From Idea to Successful Business Innovation: A Study

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Abstract

Purpose: The purpose is to study the factors influencing adoption and diffusion of innovation of Paytm amongst customers in the city of Raipur, Chhattisgarh, India.

Design/methodology/approach: Authors have done empirical research and analyzed the data gathered through primary sources using logistic regression and discussed their viewpoints.

Findings: It was found that innovative feature in a product or service, influence adoption and diffusion of innovation. Further it was also found that education has significant role in formation of intention to adopt.

Originality/value: This is a fairly original paper which studies and discusses adoption of innovation.

Keywords: Adoption, Diffusion, Innovation, Intention, Logistic Regressionc

1. Introduction

A marketable innovation is a result of continuous invention or a chance discovery. A discovery is a chance which depends on favorable luck but an invention is a result of continuous endeavors on part of stakeholders like government, academic institutions, scientific laboratories and companies. Ironically developing countries who have understood the importance of innovation are steadily making progress to improve their innovation index but are trailing behind in developing a proper framework for innovation. Pullakat (2016) highlighted that India, has improved its global innovation index ranking from 81st position in 2015 to 66th position in 2016 holding the highest rank in central and southern Asia. A close analysis of top five economies according to global innovation index namely Switzerland, Sweden, United Kingdom, United States of America and Finland disclosed that they have holistic framework in terms of education and infrastructure for better translation of research outputs into business ventures. The Indian government with policy framework like Make in India, startup India and Skill India are providing support to bridge the gap in converting a good invention into a marketable innovation. Indian academicians and researchers across time frame have invariably highlighted that Indian innovators and entrepreneurs face multitude of problems related with insufficient funding, lack of government initiatives and non availability of network of venture capitalist that can help them in translating their dreams into a working profit making projects.

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Gooptu (2016) highlighted the performance of Indian start ups in 2016 indicating that 19,000 technology startup firms based on consumer internet based services and financial services paved its way in India out of which 8 startups owned to the unicorn club (ventures valued at 1 billion dollar or more). Further PWC (2015) in its report highlighted that India has witnessed growth driven by technology, market, and operations. Technology driven innovations deals with development of new advanced technologies, market driven innovations are answers to customer needs in form of product or services and operations driven innovations strikes a balance between cost and efficiency through innovations.

In the above backdrop the paper tries to understand the following issues:

(a) Concept of Innovation and Adoption and diffusion of Innovation

(b) Factors influencing adoption of Paytm

2. Concept of Innovation and Adoption and Diffusion of Innovation

In normal parlance innovation is a unique idea which has the capacity to change the existing status quo. Business dictionary (2017) indicated that innovation is a business idea that can be converted into a marketable product or service that can be offered for attention, acquisition or sale to customers for satisfaction of a specific need at an economical price. Interestingly Baumgartner (2016) highlighted that innovations in business is related with implementation of creative ideas to generate value in terms of increased revenues or reduced cost or both. Gopalkrishnan and Damanpour (1996) have evaluated the economical, sociological and technological dimensions of innovation. The economical aspects of innovation focuses on adding new features to a product or changing the production process to gain competitive advantages. The sociological aspect of innovation is more focused on classifying the categories of adopters of innovation for segmenting, targeting and positioning. The technological aspect of innovation includes commercialization. Innovation as an element encompasses novelty. Therefore, the researchers over a period of time have tried to define innovation in numerous ways. The table below provides a snapshot of term innovation.

Table 1: Definition of Innovation

Author	Year	Definition
Zahra and Covin	1994	*"Innovation is widely considered as the life blood of corporate survival and growth"*
Bessant *et al*.	2005	*"Innovation represents the core renewal process in any organization."*
Thomson	1965	*"Innovation is the generation, acceptance and implementation of new ideas, processes products or services"*
Wong *et al*	2008	*"Innovation is the effective application of processes and products new to the organization and designed to benefit it and its stakeholders"*
Kimberly	1981	*"There are three stages of innovation: innovation as a process, innovation as a discrete item including, products, programs or services; and innovation as an attribute of organizations."*
Van du Ven	1986	*"the idea is perceived as new to the people involved, it is an 'innovation' even though it may appear to others to be an 'imitation' of something"*

Damanpour	1996	*"Innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a pre-emptive action to influence the environment. Hence, innovation is here broadly defined to encompass a range of types, including new product or service, new process technology, new organization structure or administrative systems, or new plans or program pertaining to organization members."*
Plessis	2007	*"Innovation as the creation of new knowledge and ideas to facilitate new business outcomes, aimed at improving internal business processes and structures and to create market driven products and services. Innovation encompasses both radical and incremental innovation."*

(Source : Anahita Baregheh, Jennifer Rowley and Sally Sambrook, Towards a multidisciplinary deûnition of innovation, Management Decision, Vol. 47 No. 8, 2009, pp. 1323-1339)

Myers *et al*. (1969) indicated that major innovation are market driven which are basically introduced as an answer to a specific customer need. Lynn (1966) opined that consumer market introduces more innovation in comparison to industrial markets (Galbraith 1970). Adoption of innovation deals with the rate with which the consumers across a market accept a product or service which is based on a new bundle of benefit exchanged for a price or value. The term diffusion encompasses the marketers' perspective of how well a product or service is accepted by varied segments of customers targeted in the market. Meade and Islam (2006) opined that marketers are interested in analyzing adoption and its feasibility from consumers perspective. Christophe Van den Bulte (2000) concluded that diffusion of consumer durables and the speed of diffusion is influenced by education, income, and awareness. Further there are studies which exclusively try to model the adoption diffusion curve. The table below provides the basis of diffusion models extensively used by researchers over a time period.

Table 2: Diffusion Models

Author	Year	
Frank Bass	1969	Bass model divided adopters in two categories namely (i) Innovators and (ii) Imitators. Further it indicated that the speed of diffusion of innovation is a largely attributed to uniqueness of innovation and the tendency of imitators to follow innovators.
A D. Bain	1963	Studied the relationship between social class and size of house hold on the diffusion curve

The adoption diffusion models are basically forecasting techniques which enable a marketer or policy maker to understand the dynamics of adoption in case of customers and diffusion in case of marketers.

3. Research Methodology

Researchers conducted an empirical study in the city of Raipur to identify the intention to adopt, the cashless mode of transactions, particularly the usage of Paytm application. The researchers sampled 100 residents of Raipur city for the purpose of the study. The researcher formulated the following hypotheses to test through Binomial Logistic Regression Analysis:

H_{01}: The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of innovative features of Paytm.

H_{02}: The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of Social Influence.

H_{03}: The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of Perceived Risk about Paytm.

H_{04}: The sex of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.

H_{05}: The age of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.

H_{06}: The education of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.

H_{07}: The occupation of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.

H_{08}: The income of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.

4. Data Analysis and Interpretation

Before analyzing the data the researcher tested the reliability and validity of the instrument. Cronbach's coefficient of alpha was used to measure the reliability of the instrument which was found good as per the statistics shown in the Table 3.

Table 3: Reliability Statistics

Cronbach's Alpha	No of Items
.834	12

Further factor analysis was used to validate the instrument. KMO and Bartlett's Test revealed adequacy of data for factor analysis as Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found .816. Than factor analysis was performed through Varimax rotation with Kaiser Normalization using Principal Component Analysis as extraction method. Rotated matrix shows the presence of three factors. Factor one was identified as "innovative features," factor two as "social influence," factor three as "perceived risk". On the basis of test results instrument used for data collection was found valid due to high loading of variables on a particular factor. Together these three factors accounted for 62.968% variance.

4.1 Logistic Regression Analysis

After ensuring reliability and validity of the research instrument the researchers further did the binomial logistic regression analysis to analyze the data, because the study includes combination of measurement levels of the dependent and independent variables. In this study dependent variable was dichotomous and independent variables were scale. Casewise list table was not produced by SPSS because of absence of outliers in the current model. Model was estimated on the basis of 100 cases. The numbers of missing cases were equal to "0". Dependent variable was coded as "0" and "1" not 1 and 2.

Baseline Model

Classification Table of the baseline model revealed that the baseline model accounted for 76% of correct prediction. The baseline model does not include explanatory variables. The *Variables in the Equation* table of baseline model shows the coefficient for the constant (B_0). This table highlighted, the significance level and reveled that model was statistically significant predictor of the outcome ($p <.001$). However it is 76% accurate.

Full Model

Table 4.1: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	104.247	18	.000
	Block	104.247	18	.000
	Model	104.247	18	.000

The Omnibus Tests of Model Coefficients was conducted to find out whether addition of explanatory variables could cause an improvement over the baseline model. Chi-square value (104.247) in this table shows the difference between the "-2LL" values of the baseline model and the full model. Table 4.2 shows that there was a drop in "-2LL" values by 104.247 for full model therefore the "-2LL" value for the zero model was 202.261. This drop (difference between the Log-likelihoods / -2LL) of the baseline model and the new model appeared to be significant (*chi-square=104.247, df=18, p<.000*). Thus it can be interpreted that full model is significantly better model than zero model because it explained more of the variance in the outcome and caused improvement over the baseline model.

Table 4.2: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	98.014[a]	.201	.596
a. Estimation terminated at iteration number 20 because maximum iterations has been reached.			

Table 4.2 shows model summary which explains with the help of R^2 values that approximately how much variation in the outcome was explained by the model. The Nagelkerke's R^2 suggested that the model explained roughly 59.6% of the variation in the outcome.

Table 4.3: Classification Table[a] for Full Model

	Observed		Predicted		
			Y		Percentage Correct
			No	Yes	
Step 1	Y	No	10	9	9.0
		Yes	5	76	96.6
	Overall Percentage				94.2
a. The cut value is .500					

Table 4.3 shows that model is now correctly classifying the outcome for 94% of the cases compared to 76% in the baseline model. This improvement is due to inclusion of explanatory variables.

Table 4.4: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1ª	X1	-.028	.200	10.143	1	.000	.880
	X2	1.230	.108	19.231	1	.000	.911
	X3	.134	.539	.830	1	.966	1.120
	Age			3.825	3	.281	
	Age(1)	.731	.992	.240	1	.808	1.116
	Age(2)	1.113	.651	1.291	1	.026	3.120
	Age(3)	1.121	.381	1.131	1	.125	2.117
	Sex(1)	1.271	.410	1.219	1	.457	1.862
	Income			4.372	3	.446	
	Income(1)	-1243	1.513	2.606	1	.106	.087
	Income(2)	1.177	2.153	.409	1	.513	2.961
	Income(3)	-1.637	1.559	1.234	1	.215	.176
	Occu			1.416	3	.573	
	Occu(1)	.458	.714	.218	1	.371	1.231
	Occu(2)	-.060	.845	.048	1	.967	.623
	Occu(3)	-1.021	1.217	.373	1	.754	.253
	Edu			1.715	4	.000	
	Edu(1)	1.320	19.616	.000	1	.009	.000
	Edu(2)	1.325	19.616	.000	1	.009	.000
	Edu(3)	1.416	19.616	.000	1	.009	.000
	Edu(4)	1.737	19.616	.000	1	.009	.000
	Constant	8.444	19.616	.000	1	1.000	93340.898
a. Variable(s) entered on step 1: X1, X2, X3, Age, Sex, Income, Occu, Edu.							

The 'Variables in the Equation' table summarises the importance of the explanatory variables individually while controlling for the other explanatory variables. Table 11.4 provides the regression coefficient (B), the Wald statistic (to test the statistical significance) and the all important Odds Ratio (Exp (B)) for each variable category.

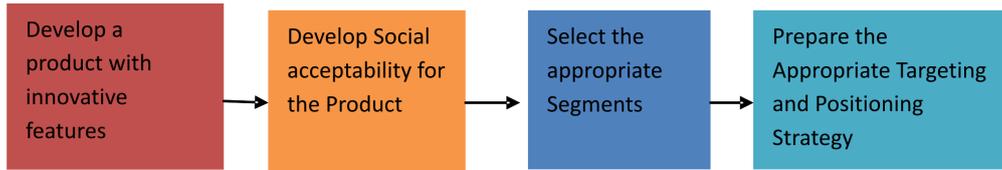**Table 5: Hypothesis Testing Result**

	Hypothesis	Significance	Decision
H_{01}	The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of innovative features of Paytm.	.000	**Rejected**
H_{02}	The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of Social Influence.	.000	**Rejected**
H_{03}	The Respondents intention to adopt Paytm application as a mode of cashless transaction is independent of Perceived Risk about Paytm.	.966	Accepted
H_{04}	The sex of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.	.457	Accepted
H_{05}	The age of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.	.281	Accepted
H_{06}	The education of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.	.000	**Rejected**
H_{07}	The occupation of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.	.573	Accepted
H_{08}	The income of respondents had no significant influence over their intention to adopt Paytm application as a mode of cashless transaction.	.106	Accepted

Table 5 presents the summary of hypothesis testing results. It was found that "innovative features of Paytm," "Social Influence" and "education" had significant influence on respondents intention to adopt Paytm.

5. Managerial Implication of the Study

The value of products and services are determined by bundle of benefits which are part of various layers of product or service. The bundle of benefits is basically a manufacturer's answer to the current needs and wants of a consumer. Indian government introduced its demonetization policy to curb black money on 9th November 2016 by removing 86% of currency in circulation. The currency crunch faced by the country resulted in soaring demand for mobile applications like Paytm. Sen (2017) highlighted that Paytm's traffic increased by 435%, app downloads grew 200%, and there was 250% rise in overall transactions and transaction value when consumers insisted on finding an alternative to cash transactions. The product life cycle of a product passes through a series of phases like introduction, growth, maturity and decline. The introduction and revival of product is dependent on the premise which states that a product will gain momentum in market only when it is able to provide benefits to consumers which are unique and different from consumers. The unique quality of a product depends on the capacity of innovation of a

company in comparison to its competitors. Paytm is the consumer brand of India's leading mobile internet company One 97 Communications. One 97 investors include Ant Financial (Ali Pay), SAIF Partners, Mediatek, Sapphire Venture and Silicon Valley Bank who understood the future need of alternative of cash transactions and introduced a simple mobile application based secure medium of digital mode of transacting (Paytm.com). The success of Paytm in the market of Raipur can be understood through application of following model:

Develop a product with innovative features	→	Develop Social acceptability for the Product	→	Select the appropriate Segments	→	Prepare the Appropriate Targeting and Positioning Strategy

The regression model tested by researchers' highlights that the product gains acceptability in market due to the innovative features a product or service is associated with by consumers in comparison to its competitors. Paytm gained importance as it served as an alternative means of cash transaction for buyers and sellers in a cash crunch economy. The added advantage of safety and security with convenient handling on mobile applications both for consumers and marketers fueled the process of adoption and diffusion for Paytm. The campaign like "Paytm karo" helped in gaining social acceptability. Paytm app gained solid word of mouth publicity. During the cash crunch, the successful handling of Paytm app by reference groups fueled the process of acceptance amongst consumers. Indians by behavior are risk averse; therefore, it was essential for Paytm to gain the support of references for social acceptability. The growing middle class specifically the users of android cell phones where the selected segment for Paytm application due to its huge base in Indian subcontinent. Further government schemes of giving relaxation in transaction cost and prizes to marketers who adopted digital modes of accepting payments held in growth of Paytm. Further Paytm used extensive branding strategies to position itself as the best mobile wallet in the eyes of its targeted segment.

6. Discussion

Innovation is the key to survival for companies. The companies must understand that if companies are unable to innovate than they will perish in future. The companies must assess future needs and develop products for future. The success of innovation leads to better employability and high economic growth. Osselaer *et al.*, (2000) indicated that brands can be used as a better indicator of quality than attributes by customers. The growth of brands like paytm highlights power of brands. Research highlighted that consumers were unaware of its various innovative features but still presumed that it is safe. The hypothesis that association of risk with innovation can lead to slower adoption and diffusion was aptly combated by brands like paytm and their banding techniques.

Brawn *et al.*, (1999) opined that the advertisements support a particular experience. The advertisement of paytm emphasized that it is easy and quick step by step process which is secured at the end of consumers and marketers. The usage of paytm application delivered the promise thus paytm gained better adoption in comparison to other mobile wallets. Haugtvedt *et al.*, (1994) indicated that the repositioning of brands must be aligned with the belief. Paytm highlighted that by using Paytm the consumers where helping the government to combat black money. The consumers wanted to be an active support to this premise therefore they satred using digital payment modes. Erdem *et al.*, (2004) concluded that credibility in application and

usage of a product or service will surely increase the consideration of a brand to a large extent. Paytm is now registered as a secure mobile wallet and is slowly increasing its association with more suppliers and manufactures and growing in leaps and bounds in its operations.

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