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Consumers Attitude towards Refurbished Mobile Phones: A Market Study

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Abstract: ***We understand that purchasing refurbished or new state-of-the-art electronics has become a major source of concern for both purchasers and environmentalists. We continue to take and utilize the planet's natural resources in unprecedented ways to create our technology. Organizations are more concerned as time goes on, about the circular economy as global sales continue to rise year after year. As a result, both producers and consumers in virtually every economic area are looking for new and environmentally friendly options. They want to assist reduce the environmental impact. New initiatives include purchasing reconditioned phones and tablets, the ability to upgrade your smartphone's components, and the production of a greater number of eco-smartphones. At the same time, you'll be able to save money. It is certainly worth considering. In this article we have studied the consumer behavior towards refurbished mobiles and tablets in Bhubaneswar. A sample of 110 was considered for this study and it was found that refurbished mobiles have grown in popularity, and the reasons for this have been discovered to be concern for the environment and circular economy in addition to saving money.***
Keywords: Circular economy, Gig economy, Value proposition, Refurbished products, Societal economy

I. INTRODUCTION

Over the past decennium, the emergence of the circular economy has taken away the laser sharp attention of the researchers, especially when we talk about the momentary efforts to make the world a better place to live. The ‘up-rise’ of the circular economy went hand in hand with much debatable chaotic confusion across different segments in scientific practice & application. With this insightful article, we hope to contribute to the discipline's neo-advanced clarity and provide a heuristic in the context of refurbished products. We begin by looking at the history of the intertwined concepts of circular economy, value proposition, and retention for products and materials aiming for accelerated circularity. We seek to separate the several stages of the circular economy's evolution and suggest that the notion is the millennium's next big thing. Subsequently, we summarize the differential perspectives of increased circular economy in practice by taking up a more dynamic role in achieving consensus in conceptualizing the circular economy.

We understand how critical it is to keep our gadgets updated and equipped with the most up-to-date features. The smartphone replacement cycle is lengthening as a result of a lack of a circular economy strategy. We use them for nearly everything, including business, so it's no surprise. How could you not have the most up-to-date specifications on your smartphone if it affects the way you do your job?

In any case, most customers upgrade their smartphones two to two and a half years after purchasing a new handset. It happens significantly more frequently than with other devices and appliances. We didn't question it because we were caught up in the buying and selling excitement at the time. We went to the store to acquire a new smartphone when one became available. Every action, however, has a consequence, and this one is particularly important: the effects on climate change. Extracting raw minerals is challenging, as it necessitates substantial mining and excavating into the ground. These resources are sometimes extracted by countries in challenging political or socioeconomic situations. When the materials reach the market, they inflict significant direct and indirect harm, not just in terms of carbon footprint and CO2 emissions but also it saves energy and fuel. By purchasing a reconditioned smartphone, you are actively helping to reduce e-waste. You're also helping to break the cycle, which is especially important given that some electronic parts aren't recyclable. Even if corporations can recycle the components of a discarded smartphone, the process is expensive and time-consuming. Another source of CO2 emissions is the energy required to recycle materials. It is possible to avoid it by purchasing refurbished goods. The global refurbished smartphone market grew 15% year over year, with Latin America and India leading the charge, and Apple retained its dominance in the secondary market as Samsung closed in. According to a new estimate released recently, the refurbished or used smartphone industry in India is predicted to reach $10 billion by 2026. According to Bengaluru-based market research firm Redseer, the whole used electronics market is expected to increase at a 16 percent compound annual growth rate (CAGR) to $11 billion by 2026.

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II. LITERATURE REVIEW

Mugge, Jockin, and Bocken (2017) and van Weelden, Mugge, and Bakker (2017) conducted relevant investigations into the intentions of acquiring refurbished mobile phones (2016). Both studies found that knowing about refurbishing and having a lower perceived environmental impact influenced purchase decisions.

Our goal was to figure out which premium or extra features can make remanufactured and reused products more appealing to purchasers. Our findings support previous research on quality concerns (Bundgaard & Huulgaard, 2019), trust (Kuah & Wang, 2020), and functionality (Mugge et al., 2017) of repurposed electronic products, and extend the conversation by identifying a specific set of product attributes that are worth investing in as demand drivers for circular offers.

The two-dimensional structure of refurbished smartphone perceived value is based on perceived incentive and quality, as well as perceived advantage and risk. Finally, various solutions offer to improve customer views and minimize misconceptions about the refurbishment concept, which refurbishers and marketing managers can utilize to build and promote correct products and strategies (Nasiri, Mohammad Sadegh & Shokouhyar, Sajjad, 2021).

Consumers make judgments about a product's performance quality based on its look (Mugge 2011; Mugge and Schoormans 2012; Page and Herr 2002). Consumers view products with a less appealing appearance to be of lesser quality, according to these studies. Because the presence of wear and tear on (electronic) devices is often seen as unsightly, consumers' perceptions of reconditioned electronics are likely to suffer as a result of these inferences about reduced quality.

Visual information about earlier use, such as wear and tear, is often used in the second-hand market to assess the risks associated with a product acquisition (Derbaix 1983; Gabbott 1991). When buying a used car, for example, consumers use visible and verifiable cues such as dents and scratches on the exterior to gather information about invisible and unverifiable cues such as how the car was used by the previous owner(s), and thus as indirect cues in assessing its technical components and functioning.

Consumers consider refurbished products to be riskier and more uncertain than new products (Hamzaoui Essoussi and Linton 2010; Ovchinnikov 2011; van Weelden, Mugge, and Bakker 2016).

III. OBJECTIVE

We have made this study with an objective of finding out the following points:

1) To find out which factors are most significant for buying refurbish mobile phones.
2) To assess what are the most preferred refurbished brands.
3) If income of buyers play a significant role in buying decision of refurbished mobiles.
4) Whether education and reasons to buy refurbished mobiles have a significant relation.

IV. METHODOLOGY

A convenience sample of 110 is considered for the study. The study was conducted in Bhubaneswar. The data was collected through online using questionnaire method. The data is analyzed using percentage analysis and chi square analysis. Chi square analysis is used to know whether income and buying decision of refurbished mobiles are related and if there is any significant relation between education and buying decision of refurbished mobiles. All the respondents were in between the age group of 15 to 55 years.

V. DATA ANALYSIS

The following table - 1 shows education of all the respondents. It can be seen that 38% of the respondents are graduate which is maximum followed by post graduate which is 32%.

Table -1

Education	No. of Respondents	Percentage
Under graduate	30	27.27
Graduate	42	38.18
Post Graduate	35	31.82
Others	3	2.73

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Table -2 is showing the income levels of respondents. We have 52% respondents in the income range of 30000 to 50000 which is maximum followed by 25% respondents belong to income range of 50000 to 80000.

Table -2

Income	No. of Respondents	Percentage
Upto 30000	19	17.27
30000 to 50000	57	51.82
50000 to 80000	28	25.45
Above 80000	6	5.45

In Table – 3, we can see the factors that are important which stimulates the buying decision of refurbished mobiles. From these factors most significant factor for buying refurbished mobiles is “saves money” that accounts for 48%. “Concern for environment” is the next significant factor which accounts for 25% approximately. So it is seen that saving money and concern for environment are two major factors that motivates people to buy refurbished mobile phones. Probably people are not aware about other factors much such as – “boost circular economy”, “reduces CO2 emissions”, “Avoids e-waste”, and “saves energy”.

Table -3

Reasons for buying refurbished mobiles	No. of Respondents	Percentage
Boost circular economy	5	4.55
Reduces CO2 emissions	5	4.55
Avoids e-waste	9	8.18
Saves energy	11	10
Saves money	53	48.18
Concerns for environment	27	24.55

It is clearly seen from Table – 4 that Apple and Samsung are two brands which are mostly preferred for refurbished mobile phones. 50% of the respondents go for Apple phones followed by 33% of the respondents prefer Samsung mobiles while buying refurbished phones.

Table - 4

Preferred Brands	No. of Respondents	Percentage
Apple	55	50
Samsung	36	32.73
One Plus	12	10.91
Others	7	6.36

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Table – 5 and Table – 6 shows the result of chi-square test for knowing whether there is any relationship between income and decision to buy refurbished phones. It is seen that Table – 5 is the observed data and Table -6 is the output of chi-square analysis. From Table – 6 it is seen that the p-value of the chi-square test is 0.008 which is less than 0.05. So, the null hypothesis is rejected here. We can conclude that there exists a relationship between income and decision to buy refurbished mobile phones.

$H0_a$: There is no relationship between income and decision to buy refurbished mobile phones

$H1_a$: There is a relationship between income and decision to buy refurbished mobile phones

Table -5

Income/ Decisison	Yes	No	Total
Upto 30000	11	8	19
30000 to 50000	40	17	57
50000 to 80000	16	12	28
Above 80000	0	6	6
Total	67	43	110

Table - 6

Income/ Decisison	Yes	No	Total
Upto 30000	11.57	7.43	19
30000 to 50000	34.72	22.28	57
50000 to 80000	17.05	10.95	28
Above 80000	3.65	2.35	6
Total	67	43	110
p value	0.008708779		

Table – 7 and Table – 8 shows the result of chi-square test for knowing whether there is any relationship between education and reasons to buy refurbished phones. The observed data is in Table – 7 is and Table - 8 is the chi-square output. From Table – 8 it can be seen that the p-value of the chi-square test is 0.012 which is less than 0.05. So, the null hypothesis is rejected here. We can conclude that there exists a relationship between education and reasons to buy refurbished mobile phones. That means it is not that everyone looks for saving money, other factors are important as well.

$H0_b$: There is no relationship between education and reasons to buy refurbished mobile phones

$H1_b$: There is a relationship between education and reasons to buy refurbished mobile phones

Table - 7

Education/ Reasons to buy	Boost circular economy	Reduces CO2 emissions	Avoids e-waste	Saves energy	Saves money	Concerns for environment	Total
Under graduate	0	1	1	5	23	0	30
Graduate	3	3	3	5	14	14	42
Post Graduate	2	1	4	1	14	13	35
Others	0	0	1	0	2	0	3
Total	5	5	9	11	53	27	110

Table - 8

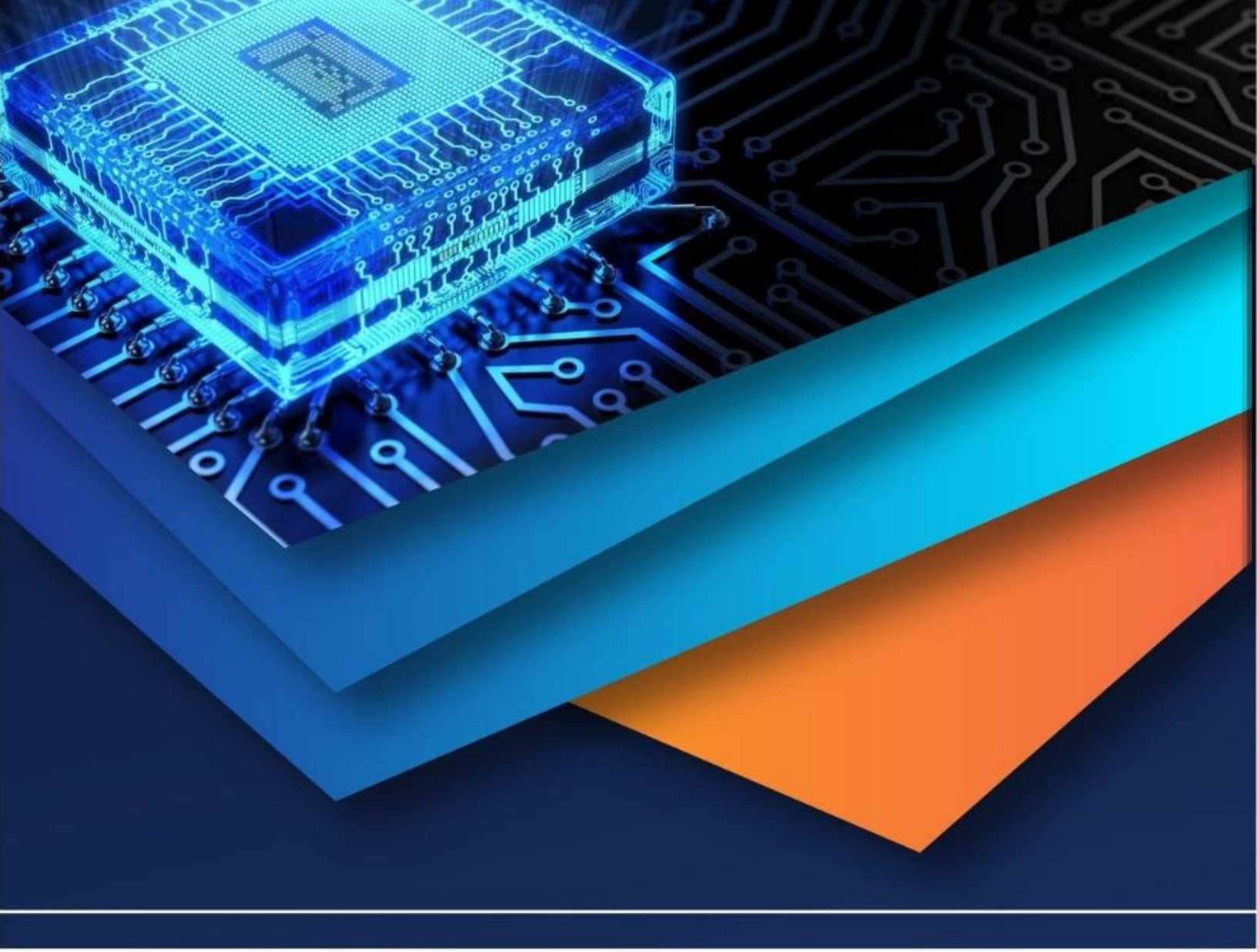
Education/ Reasons to buy	Boost circular economy	Reduces CO2 emissions	Avoids e-waste	Saves energy	Saves money	Concerns for environment	Total
Under graduate	1.36	1.36	2.45	3	14.45	7.36	30
Graduate	1.909	1.909	3.43	4.2	20.23	10.309	42
Post Graduate	1.59	1.59	2.86	3.5	16.86	8.59	35
Others	0.136	0.136	0.245	0.3	1.44	0.736	3
Total	5	5	9	11	53	27	110
p value	0.012						

VI. CONCLUSION

The 'up-rise' of the circular economy went hand in hand with much debatable chaotic confusion across different segments in scientific practice & application. Organizations are becoming increasingly concerned about the circular economy as global sales continue to rise year after year. As a result, both producers and consumers in virtually every economic area are looking for new and environmentally friendly options. They want to assist reduce the environmental impact. New initiatives include purchasing reconditioned phones and tablets, the ability to upgrade your smartphone's components, and the production of a greater number of eco-smartphones. At the same time, you'll be able to save money. In the study it has been found that 38% of the respondents are graduate which is maximum followed by post graduate which is 32%. 52% respondents in the income range of 30000 to 50000 which is maximum followed by 25% respondents belong to income range of 50000 to 80000. It has been found that the major factor stimulating the decision of buying refurbished phones is "saves money" that accounts for 48% and "Concern for environment" is the next significant factor which accounts for 25% approximately. 50% of the respondents go for Apple phones followed by 33% of the respondents prefer Samsung mobiles while buying refurbished phones. We have found from the analysis that there exists a relationship between income and decision to buy refurbished mobile phones. We can also conclude that there exists a relationship between education and reasons to buy refurbished mobile phones. That means it is not that everyone looks for saving money, other factors are important as well.

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