by Apple Inc, being the successor to iOS 5. It was announced at the company's Worldwide Developers Conference.

iOS 6 added a new Apple Maps app, replacing Google Maps as the default mapping service for the operating system; a dedicated Podcasts app, as a central location for podcasts; and a Passbook app, for managing different types of tickets, boarding passes, coupons, and loyalty cards. The App Store received a visual overhaul, bringing a card-based app layout as well as tweaks to search algorithms. Facebook was integrated into the operating system, incorporating status messages, like buttons, and contact and event synchronization to several of Apple's apps. New privacy controls allow users more fine-grained app permissions, as well as an option to prevent targeted advertising. Siri was added to more devices, and updated with more functionality, including the ability to make restaurant reservations, launch apps, retrieve movie reviews and sports statistics, and read items from the Notification Center.

iPhone OS 7 (iOS 7)

iOS 7 is the seventh major release of the iOS mobile operating system developed by Apple Inc., being the successor to iOS 6. It was announced at the company's Worldwide Developers Conference. iOS 7 introduced a completely

redesigned user interface, a design credited to a team led by Apple's former senior vice president of design, Jony Ive. The new look, featuring flatter icons, a new slide-to-unlock function, and new animations, was described by Ive as "profound and enduring beauty in simplicity". The new design was implemented throughout the operating system, including the Notification Center, which was updated with three tabs offering different views of information; notifications visible on the lock screen; a redesigned Siri voice assistant offering visual indicators; and a Control Center offering easy access to the most commonly used features. iOS 7 also introduced Airdrop, a wireless sharing technology; CarPlay, phone and car integration; and automatic app updates in the App Store. Reception of iOS 7 was mixed. The new design language was criticized, with critics noting the implementation of design changes rather than actual productivity improvements, and citing examples such as animations delaying access, lack of icon consistency, and buttons being hidden as negative aspects of the user experience. The addition of the Control Center was praised, as were updates to Siri and multitasking. Shortly after release, there were reports of the new design causing sickness, a trend explained as being caused by animations with similar effects as car sickness.

iPhone OS 8 (iOS 8)

iOS 8 is the eighth major release of the iOS mobile operating system developed by Apple Inc., being the successor to iOS 7. It was announced at the company's Worldwide Developers Conference. iOS 8 incorporated significant changes to the operating system. It introduced a programming interface for communication between apps,^[2] and "Continuity", a cross-platform (Mac, iPhone, and iPad) system that enables communication between devices in different product categories, such as the ability to answer calls and reply to SMS on the Mac and iPad. Continuity includes a "Handoff" feature that lets users start a task on one device and continue on another. Other changes included a new Spotlight Suggestions search results feature that provides more detailed results, Family Sharing, where a family can link together their accounts to share content, with one parent as the administrator with permission controls, an updated keyboard with QuickType, providing contextual predictive word suggestions and Extensibility, which

allows for easier sharing of content between apps. Third-party developers got additional features to integrate their apps deeper into the operating system, including support for widgets in the Notification Center, and the ability to make keyboards that users can replace the default iOS keyboard with.

App updates in the release included the new Health app, which can aggregate data from different fitness apps, as well as enabling a Medical ID accessible on the lock screen for emergencies, support for iCloud Photo Library in the Photos app, which enables photos to be synchronized and stored in the cloud, and iCloud Drive, which lets users store files in the cloud and browse them across devices. In iOS 8.4, Apple updated its Music app with a streaming service called Apple Music, and a 24-hour radio station called Apple Music 1.

iPhone OS 9 (iOS 9)

iOS 9 is the ninth major release of the iOS mobile operating system developed by Apple Inc., being the successor to iOS 8. It was announced at the company's Worldwide Developers Conference. iOS 9 incorporated many feature updates to built-in apps. Most notably, Notes received the ability to draw sketches with different tools, image insertion, prominent visual appearance for website links and map locations, and advanced list formatting; an all-new Apple News app aggregates articles from different sources; and Apple Maps received mass transit support, although in a limited number of locations at launch. Major new system updates include proactivity, where Siri and advanced search are combined to make the operating system more contextually aware of information (such as time and location), and can provide the user with information ahead of time. For searching, the proactive intelligence can display instant results in a widget-like format, including weather, sports, news, and more. iOS 9 also added multiple forms of multitasking to the iPad. In iOS 9.3, Apple added a Night Shift mode that changes the color of the device's display to a warmer, less "blue light" containing shade, to reduce any negative eye health effects on users' circadian rhythms. Additionally, iOS 9 brought new user experience functions, including Quick Actions, and Peek and Pop, based on the touch-sensitive display technology in the iPhone 6S. Quick Actions are shortcuts on home

screen app icons. Users can preview ("Peek") at content without moving away from the current screen before they enter ("Pop") the previewed content into full view.

iPhone OS 10 (iOS 10)

iOS 10 is the tenth major release of the iOS mobile operating system developed by Apple Inc., being the successor to iOS 9. It was announced at the company's Worldwide Developers Conference. iOS 10 incorporates changes to 3D Touch and the lock screen. There are new features to some apps: Messages has additional emojis and third-party apps can extend functionality in iMessage, Maps has a redesigned interface and additional third-party functions, the Home app manages "HomeKit"-enabled accessories, Photos has algorithmic search and categorization of media known as "Memories," and Siri is compatible with third-party app-specific requests, such as starting workouts apps, sending IMs, using Lyft or Uber or to use payment functions. iOS 10 is the final version to support 32-bit devices and apps. In iOS 10.3, Apple introduced its new file system, APFS.

iPhone OS 11 (iOS 11)

iOS 11 is the eleventh major release of the iOS mobile operating system developed by Apple Inc., being the successor to iOS 10. It was announced at the company's Worldwide Developers Conference. Among iOS 11's changes: the lock screen and Notification Center were combined, allowing all notifications to be displayed directly on the lock screen. The various pages of the Control Center were unified, gaining custom settings and the ability to 3D Touch icons for more options. The App Store received a visual overhaul to focus on editorial content and daily highlights. A "Files" file manager app allowed direct access to files stored locally and in cloud services. Siri was updated to translate between languages and use a privacy-minded "on-device learning" technique to better understand a user's interests and offer suggestions. The camera had new settings for improved portrait-mode photos and utilised new encoding technologies to reduce file sizes on newer devices. In a later release, Messages was integrated

with iCloud to better synchronize messages across iOS and macOS devices. A previous point release also added support for person-to-person Apple Pay payments. The operating system also introduced the ability to record the screen, limited forms of drag-and-drop functionality, and support for augmented reality. Certain new features appeared only on iPad, including an always-accessible application dock, cross-app drag-and-drop, and a new user interface to show multiple apps at once.

iPhone OS 12 (iOS 12)

iOS 12 is the twelfth major release of the iOS mobile operating system developed by Apple Inc. Aesthetically similar to its predecessor, iOS 11, it focuses less on new functions than on performance, quality improvements and security updates. Announced at the company's Worldwide Developers Conference. Performance optimizations were made in order to speed up common tasks across all supported iOS devices.^[31] Tests done by Apple on an iPhone 6 Plus showed apps launching 40% faster, the system keyboard activating 50% faster, and the camera opening 70% faster. Screen Time is a new feature in iOS 12 that records the amount of time a user spent on the device. The feature also displays the amount of time the user used particular apps,^[33] the amount of time the user used particular categories of apps (such as games),^[34] and the number of notifications the user received.^[35]

Screen Time also provides blocking features to limit usage of apps (with time limits) or set other restrictions such as on purchases or explicit content. It replaces Restrictions in the iOS Settings app, but can also be used by adults to limit their own usage. These features can be used with or without a passcode. Without setting a passcode, the limits can easily be bypassed but may serve as a useful reminder of usage goals.^[36]

iPhone OS 13 (iOS 13)

iOS 13 is the thirteenth major release of the iOS mobile operating system developed by Apple Inc. for their iPhone, iPod Touch, and Home Pod lines. The successor to iOS 12 on those devices, it was announced at the company's Worldwide Developers Conference (WWDC). iOS 13 changes the handling of location data. When an app

requests access to location, the user chooses whether to grant access whenever they are using the app, never, or only once. The user will receive similar prompts for background location access, and when an app requests access to Bluetooth or Wi-Fi (which may also be used for non-consensual location tracking). A system-wide dark mode allows users to enable a light-on-dark color scheme for the entire iOS and iPad OS user interface, all native applications, and supported third-party apps. It can be manually turned on or set to automatically switch between light and dark modes based on the time of day. A new single sign-on service known as "Sign in with Apple" is integrated with iOS 13, and allows users to create accounts for third-party services with a minimal amount of personal information. Users may optionally generate a disposable email address for each account, improving privacy and anonymity, and reducing the amount of information that can be associated with a single email address.

iPhone OS 14 (iOS 14)

iOS 14 is the fourteenth major release of the iOS mobile operating system developed by Apple Inc. for their iPhone and iPod Touch lines. Announced at the company's Worldwide Developers Conference as the successor to iOS 13. App Clips are a new feature expanding on the functionality of the App Store. Intended as a dynamic feature rather than a permanently installed app, App Clips are extremely pared-back with very few OS permissions. At the time of the announcement, only the use of Apple Pay and Sign in with Apple were shown. CarPlay was updated to allow users to set a built-in wallpaper. Route management in Apple Maps was extended with features alerting the user to available stops, such as parking and food ordering. Additionally, route planning for electric vehicles now considers the location of charging stations. Car keys allow an iPhone to act as a virtual car key using NFC technology with compatible cars. The first compatible car showcased by Apple at the WWDC 2020 was the 2021 BMW 5 Series. Keys are accessible from the Wallet app. Keys may be shared; sharing may be temporary or given restrictions. In the event the iPhone is out of battery, car keys can still be accessed via the power reserve of the iPhone for about five hours.^[15] Car keys require an iPhone released in 2018 or later.

iPhone OS 15 (iOS 15)

iOS 15 is the fifteenth and current major release of the iOS mobile operating system developed by Apple for its iPhone and iPod Touch lines of products. It was announced at the company's Worldwide Developers Conference as the successor to iOS 14. The Focus allows users to set their "state," such as work, sleep, do not disturb or a custom focus. Based on the selected state, users can set the type of notification they want to receive and from which application. It is also possible to choose which pages and then apps to show on the Home based on the state. The state can change automatically based on where the user is or a time. Focus also controls the interactions with Contacts, so it is possible to decide which specific contacts can "disturb" the user. Devices with an A12 chip or newer support Live Text in all apps which can transcribe text from the camera in the real world, images, photos through Artificial Intelligence text recognition using the Neural Engine.

Objectives of the Study

- To Study Consumer Satisfaction of Android and iOS on the following basis:
 - Overall Performance
 - Application
 - Games
 - Multitasking
 - User Interface
 - Upgradation

NEED FOR THE STUDY

Factors influencing people perception on android and iOS

Limitations of the study

The universe being large the study will be restricted to respondents of Chennai Royapuram

The sample size of the study will be limited to 100 respondents only

Time is also a limit for the study.

The study is based upon primary data, so any wrong information given by the respondents may mislead the findings

CHAPTER 2: LITERATURE REVIEW

Jindal and Jain (2012), according to them with ongoing competition in mobile market, the motive of every mobile company is to provide the best features and ease to use interface to the users. However, perfection needs time. This study analyzes different OS bases on features, lacking advantages. Authors also provide the new ideas to make add new features in different OS based on his comparison. In mobile world, the complex OS contain user interface. Therefore, the OS is hidden from the user. Operating system is a key element in performing the task the choice of OS is important as it shows that what functions does that OS support. The OS provides a software platform on top of which other application programs can run. The applications are written for OS so the choice of an OS matters a lot.

Tiwaskar et al. (2012), according to them now a day's smart phones are a vital part of our life and working like a laptop. This study describes the architecture of mobile computing and comparison of various software factors of various mobile operating systems. New features of android OS are also introduced.

Khomh et al. (2012), according to them many software companies prefer to reuse existing grown-up software to deliver a high quality system in a short period. One of the best examples is of Google who used Linux operating system into android OS for the mobiles. This study author has conducted an experiential study to understand how Android adapts the Linux kernel. Using software repositories from Linux and Android, author assessed the effort needed to reuse and adapt the Linux kernel into Android.

Sharma et al. (2013), according to them now a day's advancement in mobile technology has become a big challenge in the mobile market this study discusses different technologies used with different mobiles in the market. 0G was the first generation with

only analog feature i.e., only voice call was allowed and no data feature presents different generation of mobile. The 1G was little advance that allowed limited data feature with voice call. The 2G was little more advance than the previous one with voice call, sms and cellular network features. The 3G brought more advance features like streaming data, broadband and voice. The 4G added advance features in the previous generation like highspeed broadband and high data rate. Along with advancement in mobile technology, different operating systems were designed to support these technologies.

By Michael oleaga posted June 13 2013 a new survey shows apple and Android users are very loyal to their respective smartphones

According to retro voce gadget technology report Android and apple owners are satisfied with their phones and would not change to another device when they plan to change smartphones starting with android owners 60 3 percent surveyed said they will maintain starting with Android owners 63% surveyed said they will maintain with getting an Android device when buying their next phone a comfortable lead against the 23% stating they would jump onto the iPhone board of the Android owners 12% would rather be undecided compared to 1% for Microsoft Windows phone platform.

In regards to current iPhone owners 81% would get an iPhone if they have to buy another mobile phone only 4% of iPhone owners would make the switch to Android while a large 14% went undecided Microsoft's Windows Phone saw a slight boost to 5% from iPhone owners

Android is a relatively new platform it is produced by Google incorporation and its first release was presented in 2007 near 2010 Android is installed on many different mobile devices and its users can download Android apps and other content through Google Play service which replaced the old Android Market (bishop 2012)

This thesis discusses technologies incorporated in Android application development and how they apply to the research problem as the official Android website describes this platform Android is a software stack for mobile devices that includes an operating system middleware and key applications what is under 2012 Android provides the core set of applications including a...m calendar maps browser contacts and core set of applications including an email client as well as program calendar maps browser contacts and others what is under 2012 while additional applications can be downloaded through Google Play service (Bishop 2012)

CHAPTER 3: RESEARCH METHODOLOGY

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. The methodology section answers two main questions: How was the data collected or generated? How was it analyzed?

Types of Research Methods

Business research methods can be defined as “a systematic and scientific procedure of data collection, compilation, analysis, interpretation, and implication pertaining to any business problem”. Types of research methods can be classified into several categories according to the nature and purpose of the study and other attributes. In methodology chapter of your dissertation, you are expected to specify and discuss the type of your research according to the following classifications.

General Classification of Types of Research Methods

Types of research methods can be broadly divided into two quantitative and qualitative categories.

Quantitative research “describes, infers, and resolves problems using numbers. Emphasis is placed on the collection of numerical data, the summary of those data and the drawing of inferences from the data”.

Qualitative research, on the other hand, is based on words, feelings, emotions, sounds and other non-numerical and unquantifiable elements. It has been noted that “information is considered qualitative in nature if it cannot be analyzed by means of mathematical techniques. This characteristic may also mean that an incident does not take place often enough to allow reliable data to be collected”

Types of Research Methods According to Nature of the Study

Types of the research methods according to the nature of research can be divided into two groups: descriptive and analytical. Descriptive research usually involves surveys and studies that aim to identify the facts. In other words, descriptive research mainly deals with the “description of the state of affairs as it is at present”, and there is no control over variables in descriptive research.

Analytical research, on the other hand, is fundamentally different in a way that “the researcher has to use facts or information already available and analyze these in order to make a critical evaluation of the material”.

Types of Research Methods According to the Purpose of the Study

According to the purpose of the study, types of research methods can be divided into two categories: applied research and fundamental research. Applied research is also referred to as an action research, and the fundamental research is sometimes called basic or pure research. The table below summarizes the main differences between applied research and fundamental research. Similarities between applied and fundamental (basic) research relate to the adoption of a systematic and scientific procedure to conduct the study.

Types of Research Methods according to Research Design

On the basis of research design the types of research methods can be divided into two groups – exploratory and conclusive. Exploratory studies only aim to explore the research area and they do not attempt to offer final and conclusive answers to research questions. Conclusive studies, on the contrary, aim to provide final and conclusive answers to research questions.

RESEARCH METHODOLOGY Research in common refers to a search for knowledge. Research methodology is a way to systematically solve the research problem. It may be understood as science of studying how research is done scientifically. **Sample Design:** The sample design which is used in the study is convenience sampling.

Respondents 110

from Chennai were selected on the basis of convenience. Sample size: Sample size taken for the study is 110 respondents.

Sources of data: The data is collected through in two ways:

Primary data:- The primary data was collected freshly and thus it was original in character. It has been collected through questionnaire. The questionnaires were given to the respondents through online questionnaire.

Secondary data:- Secondary data are data which have already been collected by someone. Its main sources are Journals, Newspapers, Magazines, and Internet etc.

Area of analysis: The study was conducted in Chennai. Tools used for analysis:

ANOVA F test

Regression

SCOPE OF THE STUDY

This study specially deals to know about the consumer satisfaction and preferences towards smartphone usage and their satisfaction level

Research design definition

Research design is the framework of research methods and techniques chosen by a researcher. The design allows researchers to hone in on research methods that are suitable for the subject matter and set up their studies up for success.

The design of a research topic explains the type of research (experimental, survey, correlational, semi-experimental, review) and also its sub-type (experimental design, research problem, descriptive case-study).

There are three main types of research design: Data collection, measurement, and analysis.

The type of research problem an organization is facing will determine the research design and not vice-versa. The design phase of a study determines which tools to use and how they are used.

An impactful research design usually creates a minimum bias in data and increases trust in the accuracy of collected data. A design that produces the least margin of error in

experimental research is generally considered the desired outcome. The essential elements of the research design are:

1. Accurate purpose statement
2. Techniques to be implemented for collecting and analyzing research
3. The method applied for analyzing collected details
4. Type of research methodology
5. Probable objections for research
6. Settings for the research study
7. Timeline
8. Measurement of analysis

Proper research design sets your study up for success. Successful research studies provide insights that are accurate and unbiased. You'll need to create a survey that meets all of the main characteristics of a design. There are four key characteristics of research design:

Neutrality: When you set up your study, you may have to make assumptions about the data you expect to collect. The results projected in the research design should be free from bias and neutral. Understand opinions about the final evaluated scores and conclusion from multiple individuals and consider those who agree with the derived results.

Reliability: With regularly conducted research, the researcher involved expects similar results every time. Your design should indicate how to form research questions to ensure the standard of results. You'll only be able to reach the expected results if your design is reliable.

Validity: There are multiple measuring tools available. However, the only correct measuring tools are those which help a researcher in gauging results according to the objective of the research. The questionnaire developed from this design will then be valid.

Generalization: The outcome of your design should apply to a population and not just a restricted sample. A generalized design implies that your survey can be conducted on any part of a population with similar accuracy.

Quantitative research design: Quantitative research is for cases where statistical conclusions to collect actionable insights are essential. Numbers provide a better perspective to make critical business decisions. Quantitative research design methods are necessary for the growth of any organization. Insights drawn from hard numerical data and analysis prove to be highly effective when making decisions related to the future of the business.

You can further break down the types of research design into five categories

- 1. Descriptive research design:** In a descriptive design, a researcher is solely interested in describing the situation or case under their research study. It is a theory-based design method which is created by gathering, analyzing, and presenting collected data. This allows a researcher to provide insights into the why and how of research. Descriptive design helps others better understand the need for the research. If the problem statement is not clear, you can conduct exploratory research.
- 2. Experimental research design:** Experimental research design establishes a relationship between the cause and effect of a situation. It is a causal design where one observes the impact caused by the independent variable on the dependent variable. For example, one monitors the influence of an independent variable such as a price on a dependent variable such as customer satisfaction or brand loyalty. It is a highly practical research design method as it contributes to solving a problem at hand. The independent variables are manipulated to monitor the change it has on the dependent variable. It is often used in social sciences to observe human behavior by analyzing two groups. Researchers can have participants change their actions and study how the people around them react to gain a better understanding of social psychology.
- 3. Correlational research design:** Correlational research is a non-experimental research design technique that helps researchers establish a relationship between two closely connected variables. This type of research requires two different groups. There is

no assumption while evaluating a relationship between two different variables, and statistical analysis techniques calculate the relationship between them.

A correlation coefficient determines the correlation between two variables, whose value ranges between -1 and +1. If the correlation coefficient is towards +1, it indicates a positive relationship between the variables and -1 means a negative relationship between the two variables.

4. Diagnostic research design: In diagnostic design, the researcher is looking to evaluate the underlying cause of a specific topic or phenomenon. This method helps one learn more about the factors that create troublesome situations.

This design has three parts of the research:

- Inception of the issue
- Diagnosis of the issue
- Solution for the issue

5. Explanatory research design: Explanatory design uses a researcher's ideas and thoughts on a subject to further explore their theories. The research explains unexplored aspects of a subject and details about what, how, and why of research questions.

Qualitative research design: Qualitative research determines relationships between collected data and observations based on mathematical calculations. Theories related to a naturally existing phenomenon can be proved or disproved using statistical methods. Researchers rely on qualitative research design methods that conclude "why" a particular theory exists along with "what" respondents have to say about it.

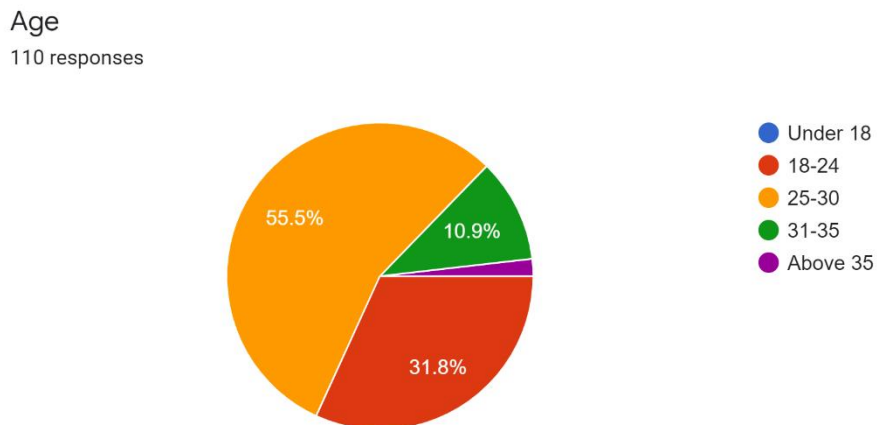
CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

Table 4.1 Distribution of respondents based on age

Age	No. of respondents	Percentage
Under 18	0	0
18-24	35	32
25-30	61	55
31-35	12	11
Above 35	2	2
Total	110	100

Source: primary data

Chart 4.1: Distribution of respondents based on age



Inference:

55% of the respondents are from age 25-30.

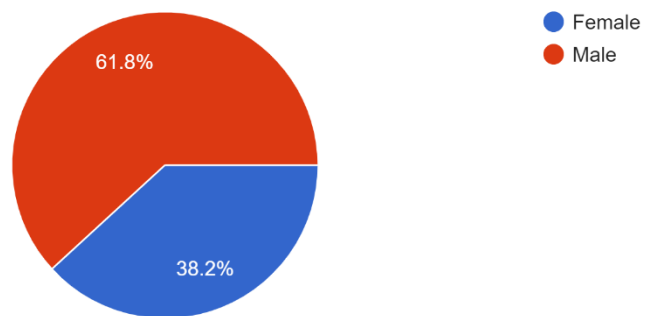
Table 4.2: Distribution of respondents based on gender.

Gender	No. of respondents	Percentage
Male	68	62
Female	42	38
Total	110	100

Source: primary data

Chart 4.2: Distribution of respondents based on gender.

Gender
110 responses



Inference:

62% of the respondents are male.

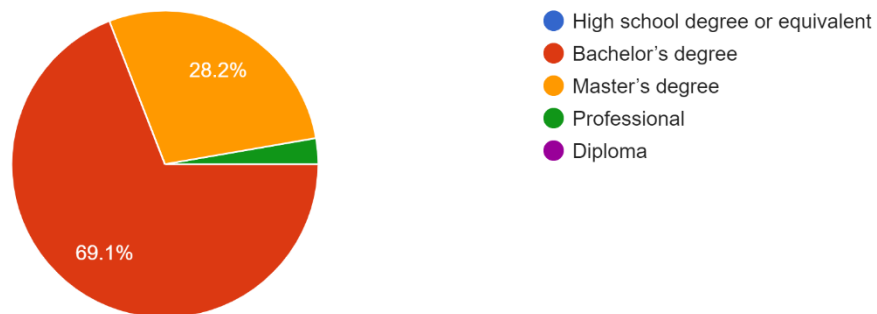
Table 4.3.: Distribution of respondents based on qualifications

Qualification	No. of respondents	Percentage
High school degree or equivalent	0	0
Bachelor's degree	76	69
Master's degree	31	28
Professional	3	3
Diploma	0	0
Total	110	100

Source: primary data

Chart 4.3: Distribution of respondents based on qualifications

Qualification
110 responses



Inference:

69% of the respondents are Bachelor's degree holders.

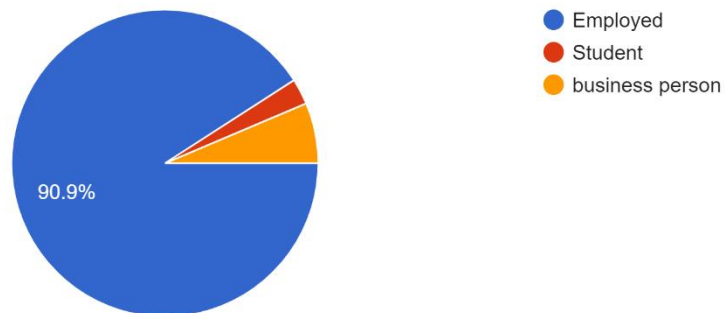
Table 4.4.: Distribution of respondents based on employment status.

Employment status	No. of respondents	Percentage
Employed	100	91
Student	3	3
business person	7	6
Total	110	100

Source: primary data

Chart 4.4: Distribution of respondents based on employment status.

Employment status
110 responses



Inference:

91% of the respondents are employed.

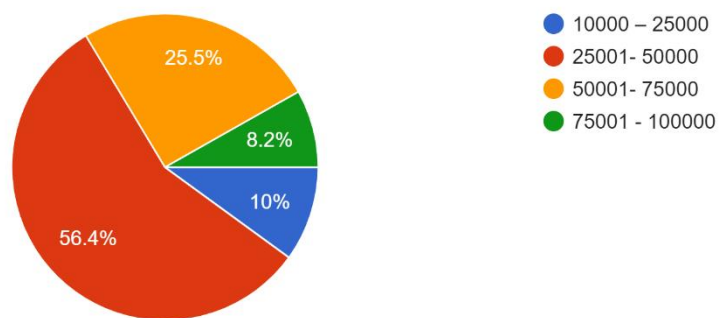
Table 4.5.: Distribution of respondents based on income level.

Income level	No. of respondents	Percentage
10000 – 25000	11	10
25001- 50000	62	56
50001- 75000	28	26
75001 – 100000	9	8
Total	110	100

Source: primary data

Chart 4.5: Distribution of respondents based on income level.

Income
110 responses



Inference:

56% of the respondents are in the income level of 25001-50000.

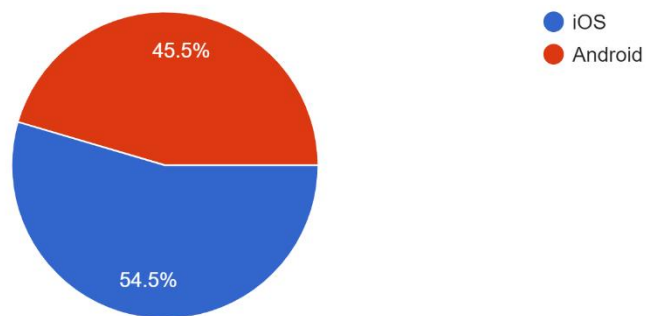
Table 4.6.: Distribution of respondents based on usage of operating system.

Operating system	No. of respondents	Percentage
iOS	60	55
Android	50	45
Total	110	100

Source: primary data

Chart 4.6: Distribution of respondents based on usage of operating system.

Which Operating system you are using
110 responses



Inference:

55% of the respondents are iOS.

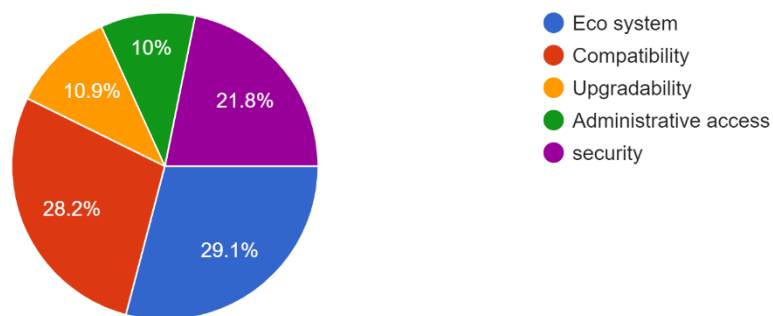
Table 4.7.: what will you take into consideration before selecting your Operating system?

Options	No. of respondents	Percentage
Eco system	32	29
Compatibility	31	28
Upgradability	12	11
Administrative access	11	10
Security	24	22
Total	110	100

Source: primary data

Chart 4.7: what will you take into consideration before selecting your Operating system?

what will you take into consideration before selecting your Operating system?
110 responses



Inference:

29% of the respondents opted ecosystem.

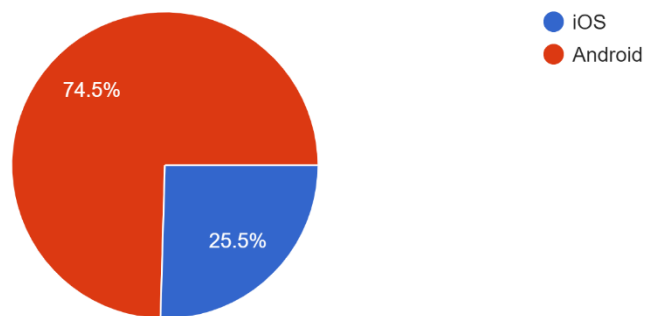
Table 4.8.: At time which Operating system freezes or crashes more

Operating system	No. of respondents	Percentage
iOS	28	26
Android	82	74
Total	110	100

Source: primary data

Chart 4.8: At time which Operating system freezes or crashes more

At time which Operating system freezes or crashes more
110 responses



Inference:

74% of the respondents are Android.

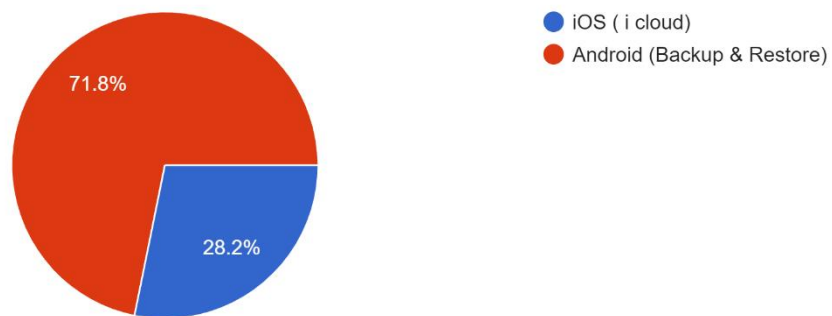
Table 4.9.: Which operating system have a better backup option

Operating system backup	No. of respondents	Percentage
iOS (I cloud)	28	26
Android (backup & restore)	82	74
Total	110	100

Source: primary data

Chart 4.9: Which operating system have a better backup option

Which operating system have a better backup option
110 responses



Inference:

74% of the respondents are comfortable with Android backup and restore.

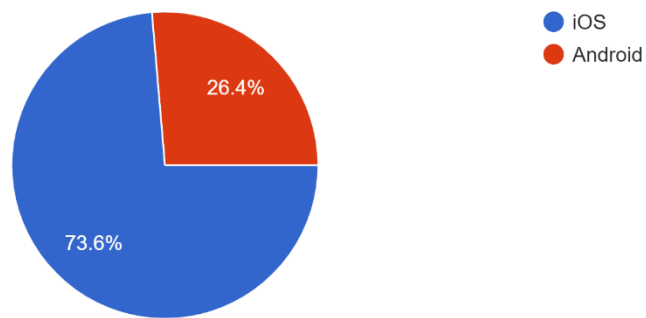
Table 4.10.: Which mobile operating system has more compatibility issues

Operating system	No. of respondents	Percentage
iOS	81	74
Android	29	26
Total	110	100

Source: primary data

Chart 4.10: Which mobile operating system has more compatibility issues

Which mobile operating system has more compatibility issues
110 responses



Inference:

74% of the respondents are iOS.

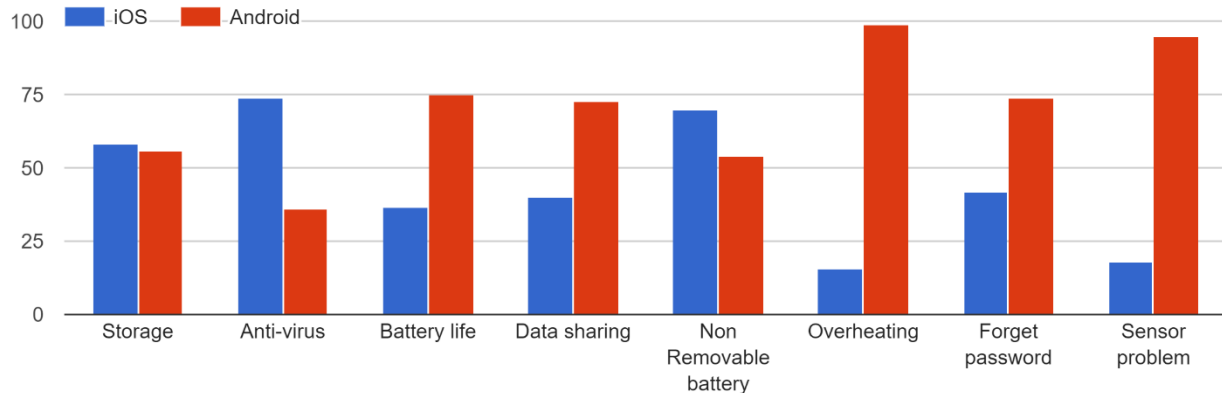
Table 4.11.: Ranking statement for both Android and IOS Operating system

Options	iOS	Android
Storage	58	56
Anti-virus	74	36
Battery life	37	75
Data sharing	40	73
Non Removable battery	70	54
Overheating	16	99
Forget password	42	74
Sensor problem	18	95

Source: primary data

Chart 4.11: Ranking statement for both Android and IOS Operating system

Ranking statement for both Android and IOS Operating system



Inference:

The above table and chart shows about the rankings of the respondents about specific features of iOS and android operating systems.

Table 4.12.: Which operating system do you feel is value for money

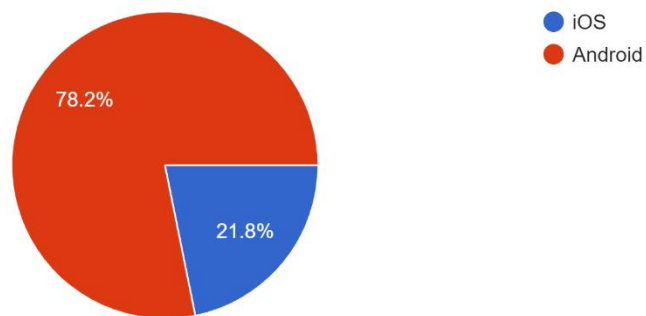
Operating system	No. of respondents	Percentage
iOS	24	22
Android	86	78
Total	110	100

Source: primary data

Chart 4.12: Which operating system do you feel is value for money

Which operating system do you feel is value for money?

110 responses



Inference:

78% of the respondents are Android.

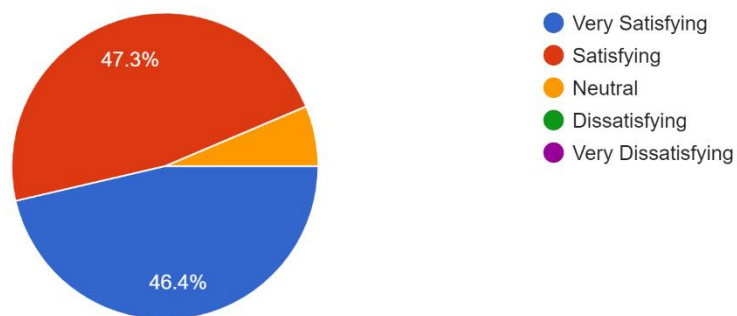
Table 4.13.: Overall Performance of Android Operating System.

Options	No. of respondents	Percentage
Very Satisfying	51	46
Satisfying	52	47
Neutral	7	7
Dissatisfying	0	0
Very Dissatisfying	0	0
Total	110	100

Source: primary data

Chart 4.13: Which operating system do you feel is value for money

Overall Performance of Android Operating System.
110 responses



Inference:

47% of the respondents are satisfied.

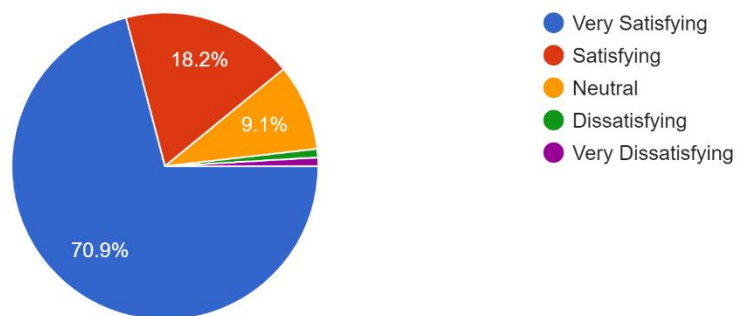
Table 4.14.: Overall Performance of iOS Operating System.

Options	No. of respondents	Percentage
Very Satisfying	78	71
Satisfying	20	18
Neutral	10	9
Dissatisfying	1	1
Very Dissatisfying	1	1
Total	110	100

Source: primary data

Chart 4.13: Overall Performance of iOS Operating System.

Overall Performance of iOS Operating System.
110 responses



Inference:

71% of the respondents are very much satisfied.

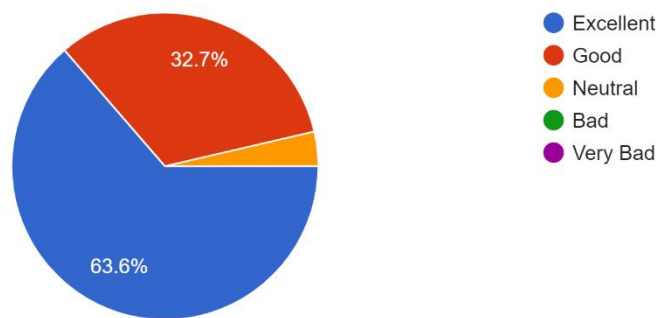
Table 4.15.: Rating of Android Operating system on User Interface

Options	No. of respondents	Percentage
Excellent	70	64
Good	36	33
Neutral	4	4
Bad	0	0
Very Bad	0	0
Total	110	100

Source: primary data

Chart 4.15: Rating of Android Operating system on User Interface

Rating of Android Operating system on User Interface
110 responses



Inference:

64% of the respondents said excellent.

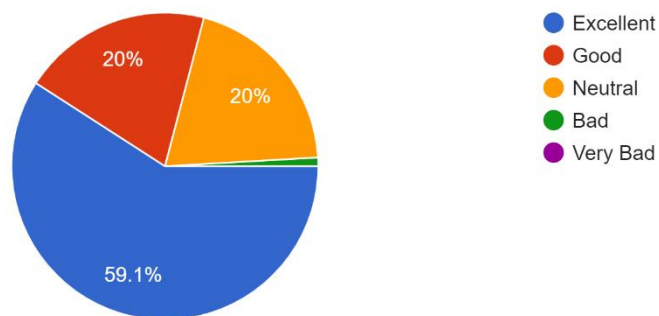
Table 4.16.: Rating of iOS Operating system on User Interface

Options	No. of respondents	Percentage
Excellent	65	59
Good	22	20
Neutral	22	20
Bad	1	1
Very Bad	0	0
Total	110	100

Source: primary data

Chart 4.16: Rating of iOS Operating system on User Interface

Rating of iOS Operating system on User Interface
110 responses



Inference:

59% of the respondents said excellent.

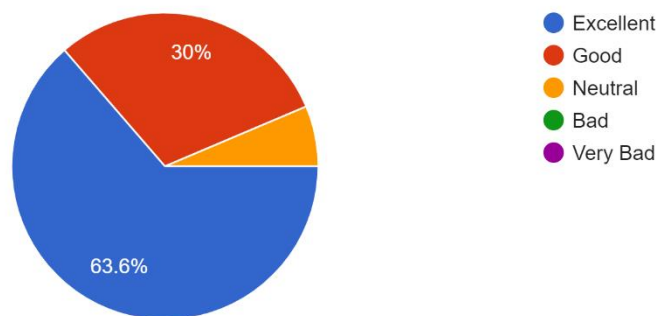
Table 4.17.: Rating of Android Operating system on Multi-Tasking

Options	No. of respondents	Percentage
Excellent	70	64
Good	33	30
Neutral	7	6
Bad	0	0
Very Bad	0	0
Total	110	100

Source: primary data

Chart 4.17: Rating of Android Operating system on Multi-Tasking

Rating of Android Operating system on Multi-Tasking
110 responses



Inference:

64% of the respondents said excellent.

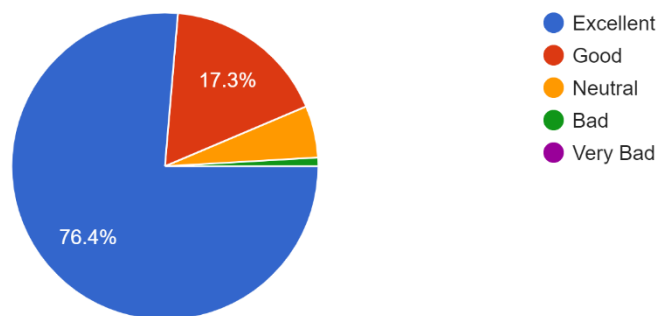
Table 4.18.: Rating of iOS Operating system on Multi-Tasking

Options	No. of respondents	Percentage
Excellent	84	76
Good	19	17
Neutral	6	6
Bad	1	1
Very Bad	0	0
Total	110	100

Source: primary data

Chart 4.18: Rating of iOS Operating system on Multi-Tasking

Rating of iOS Operating system on Multi-Tasking
110 responses



Inference:

76% of the respondents said excellent.

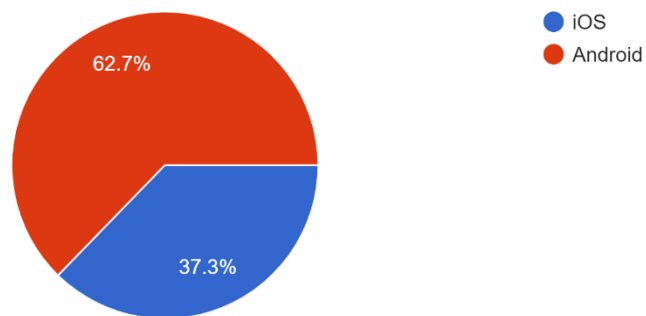
Table 4.19.: Opinion, of respondents which operating system has the better battery life management?

Operating system	No. of respondents	Percentage
iOS	41	37
Android	69	63
Total	110	100

Source: primary data

Chart 4.19: Opinion, of respondents which operating system has the better battery life management?

In your opinion, which operating system has the better battery life management?
110 responses



Inference:

63% of the respondents are Android.

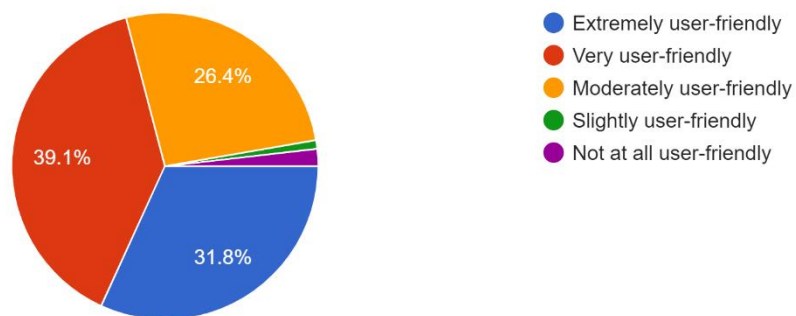
Table 4.20: How user-friendly is an iOS

Options	No. of respondents	Percentage
Extremely user-friendly	35	32
Very user-friendly	43	39
Moderately user-friendly	29	26
Slightly user-friendly	1	1
Not at all user-friendly	2	2
Total	110	100

Source: primary data

Chart 4.20: How user-friendly is an iOS

How user-friendly is an iOS?
110 responses



Inference:

39% of the respondents are very user friendly.

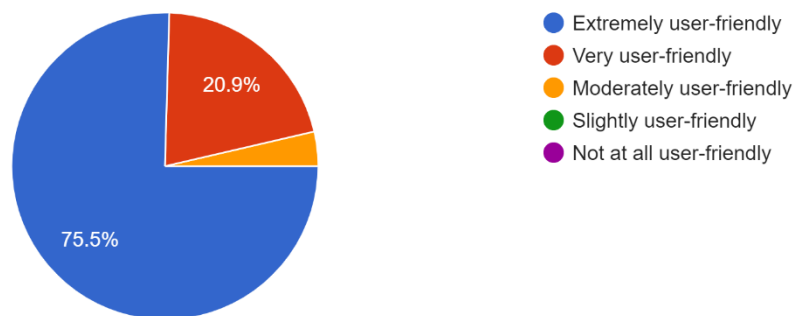
Table 4.21: How user-friendly is an Android

Options	No. of respondents	Percentage
Extremely user-friendly	83	76
Very user-friendly	23	21
Moderately user-friendly	4	4
Slightly user-friendly	0	0
Not at all user-friendly	0	0
Total	110	100

Source: primary data

Chart 4.21: How user-friendly is an Android

How user-friendly is an Android?
110 responses



Inference:

76% of the respondents are extremely user friendly.

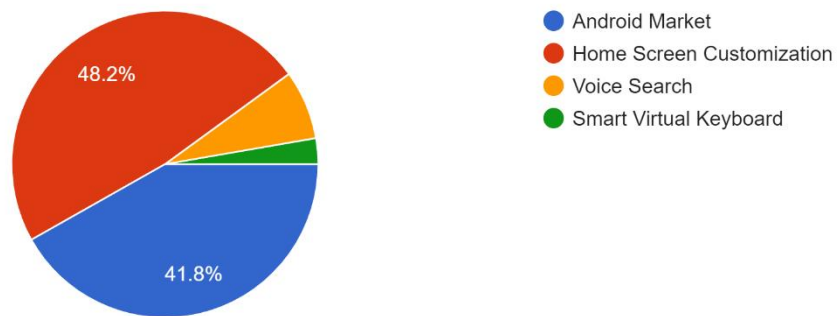
Table 4.22: Best Features of Android Operating System

Features	No. of respondents	Percentage
Android Market	46	42
Home Screen Customization	53	48
Voice Search	8	7
Smart Virtual Keyboard	3	3
Total	110	100

Source: primary data

Chart 4.22: How user-friendly is an Android

Best Features of Android Operating System
110 responses



Inference:

48% of the respondents are home screen customization.

Table 4.23: Best Features of iOS Operating System

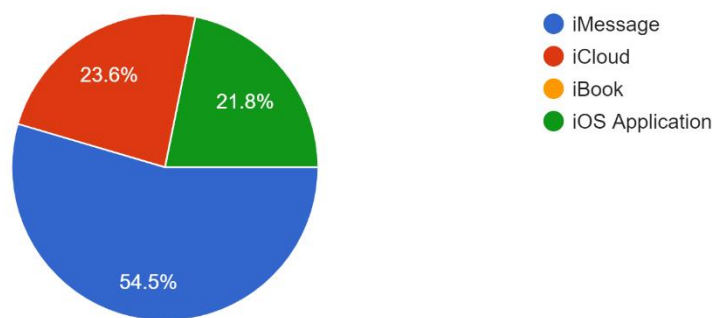
Features	No. of respondents	Percentage
iMessage	60	55
iCloud	26	23
iBook	0	0
iOS Application	24	22
Total	110	100

Source: primary data

Chart 4.23: How user-friendly is an Android

Best Features of iOS Operating System

110 responses



Inference:

55% of the respondents are iMessage.

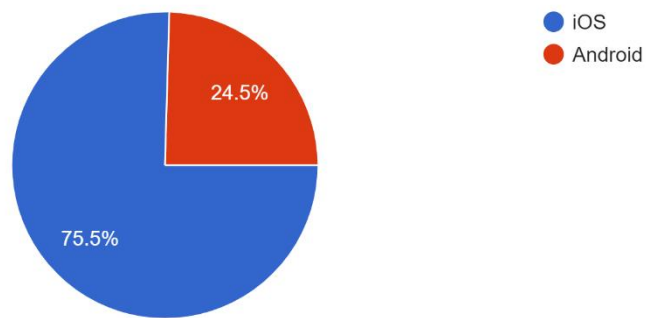
Table 4.24: which Operating system offers better software updates

Operating system	No. of respondents	Percentage
iOS	83	76
Android	27	24
Total	110	100

Source: primary data

Chart 4.24: which Operating system offers better software updates

which Operating system offers better software updates?
110 responses



Inference:

76% of the respondents are iOS.

Table 4.25: what are the specific features you like in specific operating system

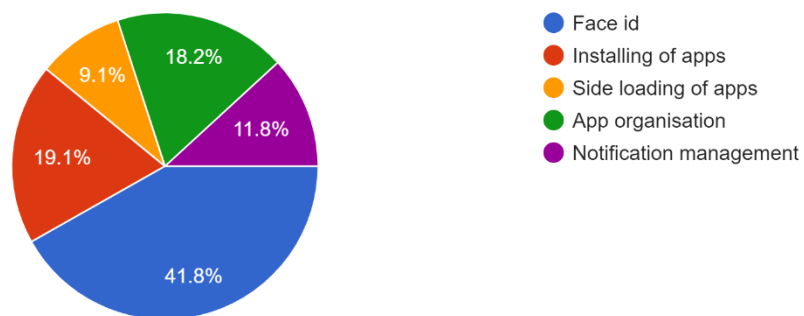
Features	No. of respondents	Percentage
Face id	46	42
Installing of apps	21	19
Side loading of apps	10	9
App organization	20	18
Notification management	13	12
Total	110	100

Source: primary data

Chart 4.25: what are the specific features you like in specific operating system

what are the specific features you like in specific operating system

110 responses



42% of the respondents are Face id.

ANALYTICAL TOOLS:

F Test Anova:

Anova uses the F – Test to determine whether the variability between group means is larger than the variability of the observations within the groups.

ANOVA

AGE

	Sum Squares	of df	Mean Square	F	Sig.
Between Groups	.687	3	.547	.856	.586
Within Groups	48.394	105	.282		
Total	49.028	110			

Since p value (.586) is greater than 0.05 at 5 percent level of significance, we accept the null hypothesis and reject the alternative hypothesis.

Percentage analysis:

Statistics

WHICH OPERATING SYSTEM DO YOU FEEL IS VALUE OF MONEY

N	Valid	110
	Missin g	0

OPERATING SYSTEM DO YOU FEEL IS VALUE OF MONEY

		Frequen cy	Percent	Valid Percent	Cumulative Percent
Valid	ANDROID	69	62.07	62.07	62.7
	IOS	49	44.54	44.54	99.6
	Total	110	100.0	100.0	

CHAPTER 5: FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS OF THE STUDY:

1. 55% of the respondents are from age 25-30.
2. 62% of the respondents are male.
3. 69% of the respondents are Bachelor's degree holders.
4. 91% of the respondents are employed.
5. 56% of the respondents are in the income level of 25001-50000.
6. 55% of the respondents are iOS.
7. 29% of the respondents opted ecosystem.
8. 74% of the respondents are Android.
9. 74% of the respondents are comfortable with Android backup and restore.
10. 74% of the respondents are iOS.
11. 78% of the respondents are Android.
12. 47% of the respondents are satisfied.
13. 71% of the respondents are very much satisfied.
14. 64% of the respondents said excellent.
15. 59% of the respondents said excellent.
16. 64% of the respondents said excellent.
17. 76% of the respondents said excellent.
18. 63% of the respondents are Android.
19. 39% of the respondents are very user friendly.
20. 76% of the respondents are extremely user friendly.
21. 48% of the respondents are home screen customization.
22. 55% of the respondents are iMessage.
23. 76% of the respondents are iOS.
24. 42% of the respondents are Face id.

SUGGESTIONS OF THE STUDY:

- According to the survey we would suggest that the android should work more on the home screen customization for the better result.
- We should also suggest that the ios operating system should give some of the popular games as free downloads.
- ios operating system should also give as free applications which they are charging extra money from the consumers.
- Android operating system should also improve more on the multi-tasking for the better satisfaction of the consumers.
- ios operating system should improve the result of applications and games for the satisfaction of the consumers.
- According to the survey, maximum number of people prefer Android operating system but then also it should improve more on multi-tasking for the better satisfaction of the consumers.

CONCLUSION:

Hot-selling Android and iPhones have already conquered the consumer market, and with users becoming accustomed to those devices, more people want to use them for work. In the competitive environment where every second day a new technological advancement takes places and the two cell phone giants Android and iOS are pushing themselves every now and then to achieve excellence in their product. Today Android's percentage share in the market is increasing at an increasing rate on the other hand with apple 4S coming up in the market it is stealing all the market shares. With the help of our research, it is found that Google android is rapidly taking its pace in the eyes of today's youth and every person today wants affordable and the best operating system which Android guarantees to provide to its users. On the other hand, Apple with its brand name and prestige value attached attracts its target customers but is not able to come up with useful and more free applications which Android based cell phone has in their store house.

BIBLIOGRAPHY:

AbdallaNayef Al-Refai and Nor AzilaBtMohd Noor(2014) “The Influence of the Trust on Customer Satisfaction in Mobile Phone Market: An Empirical Investigation of the mobile phone Market”, International Journal of Management Research and Review, ISSN: 2249-7196, IJMRR/, Vol.4 Issue 9, Article No-2/847-860, pp.847-860.

Robert Győrödi Doina Zmaranda Vlad Georgian Adrian Cornelia Győrödi (2017) “A Comparative Study between Applications Developed for Android and IOS ” Article in International Journal of Advanced Computer Science and Applications .(IJACSA) Vol. 8, No.

Kavipriya and Renugarajan (2012) “ User’s Level of Satisfaction with mobile phone service providers- with Special Reference to Tirupur District, Tamil Nadu”, National Monthly Refereed Journal of Research in Commerce and Management, Vol.No1, Issue No.9, ISSN 2277-1166, September 2012, pp.35.

Website: -

https://file.scirp.org/pdf/OJBM_2017122515255786.pdf

<http://panmore.com/apple-mission-statement-vision-statement>

<https://mds.marshall.edu/cgi/viewcontent.cgi?article=1420&context=etd>

https://en.wikipedia.org/wiki/Apple_Inc.

[https://mpk732t22016clusterb.wordpress.com/2016/07/31/how-could-apple-get-success-ananalysis-](https://mpk732t22016clusterb.wordpress.com/2016/07/31/how-could-apple-get-success-ananalysis-of-customer-behavior/)

[of-customer-behavior/](https://mpk732t22016clusterb.wordpress.com/2016/07/31/how-could-apple-get-success-ananalysis-of-customer-behavior/)

<https://www.fastcompany.com/40525409/why-apple-is-the-worlds-most-innovative-company>

<https://www.fastcompany.com/most-innovative-companies/2018>

<https://www.bloomberg.com/news/videos/2016-03-07/apple-ceo-tim-cook-charlie-rose>

<https://www.cleverism.com/lexicon/customer-perception/>

Journals

ANEXURE:

1. distribution of respondents based on age

- Under 18
- 18-24
- 25-30
- 31-35
- 35 above

2.distribution of respondents based on gender.

- Male
- Female

3.distribution of respondents based on qualification

- High school degree or equivalent
- Bachelor's degree
- Master's degree
- Professional
- Diploma

4.distribution of respondents based on employment status

- Employed
- Student
- business person

5. distribution of respondents based on income

- 10000 – 25000
- 25001- 50000
- 50001- 75000
- 75001 - 100000.

6. Which Operating system you are using

- iOS
- Android

7. what will you take into consideration before selecting your Operating system?

- Eco system
- Compatibility
- Upgradability
- Administrative access
- Security

8. At time which Operating system freezes or crashes more

- iOS
- Android

9. Which operating system have a better backup option

- iOS (i cloud)
- Android (Backup & Restore)

10. Which mobile operating system has more compatibility issues

- iOS
- Android

11. Ranking statement for both Android and IOS Operating system

Particulars	iOS	Android
Storage		
Anti-virus		
Battery life		
Data sharing		
Non Removable battery		
Overheating		
Forget password		
Sensor problem		

12. Overall Performance of Android Operating System.

- Very Satisfying
- Satisfying
- Neutral
- Dissatisfying
- Very Dissatisfying

13. Overall Performance of iOS Operating System.

- Very Satisfying
- Satisfying
- Neutral
- Dissatisfying
- Very Dissatisfying

14. Rating of Android Operating system on User Interface

- Excellent
- Good
- Neutral
- Bad
- Very Bad

15. Rating of iOS Operating system on User Interface

- Excellent
- Good
- Neutral
- Bad
- Very Bad

16. Rating of Android Operating system on Multi-Tasking

- Excellent
- Good
- Neutral
- Bad
- Very Bad

17. Rating of iOS Operating system on Multi-Tasking

- Excellent
- Good
- Neutral
- Bad
- Very Bad

18. In your opinion, which operating system has the better battery life management?

- iOS
- Android

19. How user-friendly is an iOS?

- Extremely user-friendly
- Very user-friendly
- Moderately user-friendly
- Slightly user-friendly
- Not at all user-friendly

20. How user-friendly is an Android?

- Extremely user-friendly
- Very user-friendly
- Moderately user-friendly
- Slightly user-friendly
- Not at all user-friendly

21. Best Features of Android Operating System

- Android Market
- Home Screen Customization
- Voice Search
- Smart Virtual Keyboard
-

22. Best Features of iOS Operating System

- iMessage
- iCloud
- iBook

- iOS Application

23. which Operating system offers better software updates?

- iOS
- Android

24. what are the specific features you like in specific operating system

- Face id
- Installing of apps
- Side loading of apps
- App organization
- Notification management

