Mobile Handset Brand Preference: Empirical Evidence from Meghalaya

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Abstract

This study aims to determine the preferred mobile brand in Meghalaya's Garo Hills. The study included 250 samples that were gathered using a Google form and a specially created questionnaire sent over Whatsapp and email. Additionally, the questionnaire was delivered individually. According to the report, Xiaomi (Mi) is the model handset followed by Samsung, Realme, and these are the top three smartphone brands in the study area. There is no statistically significant difference between the time period and gender of mobile phone use, according to Chi-Square statistic, however there is significant difference between the income level and amount spent on various brands of mobile phones in the research area.

Key words: Preference, Brand, Chi-Square, Significant

I. Introduction

 A mobile handset is a device that allows users to place and receive calls while on the move inside a phone service area via a radio frequency link. The radio frequency link creates a connection to a mobile phone provider's switching system, granting access to the public switched telephone network (PSTN). Today's world has experienced a quick change in mobile phones. The 2G network, which was first utilized at the dawn of the mobile phone revolution, offered services like text messaging, MMS, email, Internet access, short-range wireless communications (infrared, Bluetooth), business applications, video games, and digital photography. India is currently with 1.16 billion subscribers; India possess second-largest telecoms market in the world and experiencing rapid expansion in recent years. In terms of the number of app downloads, India surpassed the US in 2019 to take the second-largest market position. There were 765.09 million internet subscribers worldwide in February 2021, up from 757.61 million in January 2021. There were 742.84 million wireless internet subscribers and 22.26 million wired internet subscribers among this subscriber base. The second-largest telecom market in the world is in India. In February 2021, there were 1187.9 million subscribers nationwide. The third quarter of FY21 saw the telecom sector's gross revenue reach Rs. 68,228 crore (US$9.35 billion). India is predicted to be the fastest-growing telecom advertising market, with an annual growth rate of 11% between 2020 and 2023, per a Zenith Media poll.

In 1980, the first telecommunication begins to reform when private sector was allowed to manufacture telecommunications equipment and the department of telecommunication was established in the year 1985.

II. Literature Review

Bronnenberg, Dube, and Mathew (2010) wrote that an awful lot of consumer's found willingness to pay for brands may additionally reflect that may have an impact on of previous experiences. Heterogeneity in manufacturer capital explains a big share of geographic variant in purchases. Brand capital evolves endogenously as a feature of customer's lifestyles histories, and decays slowly as soon as formed. Brand capital can provide an explanation for large and long lasting

benefits to first movers. Brand preferences play a particularly vital role in classes with excessive levels of advertising and social visibility.

Chen and Chang (2008) observed that Brand equity has extensively tremendous effect on each brand choice and brand loyalty. The effect of brand equity on purchase intention is also significant.

DelVeccio, Henard, Freling (2006) quoted that sales promoting neither a positive nor a bad impact on brand preference beyond the promoting period. While the usual suggest effect is not statistically significant this does not suggest that income promotion do not have an effect on manufacturer preference. Consistent with the notion that multiple mechanism can also have an effect on put up promoting preference. Sales merchandising either undermines or augments company preference relying on the promotion and the characteristics of the product being promoted.

Paulo, Duarte and Mario (2010) quoted that several factors contribute to company preference, especially those associated to company identity, personality and image and their congruence with consumer self image. The primary direct outcomes on company preference are the self image congruence and the identity/ persona and image of the brand. In addition to those, the level of involvement, social environment, threat perception, demographic profile, and product visibility additionally exhibit a positive effect on manufacturer preference.

Sriram, Chintagunta and Neelamgham (2004) found that intrinsic brand preference have a great deal bigger impact on the performance of the company than the inclusive value which displays model stage prices, product attributes, and the size of the brand's product line. Further they found that some manufacturers can expand their marketing expenditure and nonetheless increase their profitability.

Study Area

A study of the Mobile handset brands in West Garo Hills District of Meghalaya has been conducted from the North Eastern Region of West Garo Hills district of Meghalaya. Shillong is the capital of Meghalaya and is located at an altitude of 1496 meters above sea level. The total area of Meghalaya covers 22,429 per sq.km with population density of 132 per sq.km. Out of total population 79.93% of population lives in urban area and 20.07% lives in rural area. There are 0.58% Schedule Caste (SC) and 86.15% Schedule Tribes (ST) of total population in Meghalaya. The Garo Hills hold a total area of 9026 sq.km. West Garo hills is the only part of urban area in Garo Hills consisting of 18.3 sq.km while the remaining 9026 sq.km falls under rural area. The latitude of West Garo Hills is 25.567938 and the longitude is 90.224464, West Garo Hills has a sex ratio of 979 females for every 1000 males,

Objectives of the study:

- To know the customer brand choice by gender, age, locality and profession
- To know the model mobile brand(s) in the study area
- To study the brand preference by income level of the customer in the study area

III. Research methodology & Design

Sampling methodology

Sample Size-150 respondents

Sample Unit- People of West Garo Hills has been taken as sample unit.

Sampling Area- West Garo Hills

Sampling Technique- Simple random technique was used inside the study area and then different approach was used to distribute the questionnaire to collect the data

Data Collection

To collect the data, questionnaire in google form to rural and urban people of district West Garo Hills was distributed through whatsapp individually, whatsapp group, e-mail and also link was distributed by interviewing in person. Secondary data sources like catalogue of the company, product range book of the company & various internet sites are used to collect the information.

Chi-Square statistic

Based on the observed frequencies $O_i(i=1,2,3,.....n)$ and the corresponding expected frequencies $E_i(i=1,2,3.....n)$,the $\chi 2$ statistic is computed as
$\chi 2 = \sum (O_i - E_i)2/ E_i$ with n-1 degrees of freedom.

IV.Data Analysis and Interpretation
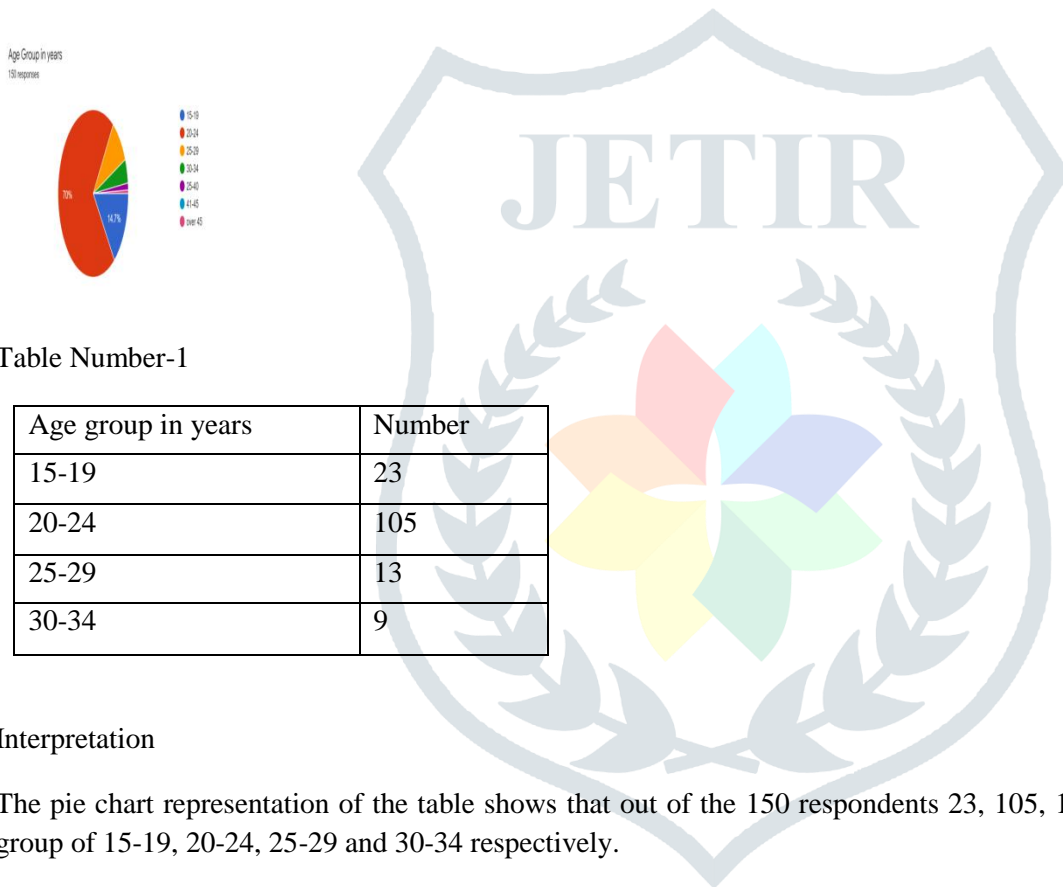
Q-1 Age Group in Years

Table Number-1

Age group in years	Number
15-19	23
20-24	105
25-29	13
30-34	9

Interpretation

The pie chart representation of the table shows that out of the 150 respondents 23, 105, 13 and 9 people fall in the age group of 15-19, 20-24, 25-29 and 30-34 respectively.
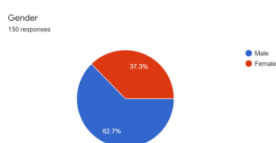
Q-2 Sex ratio of the respondents

Table Number-2

Particular	No of respondent
Male	94
Female	56

Interpretation

The pie chart representation of the table shows that out of 150 respondents 94 are male and 56 are females

Q-3 where do you live at present? Rural or Urban

Where do you live at present ? Please specify
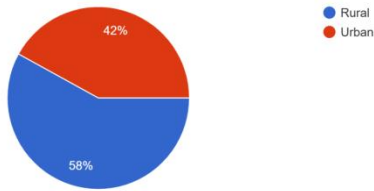150 responses

Table Number-3

Area	Number
Rural	90
Urban	60

Interpretation

The pie chart representation of the table shows that out of 150 respondents 90 of them live in rural area and 60 of them live in urban area.
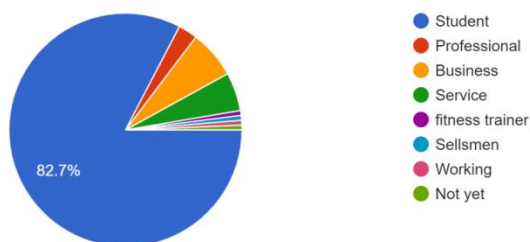
Q-4. Occupation?

Occupation
150 responses

Table Number-4

| Particulars	Number
Business	11
Professional	5
Service	8
Students	126

Interpretation

The pie chart representation of the table shows that out of the 250 respondents 126 are students, 8 are into service, 5 are in professional line and 11 are doing business

Which brand of mobile phone you are using ?
150 responses
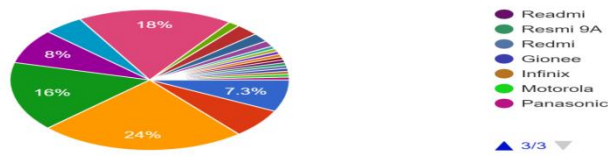
Q.5) which brand of mobile phone you are using?

Particulars	Number
Iphone	10
One Plus	15
Oppo	15
Realme	30
Samsung	30
Vivo	15
Xiaomi (Mi)	35
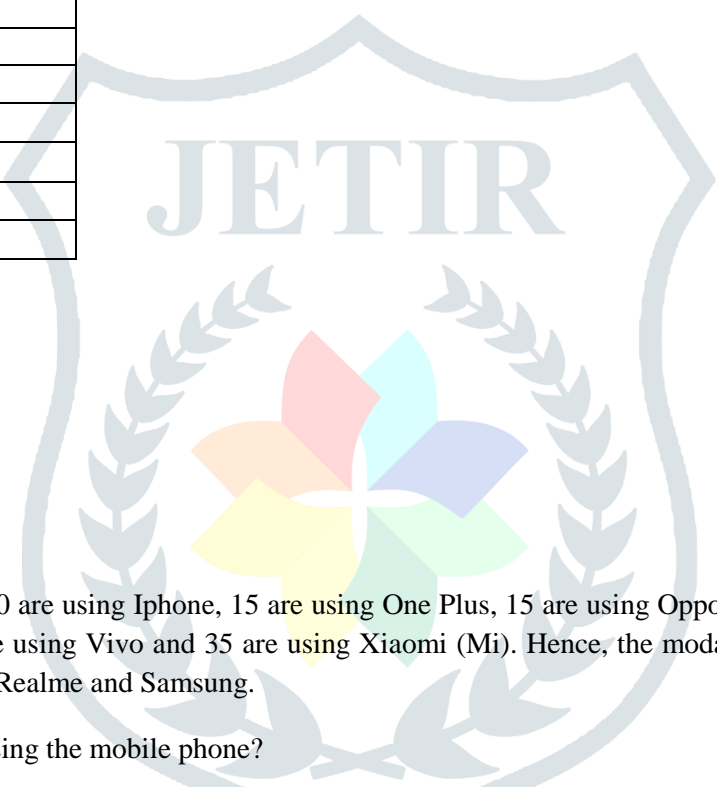
Interpretation

Out of 150 respondents, 10 are using Iphone, 15 are using One Plus, 15 are using Oppo, 30 are using Realme, 30 are using the Samsung, 15 are using Vivo and 35 are using Xiaomi (Mi). Hence, the modal handset in the study area is Xiaomi (Mi) followed by Realme and Samsung.

Q.6) How long you are using the mobile phone?

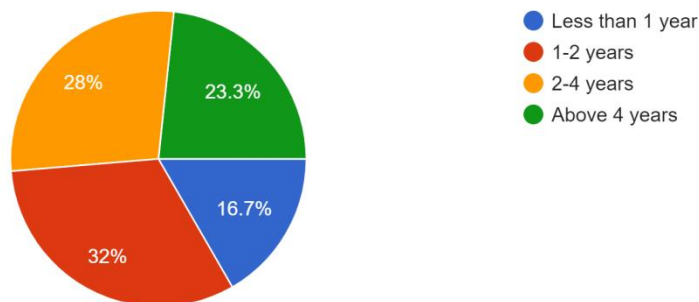How often do you change your mobile phone
150 responses

Table Number-6

Sl no.	Time Period of using the mobile phones	Number of the Respondents
1	Less than 1 year	57
2	1-2 yeras	28
3	2-4 years	21
4	Above 4 year	44

Interpretation

Out of 150 respondents 57 are using for less than 1 year, 28 are using for 1-2 years, 21 are suing for 2-4 years and 44 are using for more than 4 years

Q.7) How much will you willing to pay for a mobile phone?
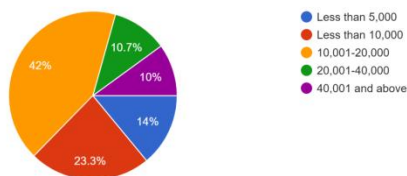
Particular	Number
Less than 5,000	20
Less than 10,000	35
10,001-20,000	63
20,001-40,000	15
40,001 and above	17

Interpretation

The pie-chart representation of the table shows that out of 150 respondents, 20 are willing to pay less than 5,000, 35 are willing to pay less than 10,000, 63 are willing to pay 10,001-20,000, 15 are willing to pay 20,001-40,000 and 17 are willing to pay 40,001 and above

Chi-square Analysis

Chi-Square test on the relationship between the time period and the gender of using the mobile phone

Gender	Less than 1 year	1-2 years	2-4 years	More than 4 years	total
Male	31	35	18	12	96
Female	11	22	11	10	54
Total	42	57	29	22	150

Here, H_0: there is no statistically significant difference between the time period and gender of using the mobile phone.

H_1: there is statistically significance difference between the time period and gender of using the mobile phone.

Now let us prepare the following chi-square table

O_i	E_i	$(O_i - E_i)^2 / E_i$
31	26.88	0.631488095
11	20.52	4.41668616
35	36.48	0.06004386
22	20.52	0.106744639
18	18.56	0.016896552
11	10.44	0.030038314
12	14.08	0.307272727
10	7.92	0.546262626
$\sum(O_i - E_i)^2 / E_i = 6.115432974$		

Degrees of freedom= (row-1)x (column-1)

$$(2-1) \times (4-1) = 3$$

Decision

The calculated value of chi-square statistic is 6.12 which is less than the tabulated value 11.34 for 3 degrees of freedom at 0.01% level of significance. So, we have no evidence to reject our null hypothesis. In other words there is no statistically significance difference between the time period and gender of using the mobile phone; Using of mobile phone is independent of gender.

Chi-Square test on the relationship between the income level and spending on mobile phones

Income Level/Spending Amount in Rs.	Less than 1 0000	10001-20000	20001-40000	40001 & above	total
Less than15000	39	25	5	7	76
15001-25000	9	15	2	1	27
25001-35000	4	6	4	2	16
35001-45000	2	3	2	4	11
45001 &above	1	13	1	5	20

Now let us prepare the following chi-square table

O_i	E_i	$(O_i - E_i)^2 / E_i$
39	27.86666667	4.44800638
9	9.9	0.081818182
4	5.866666667	0.593939394
2	4.033333333	1.025068871
1	7.333333333	5.46969697
25	31.41333333	1.309343519
15	11.16	1.321290323
6	6.613333333	0.05688172
3	4.54666667	0.526138809
13	8.266666667	2.710215054
5	7.09333333	0.617769422
2	2.52	0.107301587
4	1.493333333	4.207619048
2	1.026666667	0.922770563
1	1.866666667	0.402380952
7	9.626666667	0.716694368
1	3.42	1.712397661

2	2.026666667	0.000350877
4	1.393333333	4.876586922
5	2.533333333	2.401754386
150	$(O_i - E_i)^2 / E_i$	33.50802501

Here, H0: there is no statistically significance difference between the income level and spending amount on mobile phone.

H_1: there is statistically significance difference between the income level and spending amount on mobile phone.

Degrees of freedom= (row-1)x (column-1)

$$(5-1)x(4-1)=12$$

Decision

The calculated value of chi-square statistic is 33.50802501 which is greater than the tabulated value 26.22 for 12 degrees of freedom at 0.01% level of significance. So, with this evidence null hypothesis is rejected. In other words, there is statistically significance difference between the income level and spending the amount for mobile phones.ie the buying behaviour of the Mobile phone brands depends on income level.

V. Findings & Suggestions

- From the above data analysis it is found that Xiaomi(Mi) is the most preferred brand in the study area.
- Out of 150 customers 57 customers, 28 customers, are using their mobile phone for 1 year and 1-2 years respectively.
- Out of 150 ,63 customers are willing to pay Rs. 10,001 – Rs. 20,000 for a mobile phone
- Most people use the mobile phones for talking, SMS, social media, camera and gaming.
- Al most all people are aware of about the 4G, money payment system, GPRS, camera and gaming.
- Nokia should provide better service and try to fix the hanging problem.
- Consumers are not satisfied with the promotional policies of the companies. So the company should take some strategy to improve the service quality.

VI. Conclusion

Based on small sample size 250 in the study area Xiaomi (Mi) is found as model brand mobile handset. Using Chi-squared statistic, it is found that there is no statistically significant difference between the time period and gender of using the mobile phone but there is statistically significant difference between the income level and spending the amount for different brands of mobile phone.

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