Abstract—Despite abundance of empirical findings and the unprecedented interest, researchers still lack a fundamental understanding of the factors and the mechanisms through which innovation creates growth. Perhaps most frustrating has been the failure to find an empirical measure of innovative activity that offers deep insight into the underlying factors and mechanisms. There are likely as many definitions of “innovation” as there are experts. The term can be applied to new or improved products (as at Microsoft and Nintendo), processes (as at Toyota, Walmart, Procter & Gamble), experience (as at Disney, Google, Target), or business models (as at Hewlett Packard, Reliance, or Goldman Sachs). The recent study focuses on fundamental gap to measure the empirical findings of innovation impact on deep understanding of brand and further to investigate the sustaining effect of innovation on brands in terms of brand resonance. Though primarily the study doesn’t make an effort to define brand resonance but while developing the questionnaire for a sample size of 97 respondents, it has primarily structured the items based on the Customer-Based Brand Equity Pyramid developed by Keller under two major components i.e. emotional and rational route to brand relationship building to make strong connections between the consumer and the brand and which characterizes the brand resonance. The methodology applied for the research was primarily based on scale development of the independent and dependent variables. The probability factor in dependent value was more appropriate for logistic regression to test the hypotheses. The empirical findings of the research contributed to the theory of brand scale development of the independent and dependent variables.

Index Terms—Brand equity, innovation, brand resonance, logistic regression.

I. INTRODUCTION

The geographic footprint of innovation is becoming more global in terms of research and development [1]. It is more incremental process in the recent times to build a formidable competitive advantage by infusing innovation as a reverential rhetoric into hard-nosed revenue-growing reality [2].

The challenges are two pronged for the companies to innovate. First, to improve their ability to create growth through innovation metrics [3] but to avoid three measurement traps that is too short metrics to encourage sustaining behavior and focus towards inputs over outputs. Second the most difficult challenge to innovation is to generate unorthodox, new ideas and to get talent and capital behind those ideas in order to create viable business plans and scalable opportunities [4].

But the companies who faced hard time to sustain their innovation initiative – as Nokia, Sun Micro System, Hewlett-Packard, Polaroid to name a few but the list is countless, points to a much deeper problem rather than the common reason of a failure to execute [5].

In contrast, Corning launched several key new products related to its existing business in 2007-08 like diesel filter for reducing fuel consumption and increased engine power, Next Generation LCD Glass, Handheld Screens, Bendable Fiber, High-Throughput screening. After the meltdown in telecom sector, Corning created a portfolio of new technologies. CEO Wendell Weeks noted “Our Strategy is to grow through innovation and some are going to fall by the wayside” [6]. During his visit in India on May 30, 2016, Satya Nadella, CEO of Microsoft, addressed a conference titled, ‘Tech for Good, Ideas for India’ where he said the Microsoft wants to become the “platform” through which innovation is created in India. It certainly pushes the researchers to take another stride in fostering the ingenuity of what is happening in India. India is getting recognised as a leader in frugal innovation in a world where countries are competing on innovation plank and not labor costs, World Intellectual Property Organization (WIPO) Director General Francis Gurry said in conversation with ET on March 6, 2017. He said demand driven innovation is a big opportunity for India that can address its social and environmental problems.

II. CONCEPTUAL FRAMEWORK

The term “brand” was used for the first time in 1870 [7]. David Ogilvy coined, “A Brand is the consumer's idea of a product” [8]. Brands become effective signals of quality for the experience and credence attributes [9] that further help in developing customer relationship with brand. However, the construct of customer relationship with brand is quite complex which has taken various perspectives, models, concepts and theories in the literature [10].

The introduction of consumers’ relationships with brands has taken in terms of brand attachment [11]-[14], brand rom-ance [15], brand relationship orientation [16], brands in the self-concept [17], [18], brand commitment [19] brand love [20]-[23] self-brand connections [24], brand passion [25], [26] to name a few.

The published articles distinguish various types and intensities of emotions and relationships consumers can
have with their brands [22]. While frequently new concepts and their underlying constructs are introduced to literature to explore and explain consumer brand relationships (e.g., brand authenticity, brand fanaticism, brand extreme desire, brand cult, or brand evangelism) but a clear understanding how all these different concepts relate to or built on each other in term of a sequential framework is still missing in academic literature [10].

The consumer-based brand equity pyramid [27] is an answer to sequential framework as it focuses on brand building process which includes four basic questions that consumers invariably ask about any brand: 1. Who are you? (Brand salience) 2. What are you? (Brand imagery) 3. What do I think or feel about you? (Consumer judgments and feelings) 4. What kind of relationship or connection will I have with the brand? (Brand resonance). Brand resonance represents the highest level of customer based brand equity (CBBE), the value added to a product (whether a good or a service) because of its association with a particular brand [28], [29].

The model treats brand equity as a development process of brand relationship. The theory of brand resonance as proposed by Keller is based on four main influencing factors: behavioral loyalty, attitudinal attachment, a sense of community and active engagement. When a consumer is exhibiting all four brand resonance factors, they have the strongest relationship with the brand and provide even greater worth [29]. The concept of brand resonance evolved from the conceptual models [27] of consumer-based brand equity where if we study brand with rational approach, it will provide better and broader understanding about the phenomenon arises between the consumer and brand [30]. The advantage of brand resonance lies in the duality of brand equity concept – consumer perceives brand equity on a basis of emotional and rational factors. Keller (1993) [28] viewed consumer-based brand equity strictly from the perspective of the consumer to define it as “the differential effect of brand knowledge on consumer response to the marketing of the brand”. Brand resonance is the term which focuses on the various stages of consumer brand relationship [31]. Brand resonance could help predict repurchase intention, future earnings and firm value in various markets [32] of what they have experienced and learned about the brand on their responses to the brand over time which is built up as a power of a brand lies in the minds of consumers [33].

Companies need to innovate in order to be competitive [34] and marketing strategies use these elements to compensate and communicate their costs. An innovative firm may thus be associated with images of creativity or dynamism in changing markets with its offers [35].

The strategies of introducing or continuous technological innovation to counter the intense competition are other ways of improving the brand performance or brand equity [36].

The importance of brand equity to a firm has been well-documented by previous literature. Brands with high equity allow a firm to charge a premium price as well as garner a larger market share in relation to competitors [37]. The power of a brand to evoke strong, favorable, and unique brand associations has been considered the essence of brand equity ([28], [38]).

The continuous technological innovation creates a competitive scenario where brand loyalty is nullified with the uninterrupted inflow of competitive product varieties and models and the brand resonance effect in terms of relationship that a consumer has with the product and the extent to which consumers feel that they are in ‘sync’ with the brand gets alleviated [39].

Despite innovation, most new products do not find their place in the market [40]. The brand failure is reasoned out on many aspects but companies that do not acknowledge the effective ways to innovate [41], faces the risk of losing their market share to the competitions. Yet, many innovation fail within the first three years of their introduction into the marketplace [42]. To ensure that innovations will be more successful in the marketplace, a consumer-centric perspective is essential [35].

Some researchers have taken a consumer-centric view on consumers’ perceptions of new products [43]. Innovation in product has caught researcher’s attention towards evolvement of consumer’s perception. The importance of the perception of innovation by consumers to identify problems of adoption of an innovation was emphasized by Wells et. al. (2010) [44] and Flight et. al. (2011) [45]. Though broad-based consumer-centric perspective on firm innovativeness has been largely missing from the literature [46].

Others looked for consumers’ adoption of broader view of innovation beyond consumer’s perceptions of new products to judge whether a firm is innovative i.e. to derive “perceived firm innovativeness” (or PFI). PFI affects consumer behavior, and, ultimately, firm success. In other words, a firm positions itself as innovative in the mind of consumers [35]*.

*Note: The authors extended the example of Apple which offers new products on an ongoing basis (e.g., the iMac, iPod, and iPhone) and identified as the most innovative company by BusinessWeek (2009) [47].

Few studies on consumer-centric perspective on firm innovativeness studied upon perceptions of a firm’s introduction strategy [48], market leadership ([49], [50]) or pioneer status ([51], [52]).

III. DEFINITION

This paper discusses the impact of innovation in terms of changing customers need [53] which may be impacted and drifted with continuous flow of products where price and demand factors rule with technologically driven strategies. The relevance of brand resonance effect as defined by Keller (2013) [39] revisited to investigate deep and sustaining effect of innovation on brands to build not only corporate-wide capability for innovation [2] but consumer-wide acceptability resulting into lasting brand resonance. The world’s leading companies – P&G, IBM, Royal Dutch/Shell, Whirlpool, GE and others made successful innovation by leveraging a disruptive technology, a radical new product idea, a truly novel service concept or a game-changing business model. But with the time those companies eventually ceded the leadership position to a competitor and failed to build a deep, enduring capability.
for innovation to maintain a competitive advantage over the long term with consistent profitable revenue growth [4]. Thus, it is also important to oversee how consumers react to innovation and accept the product within their evoked set of brands.

“Brand resonance refers to the nature of the relationship that customers have with the brand [54] and the extent to which they feel that they are “in synch” with the brands” [27]. “Brand resonance can be defined as how well you connect with your customer both formally and casually. Brand resonance is the extent to which a consumer develops strong behavioral, psychological, and social bonds with the brands s/he consumes [55].

Innovativeness is the term used differently in the literature: it may be related to the innovation of a brand or an individual, but also its ability to adopt new products [56]. Innovation is a central concept in business life today and they are meaningful and relevant to businesses only when they are adopted by consumers [57]. The term ‘innovation’ is related to ‘change’ as suggested in few researchers writings like Rogers (1998) [58]. The novelty differentiated innovation and change [59]. An innovation is described as something new or unique, be it a product or a service [60].

IV. RESEARCH OBJECTIVE

The objective is to estimate the probability of a consumer impacted by the innovation strategy in his brand resonance framework of the evoked set of his branded item in the product category.

Earlier the researchers [61] identified two product categories and six brands to improve the measurement of consumer - based brand equity. In the present study, product category chosen for the research classified in two popular categories irrespective of brands by seeing the trend in the Indian Market as follows:

A. Automobile: Car, Motorbike and Scooter

B. Mobile Phone: Smart Phone, iPhone

The theory evolved from the discussions above left us with following measuring variables as stated in Table I and further explained.

V. RESEARCH HYPOTHESIS

The statistical null hypothesis is that the probability of a particular value of brand resonance is not associated with the value of independent variable i.e. Innovation. In other words, the line describing the relationship between the measuring variables and the probability of the nominal variable has a slope of zero [62].

H0 (null hypothesis): Innovation strategy to build Brand Equity is not significant in impacting brand resonance in the chosen product category.

H1 (alternative hypothesis): Innovation strategy to build Brand Equity is significant in impacting brand resonance in the chosen product category.

We model the log of the odds for BRi = 1
\[
\ln P(\text{BR}_i = 1)/\ln (1 - P(\text{BR}_i = 1)) = \beta_0 + \beta_1\text{INV}_{1i} + \cdots + \beta_k\text{INV}_{ki}
\]

Which can be converted to
\[
P(\text{BR}_i = 1) = \exp(\beta_0 + \beta_1\text{INV}_{1i} + \cdots + \beta_k\text{INV}_{ki})/1 + \exp(\beta_0 + \beta_1\text{INV}_{1i} + \cdots + \beta_k\text{INV}_{ki})
\]

The variables items of the questionnaire are broadly explained in Table II below:

VI. METHODOLOGY

The sample size of the respondents was limited to 97 as explained in Table III below. Due to the small sample size with an assumed representative population, the data collected by means of self-administered questionnaire was used to conduct the logistic regression. Moreover the logistic regression is robust against multivariate normality and better suited for smaller samples.

Sample size of the respondents with socio-economic classification is in the Table III below:

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**TABLE II: INNOVATIVE STRATEGY VARIABLE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Variables Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation absolute</td>
<td>The complete overhaul in attributes</td>
</tr>
<tr>
<td></td>
<td>- Need of market demand</td>
</tr>
<tr>
<td></td>
<td>- Consumer change in buying behavior</td>
</tr>
<tr>
<td>Innovation inside</td>
<td>The change in attributes in sync with competitor</td>
</tr>
<tr>
<td></td>
<td>- The add-on features</td>
</tr>
<tr>
<td></td>
<td>- The improvisation effort</td>
</tr>
<tr>
<td></td>
<td>- The addition of flanker products</td>
</tr>
<tr>
<td></td>
<td>- The technological innovation</td>
</tr>
</tbody>
</table>

**TABLE III: SEC CLASSIFICATION OF SAMPLE SIZE**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Classification</td>
<td>Less than 20</td>
<td>21 - 25</td>
</tr>
<tr>
<td>Occupation</td>
<td>Employed</td>
<td>Unemployed</td>
</tr>
<tr>
<td>Education</td>
<td>Graduate</td>
<td>Not Graduate</td>
</tr>
</tbody>
</table>
The validity was ascertained through a pilot study and the reliability of internal consistency was checked by using the Cronbach alpha which was equal to .743. The male respondents were inclined to respond for both the categories of automobile. The female respondents were inclined to answer more for the scooter and it was assumed as favored product choice in the automobile category. The response data in automobile category produced marginally higher for male equaling .65 than for female equaling .61 thus gender difference in consumer choice and buying behavior was outright rejected for non-significant difference in male and female respondents. The socio-economic classification based on occupation and education had a significance understanding of the questionnaire at response with more for occupation than education though missing cases were nil.

VII. ANALYSIS

The Cox and Snell pseudo R-square indicates 35.8% of the variation in the dependent variable is explained by the logistic model. Nagelkerke’s R Square of 52.8% explains moderately strong relationship between the independent variable (innovation) and dependent variable (brand resonance impact).

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke’s R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>79.381*</td>
<td>.358</td>
<td>.528</td>
</tr>
</tbody>
</table>

*Estimation terminated at iteration number 4 because parameter estimates changed by less than .001

As shown in Table IV above, smaller values of -2 log likelihood indicates fairly good fit.

Wald $X^2$ statistics to test the significance of individual coefficient in the model was not considered reliable due to small samples as the standard error is often inflated for the large estimates of the coefficient, resulting in a lower Wald statistics. The resultant model assume explanatory variable unimportant which may be incorrect.

Likelihood Ratio tests, are generally considered the superior one for the small sample size.

The minimization criteria by SPSS of -2log likelihood ratio test (LRT) gave chi-square ($X^2$) value of 152.236 with 17 df as shown in Table V.

<table>
<thead>
<tr>
<th>Table V: Model Fit</th>
<th>Model fitting information</th>
<th>Likelihood Ratio Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>-2 log likelihood</td>
<td>Chi square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>df</td>
</tr>
<tr>
<td>Intercept only</td>
<td>253.279</td>
<td>152.236</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>.001</td>
</tr>
<tr>
<td>Final</td>
<td>101.043</td>
<td></td>
</tr>
</tbody>
</table>

The value is higher than the critical chi-square ($X^2$) value at 001 level. Thus null hypothesis (H0) is rejected. Innovation has a major effect in impacting the Brand Resonance of consumer choice in his or her evoked set of brand in a product category and significant for building brand equity.

VIII. DISCUSSION AND FUTURE RESEARCH

Innovation strategy is a continuous process and choice behavior of the consumer varies with the time. The time factor was not considered in the study which could be subjected to longitudinal research for the future research. Brand resonance has two major components for consumer decision process i.e. emotional and rational. The impact factor may be more for emotional than rational decision and vice versa. The future research may be useful for taking weightage of these two components in impacting the brand choice behavior. The adolescent age group of generation next is more convincing group for the marketer in the technology driven market inflicted by the success of intense innovation. The study extends further scope to understand the consumer psychological framework of this vulnerable age class who drifts more by technology than by price factor.

For the market strategist, other factors which may affect consumer decision process like peer and reference group influence will add on more effective research and a challenge for developing a strategic framework in the context of innovation driven situation. Brand resonance model as explained by Keller (2001) [27] in his classic work based on brand Identity, meaning, response and relationship (the last one related with brand resonance) which culminates in a deep association with brand may further be explored in terms of innovation on various product categories.

It is also argued that the consumer-based brand equity is admittedly the most important, but not the only source of the value a brand has for the company [63]. The authors further argued that apart from the sales market, a brand may also yield substantial benefits on other markets like capital markets, other factor markets (e.g., when a firm is granted special purchasing conditions as a "reference customer" on account of its well-known brand name) or in dealings with political decision makers.

Customer Value Proposition as explained in the classic work of Anderson et al. (2006) [64] in terms of points of parity, points of difference and points of contention may give new dimensions in exploring innovation strategies for market maven in their respective field for defining brand resonance on other framework settings and components.
REFERENCES


[44] M. A. Kamins, F. Alpert, and L. Perner, “How do consumers know which brand is the market leader or market pioneer? Consumers’


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