# Conceptual Framework of Consumer Adoption in Innovative Consumptions

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***Abstract:*** **- Consumer Adoption originates from consumer behaviour. When an individual goes through the consumer adoption process, he/she encounters many information about the new product. On the basis of that information, he develops interest and collects further information. During the process, he/she develops an attitude and forms behavioural intention towards use of that product. If the consumer has good experience with the product matching or exceeding expectations, keeping constant the other factors, he intends to continue the use of that product. Its implementation at market level is not simple. Marketers try hard to first bring consumers into the process and then keep hold on them so that they develop positive intentions towards innovation of the company. A consumer is a rational being. It is not possible to bind the consumer. In long term, marketers have to justify their innovations so that consumers themselves choose to become regular user of his product. Technological innovations is concerned with product and process innovations. It requires an objective improvement in the performance of a product. Different types of adopters play significant roles during technology adoption life cycle. Adoption can take place at individual, group or organisational level. In all the cases, efforts have to be made in shaping the behavioural intention of adopters in favour of the characteristics of our innovation.**

***Key words*****: Consumer Adoption Process, Technology Innovation, consumer behaviour, Adopters**

## I. INTRODUCTION

In today's complex marketing scenario, the companies have to strive hard to anticipate the changing tastes and preferences of their consumers. Every time, companies are coming with new innovation. Changing offers or modified names of products are not sufficient for consumers. There is a need to bring some technological changes in the form of new or improved product or services. Even these technological innovations should stand superior to the other innovations being introduced in the market. These days, companies are working on latent needs of customers to create point of difference in respect of their newly introduced products. Introduction of a new product in the market is very simple than introducing and establishing it in the mind and heart of the target market. For making consumers to adopt the product, the marketers have to work on the psychological aspect of decision making process by the consumers. Initialising from making the consumers aware about the product to bringing them down the funnel towards making use of that product on a regular basis is a very complex task. Experts in the field have developed different models to work on dependent variables like attitude, behavioural intention and usage of customers. Understanding the conceptual framework of consumer adoption process is necessary to modify the effect of innovation characteristics on the behavioural constructs of consumers. The paper highlights the important aspects of Consumer Adoption Process and the behavioural constructs and players associated with it in order to explain the crux of the phenomena.

## II. CONSUMER ADOPTION

Ryan and Gross (1943) first identified 'Consumer Adoption' as a process. Maria Saaksjarvi (2003) also identified 'Consumer Adoption' as a process. (Rogers, 1962) stated that Consumer Adoption, is traditionally conceptualized as a sequence of steps in which the consumer passes from initial knowledge of an innovation, to forming an attitude towards it, to reaching an adoption decision. Bitner et al. (2002) recognized 'Adoption' as a consumer decision process and proposed a conceptual model comprising of six stages namely, awareness, investigation, evaluation, trial, repeated use and commitment.

Rogers (2003) classified 'Adopters of Innovation' in his classic work –"Diffusion of Innovations", first published in 1962, according to the timing of their adoption into: Innovators, Early Adopters, Early Majority, Late Majority and Laggards.

Rogers (2003) further stated that, other than innovators, who constitute the first two and one-half percent, adopters are influenced in the timing of adoption by social influence, which increases for later adopters, alongwith imitation in varying degrees.

Kalish (1985) opined that 'adoption of a new product' is preceded by and is conditional on awareness and 'adoption' occurs if the perceived risk adjusted value of the product exceeds selling price of the new product.

## III. TYPES OF ADOPTION

Rogers (2003) in his book, 'Diffusion of Innovation' 5th edition mentioned 3 types of Adoption –

- Optional Adoption – It is made by single Individual
- Collective Adoption – It is made by Group Consensus
- Authority Adoption – Here, decision is established more or less by few individuals who hold position/power/status/technical professionals in a group.

## IV. CONSUMER ADOPTION PROCESS

Rogers (1983) stated that there are 5 stages included in Consumer Adoption Process:

- **Knowledge:** the existence of innovation is exposed to an individual so that she/he gains some basic understanding of the innovation's functionalities.
- **Persuasion:** favourable or unfavourable attitudes toward the innovation are formed in an individual.
- **Decision:** when an individual perform activities or actions leading to the choice of adoption or rejection toward innovation.
- **Implementation:** when the innovation is put into used by an individual.
- **Confirmation:** when an individual requires the reinforcement of an innovation-decision already made. However, he/she can also reverse the previous decision in case the innovation's messages are conflicting.

Greenhalgh et al. (2004) divided the adoption process as:

- Pre-adoption – It is related to awareness of Innovation
- Peri-adoption – Here Individual keeps continuous access to the information of innovation.
- Established adoption - Here individual adopts the product and is committed to his adoption decision.

## V. TYPES OF ADOPTERS IN INNOVATION ADOPTION LIFE-CYCLE

Everett M. Rogers (1962) identified different types of adopters with respect to 'rate' and 'time of adoption'in his Innovation Adoption Life-Cycle-

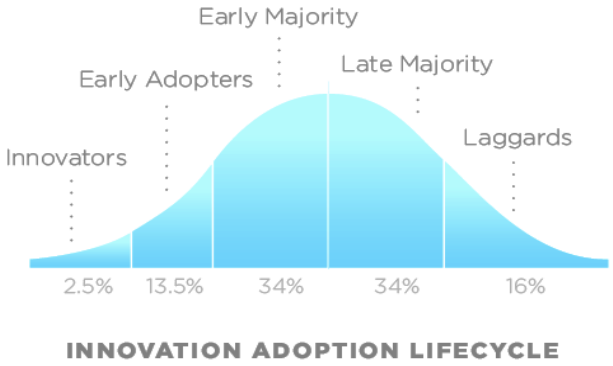
**1. Innovators**– They make up 2.5% of all purchases of the product, are not afraid of trying new products that suit their lifestyle and will also pay a premium for that extra benefit.

**2. Early Adopters**- They make up 13.5% of purchases, they are usually opinion leaders and naturally adopt products after the innovators.

**3. Early Majority** – They make up 34% of purchases. They first wait for the society to adopt the product. The early majority usually have some status in society.

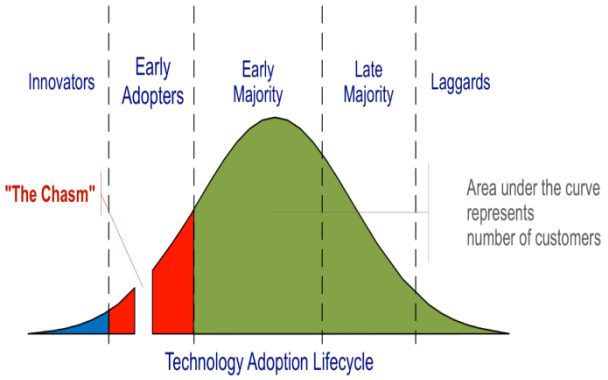
**4. Late Majority**- They make up another 34% of sales and usually purchase the product at the late stages of majority within the consumer adoption life cycle.

**5. Laggards** – They make up 16% of total sales and usually purchase the product near the end of its life. They wait to see if the product will get cheaper. Usually when they purchase the product a new version is already on the market.




Rogers (1962) - "Diffusion of Innovations"

Geoffrey A. Moore (1991, revised 1999 and 2014), in his book –"Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers" stated that, there is a chasm between the early adopters of the product (the technology enthusiasts and visionaries) and the early majority (the pragmatists). According to Moore, the marketer should focus on one group of customers at a time, using each group as a base for marketing to the next group. Crossing the Chasm is closely related to the technology adoption lifecycle. The 'technology adoption lifecycle' is a sociological model that is an extension of an earlier model called the 'diffusion process', which was originally published in 1957 by Joe M. Bohlen, George M. Beal and Everett M. Rogers at Iowa State University. Rayna and Striukova (2009) proposed that the choice of initial market segment has crucial importance for crossing the chasm, as adoption in this segment can lead to a cascade of adoption in the other segments.




Geoffrey A. Moore (1991) – "Crossing the Chasm"

(Srinivasan et al., 2002) opined that, many firms realize that product innovation is essential for their survival, and therefore devote considerable resources to the development of new products. (Lee and O'Connor, 2003) stated that, due to introduction of many new products/services in the market, most innovations brought to market still fail. Therefore, Rogers (1962) concluded that, traditional innovation research has stressed innovation characteristics as the road to success and Michael Antioco, Mirella Kleijnen (2010) added that, other studies have stressed on inculcating more innovative features to newly developed product & process by the companies in order to penetrate into the market.

## VI. INNOVATION

Midgley and Dowling (1978) identified that, the construct of innovativeness was conceptualized and introduced into consumer behaviour literature. Rogers (1995) defined 'Innovativeness' as the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system'. According to Ziamou (1999), the degree of newness is perceived differently by producers and consumers.

*Types of Innovation*

Robertson (1971) classifies innovations based on their impact on behaviour and social structure into –

- **Continuous:** Continuous products are slight modifications to existing products or service.
- **Dynamically Continuous:** It may involve the creation of a new product or service or modifications to existing ones.
- **Discontinuous:** This type of innovation represents the creation of previously unknown products that usually require a significant amount of new learning.

Marquis (1969) defined the following different types of innovation:

- **Radical:** Ideas that have impact on or cause significant changes in the whole industry
- **Incremental:** Small ideas that have importance in terms of improving products, processes, and services
- **System:** Ideas that require several resources and many labour-years to accomplish. Communications networks and satellite operations are good examples

Henderson and Clark (1990) defined the types of innovation as:

- **Incremental:** Incremental innovation refines and extends an established design, but underlying concepts and links between the components remains the same.
- **Architectural:** The essence of architectural innovation is the reconfiguration of an established system to link together existing components in a new way.
- **Modular:** It is an innovation that changes a core design concept, without changing the products' architecture or primary function.
- **Radical:** Radical innovation establishes a new dominant design and hence a new set of core design concepts, embodied in components that are linked together in a new architecture.

## VII. TECHNOLOGICAL INNOVATION

Goffin (1998) suggested that, consumers are witnessing an overwhelming amount of new product launches, especially in the field of technology.

Rogers (1995) described 'Technology' as a means for uncertainty reduction about the cause-effect relationship involved in achieving a certain outcome.

As defined by 'Community Innovation Survey', 'Technological innovations' comprise new products and processes and significant technological changes of products and processes. An innovation has been implemented if it has been introduced in the market.

K Lazenby (2000)–in his work, "Technology and educational innovation: A case study of the virtual campus of the University of Pretoria" stated that 'Technological Innovation' is a part of the total innovation discipline. It focuses specifically on technology and how to embody it successfully in products, services and processes. Further, he proposed a definition of Technological Innovation and explained it as:

- To conceive and produce a new solution (from a scientific and technological knowledge) to a real or perceived need (Invention)
- To develop this solution into a viable and producible entity (Realisation)
- To successfully introduce and supply this entity to the real or perceived need (Implementation)

'Consumer adoption of technological innovations' if taken together can be defined as a process where consumer passes through all the stages of adoption and finally decided whether to adopt the new product or not.

## VIII. MODELS OF CONSUMER ADOPTION IN SPECIAL REFERENCE TO TECHNOLOGICAL INNOVATION

In context of adoption of technological Innovation, many models have been developed till date stating the process of consumer adoption of technological innovation.

**Technology Acceptance Model (TAM)** was proposed by Davis (1989), as an appropriate mechanism for predicting adoption of new technology within a group and organization. It is based on Theory of Reasoned Action TRA (Fishbein and

Ajzen, 1975) and it hypothesizes that technology adoption is based on the user's attitude and intentions.

**The Unified Theory of Acceptance and Use of Technology (UTAUT)** proposed by Venkatesh et al, (2003) is the second most used approach in mobile adoption studies such as those on mobile data services (Lu, Yu and Liu, 2009), mobile wallets (Shin, 2009), mobile online gaming (Chen and Kuan, 2012), and mobile banking (Tan et al., 2010; Zhou, Lu and Wang, 2010b). It consists of four direct determinants of usage intention and behaviour: performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC). There are also four moderators: gender, age, experience, and voluntariness of usage posited to mediate the impact of the four key constructs on usage intention and behaviour.

**Triandis model** (Karaiskos et al., 2012) was studied individually. Karaiskos et al. used the Triandis Model by incorporating perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment (Van der Heijden, 2003) and perceived value to study predictions of the adoption of mobile data services.

**Theory of Reasoned Action (TRA)** was formulated by Ajzen and Fishbein in 1975. TRA put forth three general constructs namely: (1) behavioural intention, (2) attitude, and (3) subjective norm. Ajzen and Fishbein states that a person's behaviour is determined by the person's intention to perform that behaviour and that; this intention is, in turn, a function of the person's attitude toward the behaviour.

**Theory of Planned Behaviour (TPB)** was presented by Ajzen (1991) and it focuses on cognitive self-regulation. It is very similar to the TRA model, but the difference is that it takes into account an additional construct, namely perceived behavioural control. Perceived behavioural control refers to the perception of control over the performance of a given behaviour.

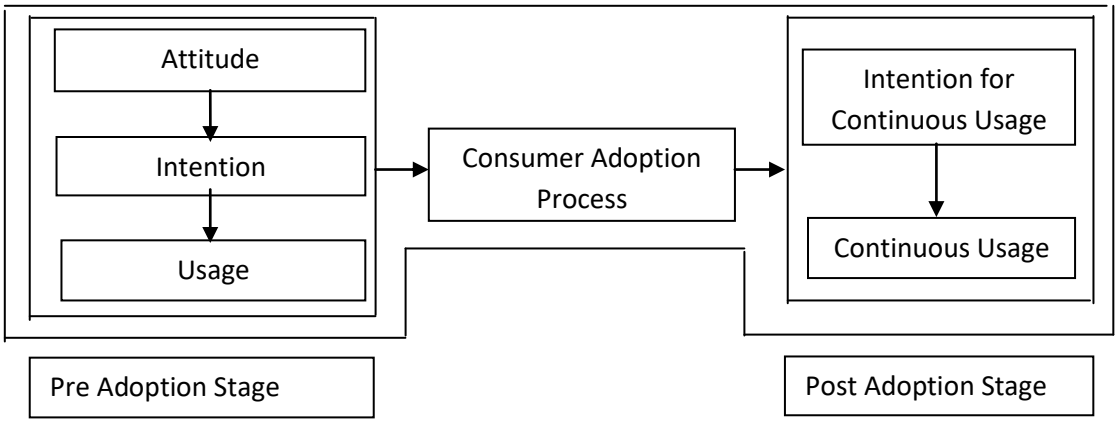
**Diffusion of Innovation(DOI)** proposed by Rogers (1995) is a theory of how, why, and at what rate new ideas and technology spread through cultures, operating at the individual and firm level. Innovations are viewed as being communicated through certain channels over time and within a particular social system. On the other hand, individuals are seen to possess a different degree of willingness to adopt innovations, and thus, it is generally observed that the portion of the population adopting an innovation is normally distributed over time. This gives a distribution ranging from earliest to latest adopters, namely; innovators, early adopters, early majority, late majority and laggards.Based on DOI theory at firm level, innovativeness is related to independent variables such as individual/leader characteristics, internal organizational structural characteristics, and external characteristics of the organization.

**Technology, Organization, and Environment(TOE)** framework has been explained in 'The Processes of Technological Innovation' by Tornatzky and Fleischer (1990).This framework has also been used in understanding technological innovation adoption and is more suited to the context of an enterprise. It identifies three aspects of an enterprise's context that influence the process by which it adopts and implements a technological innovation namely; technological context, organizational context, and environmental context.

## IX. PROPOSED WORKING MODEL – CONSUMER ADOPTION OF TECHNOLOGICAL INNOVATIONS

This model establishes a sequential pattern of how factors affect the Adoption Process in case of Technological Innovations. Previous findings states that 'Consumer Adoption' is a process. In a process, certain stages are there as concluded by Rogers in 1983. Aijaz Ahmed Shaikh (2016) in his thesis-"Examining Consumers' Intention, Behaviour, and Beliefs in Mobile Banking Adoption and Continuous Usage" examined in the first domain, the factors or antecedents influencing the consumer decision-making process during acceptance or pre-adoption of m-banking technology and services. In this relation, the study was done on three dependent variables - attitude, intention, and usage. In the second domain, he examined the consequences influencing the consumer decision-making process during the post-adoption or continuous usage. Sanakulov, N., & Karjaluoto, H. (2015) in his paper – "Consumer adoption of mobile technologies: a literature review" mentioned that their review does not extend to reviewing works on post-adoption, re-use or continuance of mobile technologies.

Now, we can conclude that, Before 'Adoption', there are stages where consumer get aware of the product, then he/she collect more information about the new product and develops an attitude towards its characteristics. If the 'Attitude' is positive, then he/she develops a behavioural intention towards using that product. Many factors play important role in the smooth driving of this sequential pattern. In this relation (if all the factors remains constant), he/she purchase the new product and use it. Thus factors affects the formation of attitude and thus it establishes the behavioural intention towards use of that product. If consumer decides to continue the use of that particular product he/she is said to enter into the 'Post Adoption' Stage. Here also factors play their role in shaping the behavioural intention towards continuing the use of that particular product. On the other hand, if consumer decides not to continue the use of that product, he/she has rejected the product and has decided not to adopt it.

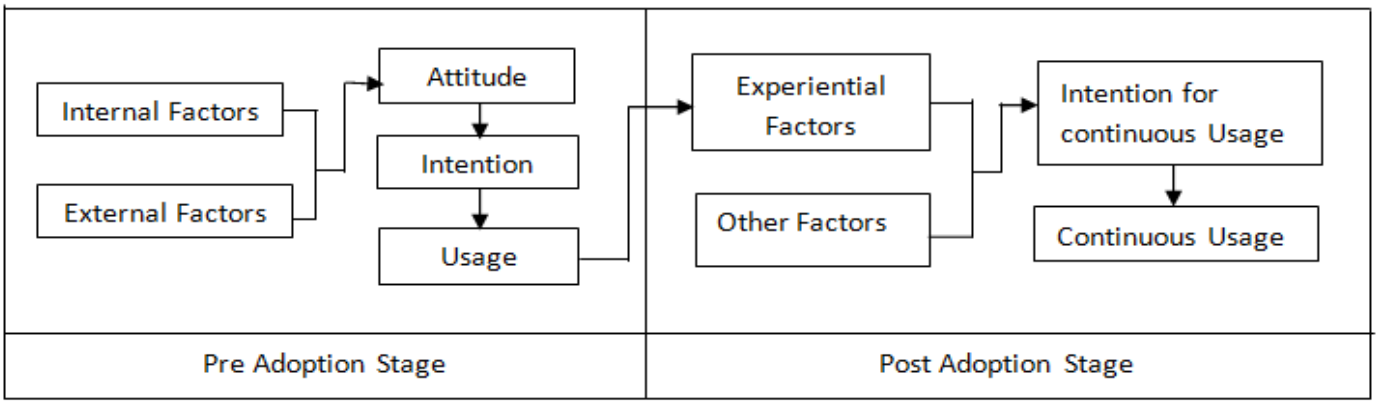



Model on Pre & Post Stages of Consumer Adoption Process

*Role of Factors*

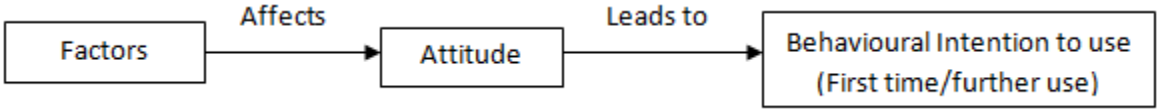
Factors play a significant role in affecting attitude, Behavioural Intention and thus, Usage of new technology by the consumers. In 'Technology Acceptance Model', Davis (1989), hypothesized that technology adoption is based on the user's attitude and intentions. This Theory was based on 'Theory of Reasoned Action' proposed by Fishbein and Ajzen, 1975. In TAM, David mentioned different factors affecting consumer attitude and Intentions. Further, In 'The Unified Theory of Acceptance and Use of Technology' (Venkatesh et. al., 2003, revised in 2012) tried to explain the factors affecting 'usage intention' that leads to actual use. From these theories, we can conclude that factors play a very important role in the process of Consumer Adoption.

This 'Proposed Working Model' explains the process of Consumer Adoption by dividing the process into two stages. In the 1st stage or Pre-Adoption Stage, Consumers form an attitude about the 'new product' as, he/she encounters with various stimulus related to that product. Many factors play important role as to how he reacts to these stimuli and then he forms an attitude. This attitude (if positive), leads to formation of 'Behavioural Intention' towards use of that product. At this point, again factors play important role towards shaping behavioural intention towards further use of that product. If BI remains positive towards continuous use of the product, consumer is said to be in the Post adoption Stage.




Model on Behavioural Intention towards Adoption of Technological Innovation

*Relevance of Factors*



*Explanation of Factors*

Identification of internal and external factors that affects consumers buying behaviour is vital as without this, it will not be possible to serve customers in an appropriate manner (Kotler, 2002).

- **Internal Factors -** Internal influences are also known as personal influences and affect our purchase decision. (Dawson & Kim, 2009). It is shaped by consumer's perceptions, motivation, lifestyle, learning and roles. Example: Trust, Perceived Risk, Perceived Ease of Use etc.
- **External Factors -** It includes cultures, social norms, subcultures, family roles, household structures, and groups that affect an individual's purchase decision (Bennett, 2009). Factors related to Marketing 4Ps are also plays important role in affecting adoption of consumer behaviour in the form of external influences. Example: Cost, Complexity of Product, Relative Advantage etc.
- **Experiential Factors** – These are the dispositions consumers form after first usage of product. These are generally related to product's actual performance compared to consumer's expectation. They are some (Internal/External Factors) only, to which consumer give more importance for further use of the product.
- **Other Factors –** These may refer to unexpected occurrence of any event or situation which may rarely take place.

## X. CONCLUSION

Consumer Adoption is a process through which consumer initially goes about knowing the characteristics of new product to finally assimilating its character into usage of his/her daily life. Technological innovation is related to product and process. Innovations can be of different types depending upon rate of change, types of components or resources required. Attitude holds significance in case of optional adoption. Innovators and early adopters play crucial role during the initial phase of introduction of Innovation in the market. Adoption process can be divided into pre and post adoption stage. In both the stages, behavioural Intention plays important role in anticipating the behavioural outcome of consumers with respect to particular technological innovation. Different technological adoption models present different constructs which shape behavioural intention of consumers. Thus, role of factors also becomes prominent in the whole adoption process.

## XI. IMPLICATION OF THE STUDY

The study simplifies the consumer adoption process by presenting its different phases. It highlights the dependent variables of different phases and establishes the need to control it. Different behavioural constructs in the form of determinants of usage intention have been presented with the support of various models on consumer adoption of technological innovation. There is a need to anticipate and work on these constructs to control the behavioural intention of consumers during the adoption process so that the ultimate result falls in favour of the introduced innovation.

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