

Understanding Consumer Behaviour Through Neuromarketing : A Strategic Approach Towards the Mobile Phone Industry

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Abstract

The mobile phone industry is one of the most booming sectors today. A majority of the tasks can be performed with these devices, and as a result of that, the demand of the electronic gadgets in the market is humongous. Neuromarketing is a relatively uncharted territory wherein organizations are exploring to get the job done within a short period of time. With the help of neuromarketing tools, understanding the consumers' perception is made possible by implementing certain analytical techniques. Analysis of this data would help immensely to satisfy the demands of the consumers. With this technology, organizations would be able to bring in innovative features in their products, which would attract consumers. Also, with the advent of new technological innovations, consumers want innovative features to be embedded in their products, and this is possible with the help of neuromarketing tools. These tools also help the companies to achieve good results which further help them to achieve a competitive edge over their competitors in the market. This paper aimed at identifying the factors which had a positive impact on the consumer behaviour by the utilization of the neuromarketing tools in the mobile phone industry. Both primary and secondary data were utilized in this paper. Analysis of the data was done through exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) with the help of softwares like SPSS-23 & AMOS-23.

Keywords : neuromarketing, consumer behavior, strategy, mobile phone industry

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The application of neuroscience in various marketing activities is referred to as neuromarketing. The objective of a neuromarketing strategy is to explicitly understand the customers. It helps the organizations to better understand the cognitive processes of a customer about a particular product or service. In the field of marketing, this understanding of the customer's motivations, preferences, and expectations could be of great help to an organization. It is responsible for directly affecting the failures or the successes of the advertising messages put forward by the organizations. Neuromarketing is described as an innovative and new form of market research that helps the organizations to read the consumer behaviour and strategize accordingly. Certain parameters like emotional engagement, attention level of the respondents, as well as the memory storage could be measured with the help of neuromarketing (Rodrigues, 2011). This concept was introduced in 2002 by Brighthouse, which is an advertising firm situated in Atlanta, USA. It had its basis in neuroscience research and it

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had its manifestation in neuroculture. However, it must not be forgotten that the buying decisions of the consumers are taken in split seconds. Neuromarketing could influence the decision making of the consumers. There are various other applications of neuromarketing.

Neuromarketing is a relatively new field, however, it is being rapidly utilized by the organizations in order to understand the consumer behaviour. It has numerous advantages. Unlike surveys, it does not rely on self-reports wherein the subjects might not be able to articulate their subconscious motives as they fail to identify them. Neuromarketing collects all the data from the brain of the individuals. It does not take into account the introspection, ego, and emotions of individuals. As a result of this, the number of errors is reduced drastically and the efficiency of any marketing strategy also increases.

Neuromarketing also focuses on the method of learning to a great extent. The process of learning is directly related to memory information. This method incorporates the transferring of information from the short term memory to the long term memory. Thus, the goal of the marketing officials is to transfer the short-term memory of an individual for a particular product or service to their long-term memory. This is the major objective of branding and advertisements. This process is facilitated if a social message is attached with that of the advertisement. Incorporation of the neuromarketing tools can help with this objective.

Thus, it is clear that neuromarketing is used by organizations in order to predict the behaviour of the consumers pertaining to a particular product or service. Neuromarketing is used by neurologists, brain scientists, Facebook, Google, and many more organizations. This technology is also used by various advertising agencies and other R and D departments in companies such as Unilever, P & G, Coca Cola, etc.

Neuromarketing is a relatively new field which is still evolving. Various industries have been implementing this technique in their organizational processes, however, many organizations remain unaware about this technology. The mobile phone industry is one of the fastest growing sectors in the telecommunications sector and is one of the sectors that are implementing this technique successfully. Today, people cannot imagine their lives without mobile phones. There are multiple brand names associated with the market; however, in order to get a competitive edge, neuromarketing is the way forward. Multiple functions are present within mobile phones. In order to sustain in the market, the buying behaviour of the customers needs to be predicted and accordingly, the products need to be modified to suit their needs. This goal could be achieved with the help of neuromarketing tools.

The aim of this study is to identify the factors that lead to positive consumer behaviour with the implementation of various neuromarketing techniques. Any organization today generates a lot of data on a daily basis, however, due to the technological constraints, this data cannot be put to use. With the help of neuromarketing tools, this data can be utilized for the betterment of the organizations, and it is a very well-known fact that the progress of the individual organizations would help in boosting up the economy as a whole.

Literature Review

Neuromarketing has been successful in giving significant inputs in many marketing functions such as pricing, consumer buying behaviour, new-product development, advertising, distribution of products, and product design. In this era of digitization, marketing strategies are developed with the amalgamation of three fundamental areas. These areas are neuroeconomics, neuroscience, and neuromarketing (Roth, 2013). These three areas give the data for objective analysis, which leads to the designing of feasible strategies. These strategies are responsible for attracting more and more consumers (Kumar & Kaushal, 2019).

Research studies indicate that there is a deep qualitative impact of neuromarketing upon the fields of promotion and advertisement. It basically impacts the decision making of the individuals, and as such, it can be used as a marketing tool (Alexander et al., 2019). The concept of mass marketing and advertising is continuously decreasing; whereas, the concept of neuromarketing is being implemented by more and more organizations

nowadays (Sarker et al., 2013). The environment is composed of two systems : an affective system and a cognitive system. The affective system gives affective responses such as emotions, feelings, moods, evaluation, etc. The cognitive system gives cognitive responses such as knowledge, beliefs, and meaning. Branding and advertisements aim at the cognitive processes as they stay embedded in the minds of the people for a long time. Cognitive learning encompasses the formation of attitudes, opinions, making the buying decisions, reacting positively or negatively to a marketing stimulus, and so on (Yeoh & Allan, 2020).

Neuromarketing helps in the study of the cognitive and emotional responses generated out of the customers by the application of marketing stimuli (Kumar et al., 2017). This could help in understanding the attention of the consumers and to where it is directed. The cognitive processes significantly help an organization to design a product which would be suitable for the market. Studies have suggested that cognitive learning could be used as a positive motivator for consumer behaviour (Batkoska & Koseska, 2012). Neuromarketing tools help to identify the consumer preferences relative to particular products or services. This is extremely difficult to do as the consumer landscape is changing constantly; however, neuromarketing tools help to garner the most effective solutions to the problems. These tools are mainly concentrated in the fields of segmentation, positioning, and targeting of the market. Accordingly, marketing strategies are developed and implemented (Nair & Shanthi, 2018). The consumer buying behaviour and purchase decisions are also understood in detail. The marketing efficacy is improved by multiple folds. Consumers are increasingly becoming pivotal for creating innovative solutions for their demands and needs. So, it becomes extremely important to analyze their needs as their demands are scaling up. Understanding the preferences of the consumers would help the organizations in development of a product which will be sellable in the future. So, close attention needs to be paid to the consumers (Giri et al., 2018 ; Moors & Donders, 2009). Also, consumer preferences positively influence their buying behaviour (Giri et al., 2020). Product design plays a very important role in influencing the perception of the customers towards a particular product or service (Mugge, 2018).

Neuromarketing tools help the organizations to stimulate the different benefits as well as remove certain barriers and concerns which hinder the buying behaviour of the customers. Neuromarketing helps the companies and designers of the products to gather relevant data from the consumers to do this (Dursun & Goker, 2019). The tool of neuromarketing identifies the key user behaviours related to a particular product. It helps the organizations to take care of their products by maintaining the quality level of the products and services. Also, new product designs are worked upon so that they could be at par with the expectations of the customers. An emotional attachment of the products with that of the users is also generated, which ultimately leads to brand loyalty. The retention of the existing customers is made very easy and the buying decision making of the new consumers is also influenced. However, a study revealed that in the cell phone industry, the buying behaviour was influenced by the switching tendencies of the consumers and this, in turn, severely impacted the brand loyalty (Nandi & Pattanayak, 2015). Buying decisions made by the customers are not totally rational. These decisions are taken by the brain and they are influenced by some thoughts and emotions of the consumers. The consumers themselves are not aware of these processes as they are taken deep within their subconscious (Randall et al., 2010). Recent studies have revealed that the buying decisions of the consumers are indirectly influenced by factors like features, price, service, brand, etc. with respect to the mobile phone industry (Agarwal et al., 2019).

Decision making on the consumer choices mainly depends on three variables. They are time, uncertainty, and social interaction. Time is one of the most decisive factors pertaining to consumer choice. This variable is most prominent during discount situations or the self-control of the consumers which hinders their buying decision. Similarly, uncertainty about a particular product or service could also delay the buying decision of the consumer. This is because the consumers want to avoid loss under any condition. As a result of this, they tend to stick to their current situation until and unless the situation says otherwise. Finally, strategic interactions are also one of the explanatory variables, which are considered for decision making. It directly impacts the consumers' decision that

whether to go for buying a product or not. All these variables are greatly influenced by neuromarketing. It takes into account the behavioural economics and computes the most likely result which would unfold in the future. The tools of neuromarketing give accurate results as these take into account the irrationality of the consumers as well. In this manner, the entire brain processes related to the consumer buying decision, which goes on in the brain of the consumers, is predicted, thus making it easier for the organizations to pitch in their sales propaganda. Thus, decision making is the final stage wherein the consumer decides whether to go for a product or not. Through the help of neuromarketing, the decision-making processes of the consumers could be facilitated (Jordão et al., 2017). In this manner, neuromarketing could be of great help to the organizations as it is immensely helpful in the testing of numerous advertisement campaigns, test campaigns, etc. with the help of neuroscience. It incorporates various disciplines like quantitative methods, economics, psychology, biology, pharmacology, etc. to come up with the most probable answer to a question (Mehta & Panda, 2015).

Product marketing strategies are regarded as the fundamental goals of increasing sales. It helps them to achieve a sustainable competitive advantage in the market. Neuromarketing has opened up certain avenues to get information from the consumers, which is very difficult to obtain by traditional methods. This information could help in the build-up of a product marketing strategy. It could also suggest various ways to market a product in the market before its launch (Ariely & Berns, 2010). Neuromarketing techniques could contribute a great deal in the analysis of the internal as well as the external strengths of the companies, competition in the market, both in the domestic as well as the international markets, shifts in the industry culture, changes in the technologies which are currently being used in the industry, and so on. Brand performance is directly related to the performance of the organizations. The image of the brand is considered as an implied tool which is responsible for changing the buying behaviour of the consumers in a positive manner. Brands are intangible assets of the organizations, though they are considered as one of the most valuable assets (Chakraborty et al., 2020). Neuromarketing tools could be used to increase the brand performance of the organizations (Telang et al., 2018). These techniques could be used to utilize the brands to simplify the choices of the customers between their alternatives ; can also be utilized to promise a particular quality level to that of the customers ; and also to garner trust. They could also be used to reduce the risk of the products in the market. Thus, an increase in the brand performance would definitely lead to the construction of a positive consumer behaviour in the market.

Understanding consumer behaviour is a critical process as it consists of multiple stages. Various internal as well as external factors play an important role in influencing the purchase decisions of the consumers (Kumar et al., 2014). Studies suggest that various factors such as social factors, physical factors, as well as marketing mix elements are strongly related with the purchase decision of the consumers in the electronic appliances market (Furajji et al., 2012). It has also been observed that advertisements and branding are very crucial in affecting the perception of the people regarding a particular product or service. They help to create awareness in the minds of the people about a certain product or service (Victor et al., 2018). According to a recent study, cell phones as well as laptops are found to be the most popular electronic gadgets nowadays (Savita & Sheoran, 2020). Hence, a lot of firms have been concentrating on developing marketing strategies for these products. The customer base could be increased further, which would help the organization to obtain a competitive advantage over its competitors. This would attract loyal customers who would stick to the company in the future because of the services they are offered in the future. Thus, the organizations would be able to sustain in the market for a prolonged period of time.

Research Gap

The mobile phone industry is a thriving industry today which has a wide array of customers. However, the extent to which the neuromarketing tools help the mobile phone industry in understanding the consumer behavior remains to be seen as limited research has been conducted in this area. One of the primary unique features of this study is

that it looks at the application of the neuromarketing tools, specifically in this particular industry. This paper aims at understanding the factors that affect the consumer behavior in a positive way when the neuromarketing tools are being implemented in the mobile phone industry. The needs and wants of the consumers change every day and it is extremely difficult to measure them. As a result, neuromarketing tools are being extensively used in this particular industry. For this study, data were collected from the employees of the mobile phone industry and it is understood that they were able to provide the best inputs regarding the needs and demands of the consumers in the mobile phone industry. They were also able to highlight certain trends which are present in this industry. Previous studies did not emphasize these areas which have been mentioned above.

Hypotheses Development

- ✍ **H01** : Facilitating the decision making process positively influences consumer behavior.
- ✍ **H02** : Building effective marketing strategies positively influence consumer behavior.
- ✍ **H03** : Understanding the cognitive process positively influences product designing & innovation.
- ✍ **H04** : Understanding consumer preferences positively influences product designing & innovation.
- ✍ **H05** : Increasing brand performance positively influences consumer behavior.
- ✍ **H06** : Product designing & innovation positively influence consumer behavior.
- ✍ **H07** : Consumer behavior positively influences the increase in sales.

Research Methodology

For executing this research, both primary and secondary data were used. It is a cross-sectional research.

Questionnaire Construction

In this study, primary data were collected using a structured questionnaire using a 5- point Likert scale (*Strongly Agree*-5 to *Strongly Disagree*-1). This questionnaire was prepared with the help of different variables under different factors mentioned in Appendix 1A.

Here, the sample elements (respondents) were marketing professionals (Marketing and Sales Managers who identify the strategies used to attract customers for maximizing profits and market share of a business) from renowned mobile phone companies in India like Samsung, Xiaomi Mobile, Lenovo (Motorola), Nokia, Vivo, Oppo, Apple, and OnePlus. Here, the convenience sampling technique was used for collecting the primary data. Before that, the sample size was determined through pilot study with 30 respondents. Out of 30 respondents, 28 positive outcomes were received. So the p -value was 93.3% and q -value, determined by $(1-p)$, was 6.7%. The following formula has been used for determining the sample size from an infinite population (Giri & Biswas, 2019).

$$n = \frac{z^2 * p * q}{e^2}$$

where,

n = Sample size,

z^2 = Square of z-table value for 95% confidence level (1.96) as consideration,

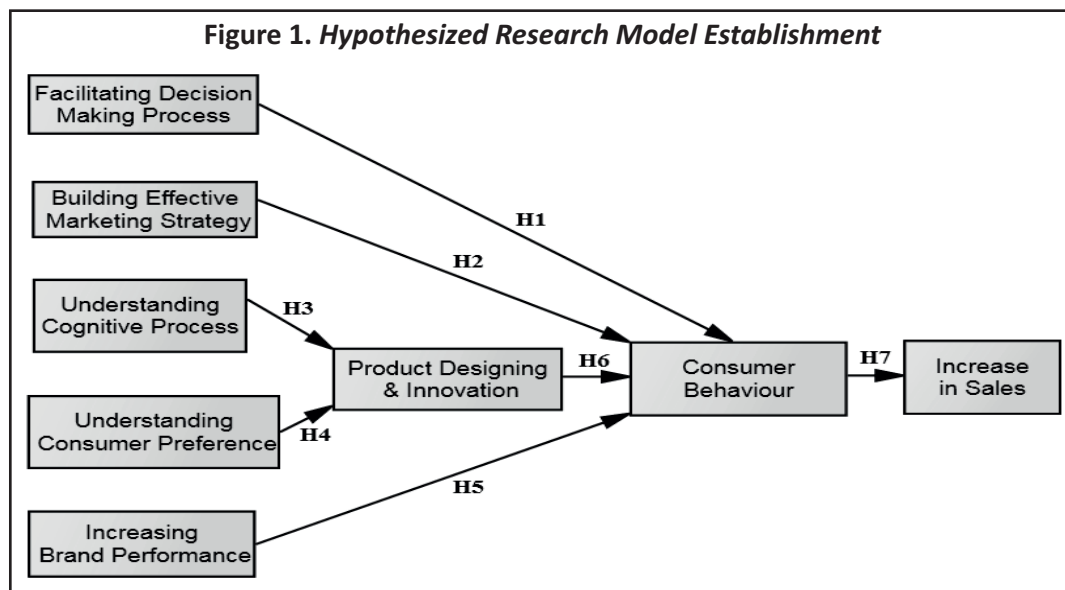
p = Estimated proportion of success (93.3%),

q = Estimated proportion of failure (6.7%),

e^2 = Square of acceptable error between true and sample proportion (5%).

$$n = \frac{1.96^2 * .933 * .067}{.05^2} = 96$$

Depending on this sample size calculation, we decided to collect 100 responses (nearly rounded off number of 96) for this study. The study period was from July – September 2019. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) were executed with the help of SPSS-23 & AMOS-23 as per the research requirement. The hypothesized research model (Figure 1) was created by depicting the hypotheses which are related with the objectives of our research.



Analysis and Results

Reliability Testing

In this study, reliability of collected primary dataset has been tested through Cronbach's alpha value. Here, Cronbach's alpha value of 0.810 (Table 1) shows the tolerable range of reliability which should be more than 0.70.

Table 1. Overall Reliability Statistics

Cronbach's Alpha	No. of Items / Variables
0.810	24

Table 2. KMO Measure of Sampling Adequacy and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		0.766
Bartlett's Test of Sphericity	Approx. Chi-Square	3669.599
	<i>Df</i>	276
	Sig.	<0.001

Validity Testing

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) have been used for validity testing of the questionnaire and factor construction. EFA was used to validate the questionnaire through data reduction method by using principal component analysis and CFA has been used to validate the factors using construct validity with the help of convergent and discriminant method. In this study, Kaiser–Meyer–Olkin measure and Bartlett's test (Table 2) show the appropriateness of execution of EFA and indicates sampling adequacy.

Eight factors with separate variables (containing high factor loading of more than 0.7) have been created by

Table 3. Exploratory Factor Analysis by Principal Component Analysis (PCA)

Factors	Questions/ Variables	Factor Loading (>0.50)	% of Variance Explained
Product Designing & Innovation (<i>PDI</i>)	<i>q10</i>	.937	12.521
	<i>q11</i>	.934	
	<i>q12</i>	.883	
Increase in Sales (<i>IS</i>)	<i>q23</i>	.951	12.306
	<i>q24</i>	.938	
	<i>q22</i>	.925	
Consumer Behaviour (<i>CB</i>)	<i>q1</i>	.948	12.290
	<i>q2</i>	.947	
	<i>q3</i>	.941	
Understanding Consumer Preferences (<i>UC</i>)	<i>q5</i>	.965	11.531
	<i>q4</i>	.957	
	<i>q6</i>	.860	
Increasing Brand Performance (<i>IBP</i>)	<i>q14</i>	.940	11.425
	<i>q13</i>	.939	
	<i>q15</i>	.878	
Facilitating Decision Making Process (<i>FDP</i>)	<i>q17</i>	.945	11.190
	<i>q18</i>	.939	
	<i>q16</i>	.844	
Understanding Cognitive Process (<i>UCP</i>)	<i>q8</i>	.953	10.853
	<i>q9</i>	.941	
	<i>q7</i>	.773	
Building Effective Marketing Strategy (<i>BMS</i>)	<i>q19</i>	.917	10.140
	<i>q20</i>	.873	
	<i>q21</i>	.791	

Note. Extraction Method : Principal Component Analysis (PCA).

Rotation Method : Varimax & Rotation converged in 6 iterations.

Table 4. Validity Testing Results and Squared Correlations by Confirmatory Factor Analysis (CFA)

		Factors / Constructs											
Factors / Constructs		Construct Reliability (CR)	Average Variance Extracted (AVE)	Maximum Shared Variance (MSV)	Average Shared Variance (ASV)	BMS	CB	UC	UCP	PDI	IBP	FDP	IS
	<i>BMS</i>	0.863	0.678	0.090	0.039	.823*							
	<i>CB</i>	0.784	0.548	0.075	0.020	0.137	.740*						
	<i>UC</i>	0.889	0.728	0.281	0.058	-.300	0.006	.853*					
	<i>UCP</i>	0.869	0.690	0.165	0.035	-.016	0.125	0.192	.831*				
	<i>PDI</i>	0.858	0.669	0.281	0.067	-.090	0.081	0.530	0.406	.818*			
	<i>IBP</i>	0.882	0.713	0.055	0.016	0.235	0.092	0.001	0.087	0.039	.845*		
	<i>FDP</i>	0.917	0.786	0.081	0.022	0.168	0.116	-.035	-.118	-.076	0.095	.886*	
	<i>IS</i>	0.819	0.601	0.081	0.038	0.270	0.273	0.011	0.065	-.014	0.173	0.285	.775*

Note. Building Effective Marketing Strategy (*BMS*) ; Consumer Behaviour (*CB*) ; Understanding Consumer Preferences (*UC*) ; Understanding Cognitive Process (*UCP*) ; Product Designing & Innovation (*PDI*) ; Increasing Brand Performance (*IBP*) ; Facilitating Decision Making Process (*FDP*) ; Increase in Sales (*IS*).

* Diagonal elements are square root of average variance extracted (AVE).

EFA using PCA (principal component analysis) and VRM (varimax rotation method). A total of 92.256% of variance in the research model can be explained by the extracted factors (Table 3).

CFA has been conducted to evaluate CR (construct reliability), AVE (average variance extracted) values, MSV (maximum shared variance) values, and ASV (average shared variance) values for individual factors with the intention of checking the construct validity. In this study, AVE values are higher than the corresponding squared interconstruct correlation (SIC) values which show the discriminant validity (Table 4). The following conditions (Giri & Pandey, 2016) of convergent and discriminant validity have been checked in this study and finally prove the construct validity (Table 4).

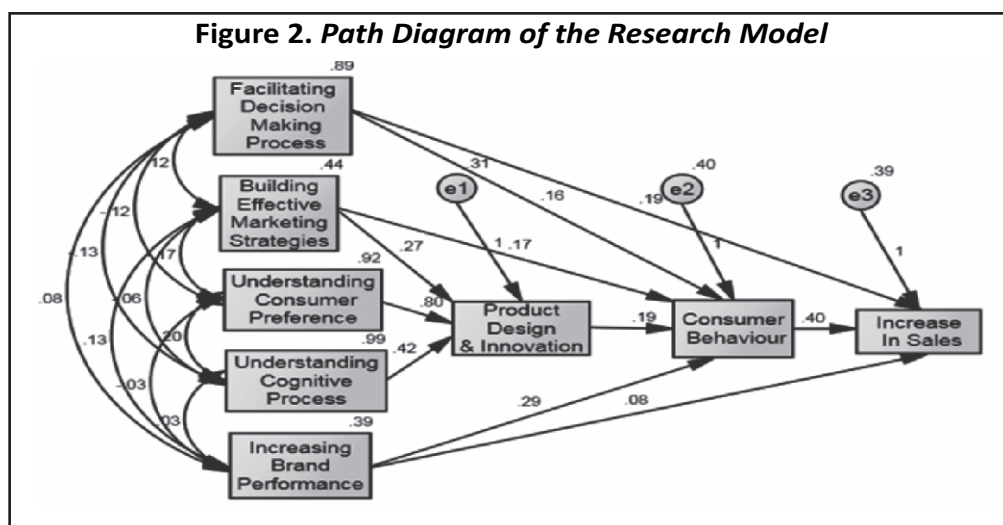


Table 5. Fit Indices of the Research Model

Fit Index	Threshold Levels	Fitness Values
χ^2/df (Chi-square / Degree of freedom)	< 3	1.201
RMSEA (Root mean-square error of approximation)	< 0.06	0.045
GFI (Goodness of fit index)	> 0.90	0.977
AGFI (Adjusted goodness of fit index)	> 0.90	0.995
NFI (Normed fit index)	> 0.90	0.958
CFI (Comparative fit index)	> 0.90	0.992

- ✍ AVE should be more than 0.5,
- ✍ CR should be more than AVE,
- ✍ MSV should be less than AVE,
- ✍ ASV should be less than AVE.

Establishment of the Research Model

Structural equation modeling (SEM) helped to establish the research model and check the stated hypotheses in this study. Also, fitness indices have been checked to examine the suitability of the research model.

Here, the fit indices (Table 5 ; refer to Giri & Chatterjee, 2020 ; Giri et al., 2018) of the path diagram (Figure 2) prove the good fitness of the model.

Hypotheses Testing and Findings

- ✍ **H01** : Facilitating the decision making process positively influences consumer behavior.

Positive (+.160) path coefficient with significant p - value (<0.05) indicates that the hypothesis H01 is accepted (Table 6). Neuromarketing tools directly influence the perception of the consumers regarding a particular product. The managers understand the needs and demands of the consumers and they implement this knowledge in their products. As a result, consumers are attracted towards the products as they are helpful in satisfying their needs and wants.

- ✍ **H02** : Building effective marketing strategies positively influence consumer behavior.

Positive (+.170) path coefficient with significant p - value (<0.05) indicates that the hypothesis H02 is accepted (Table 6). Neuromarketing tools help organizations in building effective marketing strategies, which would help the organizations to penetrate into the target markets. Neuromarketing tools make it relatively easier for the organizations to collect information from the market which is otherwise difficult using the traditional methods. Consumer preferences, competition in the market, segmentation strategy, etc. could be planned using the neuromarketing tools. Thus, the neuromarketing tools help the organizations to garner positive consumer views by designing a marketing strategy that would cater to their needs and wants. This will automatically increase the sales of the products.

- ✍ **H03** : Understanding the cognitive process positively influences product designing & innovation.

Table 6. Path Analysis by Structural Equation Modeling (SEM)

Measurement Path			Hypothesis	Estimate	S.E.	C.R.	p-value	Assessment
Product Designing & Innovation	←	Understanding Consumer Preferences	H4	.797	.062	12.950	<.001*	Supported
Product Designing & Innovation	←	Understanding Cognitive Process	H3	.423	.058	7.345	<.001*	Supported
Product Designing & Innovation	←-	Building Effective Marketing Strategy	New	.265	.087	3.053	.002*	New Relation
Consumer Behaviour	←	Product Designing & Innovation	H6	.186	.060	3.092	.004*	Supported
Consumer Behaviour	←	Building Effective Marketing Strategy	H2	.170	.102	1.659	.047**	Supported
Consumer Behaviour	←	Facilitating Decision Making Process	H1	.160	.070	2.298	.022**	Supported
Consumer Behaviour	←	Increasing Brand Performance	H5	.293	.108	2.720	.007*	Supported
Increase in Sales	←	Consumer Behaviour	H7	.398	.094	4.245	<.001*	Supported
Increase in Sales	←	Facilitating Decision Making Process	New	.191	.069	2.780	.005*	New Relation
Increase in Sales	←	Increasing Brand Performance	New	.079	.107	.737	.041**	New Relation

Note. *, ** show significant regression coefficient with $p < 0.01$ & $p < 0.05$, respectively.

Positive (+.423) path coefficient with significant p - value (< 0.01) indicates that the hypothesis H03 is accepted (Table 6). Understanding the cognitive processes of the consumers regarding a particular product is very important for an organization. The perception of the consumers could be analyzed if their cognitive processes are mapped. The neuromarketing tools make this extremely difficult task possible. The trends of the market can be explicitly studied through this and the product designing could be positively influenced.

🔗 **H04 :** Understanding consumer preferences positively influences product designing & innovation.

Positive (+.797) path coefficient with significant p - value (< 0.01) indicates that the hypothesis H04 is accepted (Table 6). There are thousands of products of the mobile phone industry in the market. There is very stiff competition among these organizations as their sustainability is threatened. To increase their longevity, the organizations must predict the consumer preferences and accordingly design their products so that the demand of their products does not diminish over time. Neuromarketing tools help the organizations to understand the consumer preferences and consider these points while designing the products.

🔗 **H05 :** Increasing brand performance positively influences consumer behavior.

Positive (+.293) path coefficient with significant p - value (< 0.01) indicates that the hypothesis H05 is accepted (Table 6). Creating a brand image is a tangible asset of the organization. If the brands of an organization are embedded in the minds of the customers, it will provide a competitive edge to an organization over others. As a result, organizations in the mobile phone industry today strive to increase the performance of the brands by

increasing the attributes or features of their products. Neuromarketing tools help to increase the brand performance by targeting the needs of the customers. This, in turn, has a positive effect on the consumer behavior.

🔗 **H06:** Product designing & innovation positively influence consumer behavior.

Positive (+.186) path coefficient with significant p -value (<0.01) indicates that the hypothesis H06 is accepted (Table 6). Technology, today, is evolving rapidly. With this, the consumers are also looking forward to products which will provide them with the latest technology. The preferences of the consumers also need to be taken into account as there are some features of the mobile phones which would attract the consumers, while there will be others, which will not have any impact on the consumers. Neuromarketing tools help the organizations to understand these preferences of the consumers well in advance. Their product designing is planned accordingly, and they do not fail to attract consumers. Thus, the impact of a proper designing of the products on consumer behavior is positive.

🔗 **H07:** Consumer behavior positively influences the increase in sales.

Positive (+.398) path coefficient with significant p -value (<0.01) indicates that the hypothesis H07 is accepted (Table 6). Positive consumer behavior would automatically result in an increase in sales. This is because the products are launched according to the preferences of the consumers. As a result, there is relatively lesser chance that the products will be rejected by the consumers leading to a drastic increase in the sales turnover.

Managerial Implications

In this age of digitization, technology is regarded as a blessing. Today, mobile phones are used extensively, and hence, their demand is very high and the saturation index of these products is pretty high, making marketing of these products a tad bit difficult. The market for these electronic gadgets is highly volatile as the life cycle of the mobile phones is not very long. Neuromarketing is an avenue which helps the organizations to analyze the market as well as the consumers for relevant information, which is otherwise impossible as it takes a lot of time. The mobile phone industry is a booming sector which highly impacts the economy of any nation. It is a huge sector which generates a lot of employment opportunities and these opportunities could be utilized with the help of the neuromarketing tools. India is considered to be one of the best countries to provide IT solutions, and thus, this industry is responsible in attracting a huge inflow of investments with the help of various neuromarketing tools as processes are outsourced to India. This results in an inflow of cash to the nation which is again very beneficial towards its economy.

Neuromarketing tools do not need a lot of investment on the part of the organizations. They already have the pre-requisites to use the tools. However, training should be given to the employees to efficiently utilize these resources. Also, the employees could be trained regularly with the help of the neuromarketing tools so that they are updated with the latest technology which is used around the world. They must learn to analyze the data in the right manner to garner some use of these tools after their thorough implementation. Data is generated on a large scale from the perspective of the organizations. This data can be sorted out with the help of neuromarketing tools, and the relevant data could be utilized in the designing of effective marketing strategies. This data could also be helpful in adding certain innovative features to the product design according to the needs and demands of the consumers. Neuromarketing tools can also help the organizations in their decision making processes. They also help the organization to properly analyze the cognitive processes of the consumers. The preferences of the consumers could be better understood, which would have a positive impact on the brand performance as well. All of these individual factors could lead to an increase in sales for that particular organization.

Conclusion

Neuromarketing is an avenue which needs more exploring by the organizations. With the help of the neuromarketing tools, a lot of data related to the consumers could be collected and analyzed properly. Moreover, the analyzed data could provide the organizations with certain factors, which if implemented, could lead to fruitful results. These factors which are related to the implementation of the neuromarketing tools are : Facilitating Decision Making Process, Building Effective Marketing Strategy, Understanding Cognitive Processes, Understanding Consumer Preferences, Increasing Brand Performance, Product Designing and Innovation, etc. All of these factors have a positive effect on the consumer behavior and ultimately, it results in an increase in sales.

In short, neuromarketing extensively studies the needs of the consumers regarding a particular market segment. After identifying them, these needs are addressed and the features of the products are designed in such a manner so that the consumers have a positive reaction towards the same. It is becoming increasingly important for the organizations to implement neuromarketing tools to keep up with the changing landscape of the industry. The efficiency levels of the neuromarketing tools are higher. This information helps to garner the positive attention of the customers towards the products. The sales automatically increase in such cases. The brand image is also strengthened, which is again helpful in attracting more customers. The customer base increases by leaps and bounds within a shorter period of time. The profitability index of the organizations also increases. Thus, using these resources, the organizations can plan their future marketing strategies, which will have a higher likelihood of yielding fruitful results.

Limitations of the Study and Scope for Further Research

Based on the extensive literature review, there are certain other factors which could be selected for carrying out further research in this area. Furthermore, this study primarily focuses on the mobile phone industry. Future research studies can concentrate on the impact of neuromarketing tools in other industries. This study could be carried out in a global context. Also, the data collected in this study was from the perspective of the employees of the mobile phone industry. Further studies could be carried out which focus on the perspectives of the other stakeholders such as consumers, suppliers, etc. A comparative analysis could be carried out in the future, which would collect the data from different zones of India.

Authors' Contribution

Dr. Arunangshu Giri conceived the idea and Satakshi Chatterjee developed the research model for this particular empirical study. Satakshi Chatterjee collected relevant research papers with high reputation for this study and generated concepts and codes relevant to the study design. Dr. Arunangshu Giri developed the research methodology suitable for this particular study. He verified the methods of the study and supervised the entire process. Satakshi Chatterjee took the interviews from the respondents and collected the data. Dr. Arunangshu Giri analyzed the data with consultation from Satakshi Chatterjee. Satakshi Chatterjee and Dr. Arunangshu Giri both interpreted the results. The numerical computations were also carried out by Dr. Arunangshu Giri by the use of various softwares such as SPSS 23.0 and AMOS 23.0. Satakshi Chatterjee, with consultation from Dr. Arunangshu Giri, identified the implications as well as the future scope of this study.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter, or materials discussed in this manuscript.

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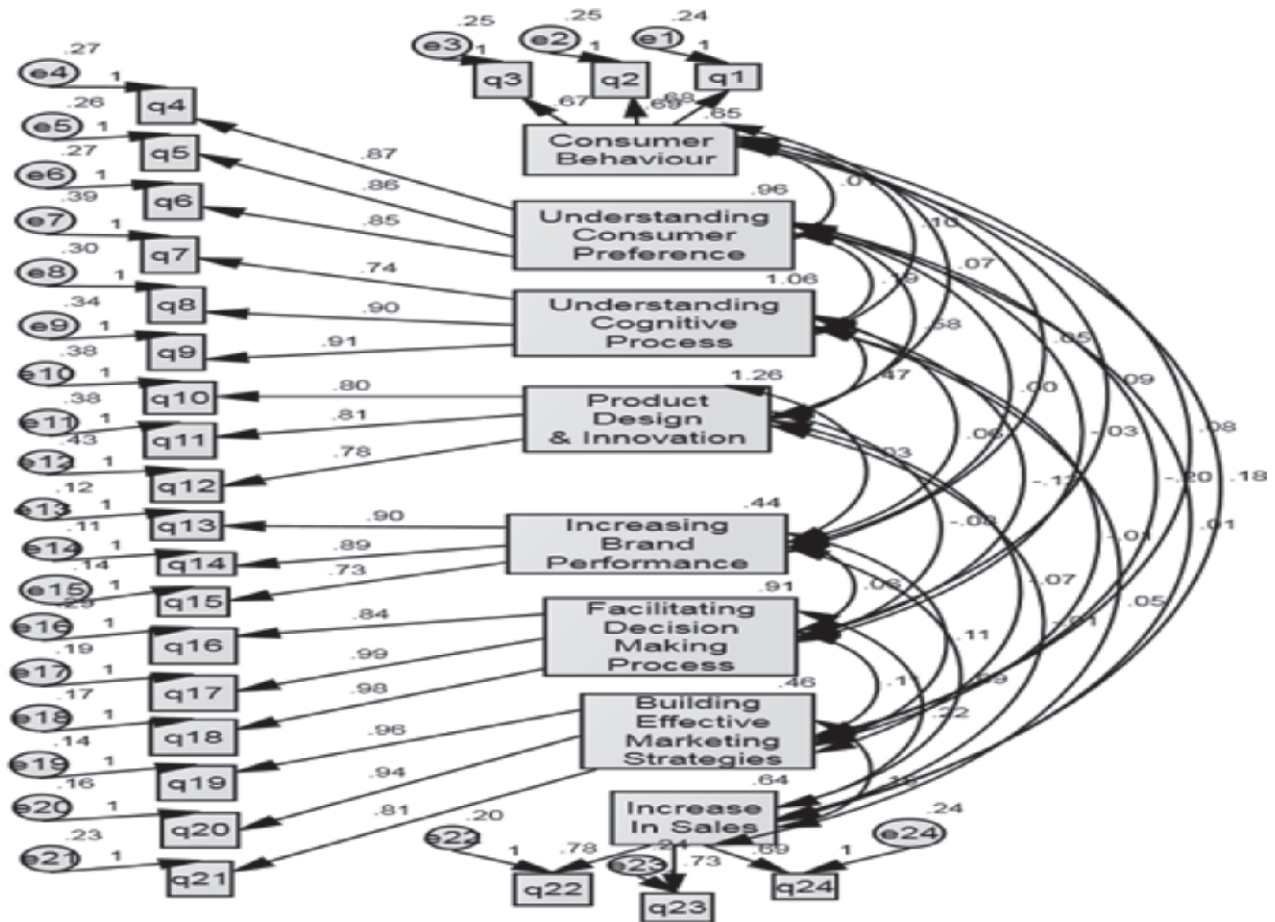
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Appendix

Appendix A1.

Factors	Structured Questionnaire with Different Variables
Consumer Behavior (CB)	<p><i>q1</i> : Consumer behavior changes the perception of the consumers regarding a particular product or service.</p> <p><i>q2</i> : Advertisements and branding are very crucial factors which affect the consumer behavior.</p> <p><i>q3</i> : A positive consumer behavior towards a product automatically heightens the level of quality associated with its products in the minds of the consumers.</p>
Understanding Consumer Preference (UC)	<p><i>q4</i> : Neuromarketing tools help in understanding the consumer preferences in the market.</p> <p><i>q5</i> : Understanding the consumer preferences increases the marketing efficacy of the organization.</p> <p><i>q6</i> : Consumer preferences are taken into account before deciding on the new features of a product.</p>
Understanding Cognitive Process (UCP)	<p><i>q7</i> : Neuromarketing tools help in understanding the cognitive processes of the customers.</p> <p><i>q8</i> : Cognitive analysis could ensure that the customers would have a positive reaction to the marketing stimulus.</p> <p><i>q9</i> : Cognitive processes are analyzed before deciding on the features of a new product.</p>
Product Designing & Innovation (PDI)	<p><i>q10</i> : Neuromarketing tools help to provide the basis for product designing and innovation.</p> <p><i>q11</i> : Neuromarketing tools help the organizations to design such products which would stimulate certain benefits, thereby attracting more customers.</p> <p><i>q12</i> : Product designing and innovation have a positive impact on consumer behavior.</p>
Increasing Brand Performance (IBP)	<p><i>q13</i> : Neuromarketing tools help in increasing the brand performance.</p> <p><i>q14</i> : A strong brand image can result in a positive buying behavior of the consumers.</p> <p><i>q15</i> : Increasing the brand performance has a positive impact on consumer behavior.</p>
Facilitating Decision Making Process (FDP)	<p><i>q16</i> : Neuromarketing tools help in facilitating the decision making processes of the consumers.</p> <p><i>q17</i> : Neuromarketing tools can realistically predict the response of the consumers towards a certain product which further helps in the development of their sales propaganda.</p> <p><i>q18</i> : Facilitation of the decision making process has a positive impact on consumer behavior.</p>
Building Effective Marketing Strategy (BMS)	<p><i>q19</i> : Neuromarketing tools help in the building of effective marketing strategies.</p> <p><i>q20</i> : Effective marketing strategies help the organizations in increasing their sales.</p> <p><i>q21</i> : Building of effective marketing strategies results in positive consumer behavior.</p>
Increase in Sales (IS)	<p><i>q22</i> : Positive consumer behavior is responsible for increasing the sales of an organization.</p> <p><i>q23</i> : A strong customer base results in a competitive advantage in the market.</p> <p><i>q24</i> : Increase in sales will increase the sustainability of the organizations.</p>

Appendix A2. Construct Validity Testing Through AMOS



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Satakshi Chatterjee has over 5 years of experience in research and teaching. She is the university topper for her post-graduation degree in the year 2016 from the University of Mysore, Karnataka. She has authored 23 research papers that have been published in various national and international journals of repute, including Scopus indexed journals. She has also authored three books.

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