

# Mobile Marketing with QR Code: An analysis using Technology Adaption Model

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## Abstract:

**Purpose-** The purpose of this paper is to identify the unique way to bridge an offline into an online mobile marketing with the QR Codes.

**Design/methodology/approach-** The study is about the QR Code in the mobile marketing, in the present scenario generation are very familiar with the mobile phones, by this marketer can promote their business by using QR Codes in the internet advertising and giving awareness about the payment system through QR Codes.

**Findings-** The study tells you about the three situations, Awareness, Acceptance and the Sustainability of the QR Codes in the mobile marketing, the results of this is if there is an awareness about code there is huge demand for the Acceptance, Awareness and acceptance has direct relationship and acceptance and sustainability has direct relationship.

**Practical implications-** To survive QR Code in the mobile marketing technology, first thing spread awareness about QR Code and implement the good quality scanner application in mobile phones.

**Originality/value-** Overall it shows about the people using technology in an effective way by this there are two advantages like public can know about the technology and country will grow faster in a technological sense.

**Keywords-** QR Codes, Mobile Marketing, SGM, Technology, Internet advertising, Awareness, Acceptance, Sustainability.

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## I. INTRODUCTION

In the present generation every businessman wants to promote their product in an easy and inexpensive way, this QR Code can help them to spread their message to the public, but the problem with this QR Code is storage of data capacity, in an every QR Code they can share their business views, videos to promote their business, information of their product and Advertising posters, but there is some limit to insert a data into the QR Code, this might get disappointment to the business promoters.

Nowadays there are lots of mobile users so that the QR Code system became most popular than before (Hirose, 2012). This is a very advantage to the

business promoters they can spread their business by using this mobile marketing as a major, This mobile marketing will more effective than the other marketing techniques, to share the data in mobile marketing they can use this QR Code as a base and they can insert any type of data in it and they can share it through internet, this is one of the easy ways and it reaches to the customers very quickly than the other methods, for example nowadays payments through the Paytm are done by using QR Code.

Instead of many advantages, The QR codes are just a barcode scanner which is in a square shape, if it gets damaged the images the entire QR Code doesn't work, this challenge gives you to demonstrate the best and with a superior quality image which should

have near-perfect scanning ability (Dorofeev, 2015). in the year 2013, a test conducted with the user to know about their behavior with the QR Code, in that survey, this QR Codes proved that in the future the growth of QR Codes will increase by 40% to 200% comparing to typical bar codes

So that the business marketing promoters must concentrate on the data which they have to insert in it and they must figure it out which type of data or information will attract the audience (Cata, 2013). The information which they are going to insert in it must create a positive thought to the customers this might work to gain the customer attention on the product.

The focus of this QR Code is to advertise the products of the company and to promote the name and fame of the organization (Watson, 2013). This type of marketing is done by using the mobile phones. This QR Code is a simple but effective, it reaches to the targeted customers and automatically the value of the company raises, this type of marketing is known as the mobile marketing by using the QR Code.

## II. LITERATURE REVIEW

There are few studies researched about the Mobile marketing in the QR Code by using the technology adaption model

The research on user's acceptance of payment through QR codes, shows rapid improvement is to examine user's acceptance of the payments through QR Code. The current trend shows rapid improvement in the usage of smartphones Cabanillas (2015). So, there are many features that make daily life easier through mobile phones. Because of this trend, most of the technology companies are trying to increase the number of services available, including mobile payments. Mostly users concerned for mobile payments and there are multiple sectors that are being implemented, one of the best methods is to facilitate payments through QR Code. So, to improve this point of sale service they are starting to accept QR payments in retail sectors.

The study by Murdock (2013), says about the QR Code in retail marketing, this research is done by the

college students, in this paper they say about how they are using QR Code by using the mobile marketing like after buying all the things they are paying the bill amount via Paytm or other payment options with the help of the QR Code The main aspect is TAM by this only they are implemented to pay through the mobile, by this technology after they done their shopping they are paying through the mobile, this is not only in the shopping point of view it works everywhere in the retail stores. While another study researched about the value of the customers and retailers by using the mobile marketing. The research targeted retail customers like region based, location-based, area-based. To investigate how the customers attracted towards the sale of the company and uses of the code is increased, with the help of mobile marketing by using QR Code (Bredican, 2013).

The overall picture the mobile marketing by using the QR Code in many countries like China, Japan etc. depicted in study. In this countries they use in different ways they are like putting QR Code on children bags if they miss a child, the surrounding people can scan and they will inform to their parents, their strategies how they used and implemented (Yerelian, 2013), with the growing population there are a lot of mobile users will also grow with the generation, in the upcoming years there are lots of mobile marketing demand so this QR Code is very important, this can be shared via social media also to implement the fame of the company, this educates the people who are using the mobile and gets the awareness of the brand, this type of marketing may not get the results very quickly it is the long-term process.

Based on the above article we know that this QR Code uses in many effective ways like in educational intuitions, Bus stops Cars manufacturing, retail stores. This QR Code used with the help of internet, sometimes the internet won't work and there is one more drawback like the QR Code square box will get damages and get erased, so in that movement the Code doesn't work it also effects because of the technology Sakaguchi (2013), this might get the

customer dissatisfaction and causes the loss of customers with the QR Codes, So to get attract consumers the manufactures of QR Code have to use the technology in many effective ways.

The research paper says about the physical and digital world how it connects, the connection is done by using the QR Code like payments etc. In line with this, QR Code the input of data is very less like there are certain limits it should not exceed those limits for this reason the marketers can't be able to adjust all the data for that reason they wanted to insert the data which gives the knowledge about the product to the customers, to store the data in the matrix square box they are using so many techniques like RFID and NFC by these elements only the data can be stored in the code, this is how the QR Code exchanges the stored data (Hipolito, 2012).

The study first investigated the technology adoption model, it means the customers use the mobile phones, internet etc. Customers' acceptance level is different from person to person, some of them like to receive the ads in terms of messages but some may not agree with so, hence the kind of behavior might work to promote the QR Code in the marketing, towards mobile marketing communication present study shows a positive impact on it and, they accept this kind of new strategies (Rowley, 2013).

Another research, explained the sustainability of QR Code in the mobile marketing, which discussed implementing a new strategy to the customers is not an easy task it is a crucial role and collecting the data from the customers either they are familiar with this code or not and have to give awareness to the retail holders and then this QR Code generates this value to the advertised products, after accepting the consumer and retailer then only the uses will increases and sustainability will increase this can make sense to promote the product in using QR Code (Atkinson, 2013).

Since the usage of the mobile phone is increased with this advantage, the QR codes can be implemented and give awareness to the customer and as well as to retailers, after implication of this idea the customers and the retailers can save time

and it reaches to the customers in an effective way. Basically, this idea gives space to the customers and retailers to set up a new mart (Shinde, 2017)

Every consumer have a fundamental "right to know" that the product they are purchasing contains ingredients under genetically modified organisms (GMO), moreover consumers favor to the products which are labelled with GM foods and in fact 40% of americans already believe that "foods with genetically modified ingredients are generally worse for health than foods with no genetically modified ingredients". The National Bioengineered Food Disclosure Standard of 2016 says that they prefer to provide the detailed information about GM ingredients to consumers by using Quick respond Code on their label, which connects the consumer to disclosure information published on a website (Hallman, 2018).

This describes about the characteristics of mobile marketing in current trend, availability of the smartphone in the market is very cheaper rate because of this the users of the internet is increasing very high when compared to the past usage, so this QR Code works in a very effective way based on this we can know that the weakness of the customers is mobile usage this can work as a strength to the QR Code so based on this survey information the QR Code has the best future (Smutkupt, 2010).

Based on the above articles survey the research gap is till now the reach of this QR Code to the public is very low, some countries like China and Japan are very fast in this technology and they are growing faster when compared to India. This type of technology mostly affected by the young generations like secondary education students, graduation students but the old age people like Above 50 years are not very much interested in it because they face troubles to scan with the smartphone because old age people are not that much familiar with the new updates.

Therefore based on customers interaction, we get to know that they are facing problem with scanning a QR Code, sometimes it won't work and they can't take pictures of QR Code, because of this problem

they need right application to scan the provided content in the QR Code, with this QR Code the growth of the technology and the users will increase and this QR code will help to improve the development in the market.

The main objective of this research paper is to get the QR Code technology into the market, and also giving awareness about this QR Code, like in how many ways we can use that code we did the research project based on mobile marketing by using QR Code, because nowadays the users of smartphone is very high and it is a booming technology, this type of technology will attract the more number of users by this advantage can use in a professional way like some of the countries China, Japan is using it in a different way in the manufacturing company and in the bus stop walls etc. By this project main findings is this QR Code can be used in the marketing field and by using this it gets attracted by more number of people and this makes the growth of the market very high and it leads to promote the sales of the company and it will create huge goodwill for the company this can make the better growth of a market in future.

### III. RESEARCH METHODOLOGY

This research design tells you about the methods and procedures used in collecting and analyzing data, in this research the concept is about the QR Code in the Marketing environment, does this work or not. So, we started the research on the basis of consumer awareness about this QR code, if they are aware do they used once or twice and asking them about the experiences and then we started taking survey on acceptance of consumer “The QR Code in the Mobile Marketing” and then we took a survey on sustainability of this QR Code in the future coming generations in the marketing field, we got positive responses to the survey, we targeted the customers from all over India, we took a survey from different places in India, We targeted in India only because the awareness of QR Code in India is very low when compared to other countries like China, Japan etc. In China and Japan, they are using it in different ways

like posting it in bus stops to know timings of bus arrival and departure, we took a survey from young generations and as well as old age people, the response from the young generations are very positive and from the old age people like above 50 they are not much satisfied with this technology.

The information collected from the customers via google forms, in this google form the technique used in three different ways like in the beginning, we asked about the QR Code awareness and after that acceptance of QR Code in the mobile marketing and then sustainability of QR Code in the upcoming generations and this QR Code google forms sent across the people who are well educated and well versed in technological skills.

Google form is one of the used to get responses from the customer and this google forms shared to customers or users by using Whatsapp, Facebook etc.

### IV. DATA ANALYSIS

Data Analysis shows that there are three constraints AW called Awareness, ACC called as Acceptance, STB called as the stability and these three constraints are interrelated to each other and in this we found that there is a high rate of relationship in between the Awareness and the acceptance but there is no direct relationship between the Awareness and the sustainability it will meet through the acceptance and then it gets fits to the research.

**Table 1: Cronbach's Alpha**

Names	Cronbach's Alpha	N of Items
AW	.936	3
ACC	.894	3
STB	.762	3

The above table 1 shows about the Alpha Cronbach Reliability, this hypothesis helps us to support the project under three components like “AW” denotes Awareness is .936 and it has three items and “ACC” denotes Acceptance is .894 and the last “STB”

denotes Sustainability is .762 it has three items, we conclude that the results of our project is very reliable and accuracy, in every field there are three constraints.

**Table 2 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	Approx. Chi-Square	1254.523
	Df	36

	Sig.	.000

The above table 2 shows that the Sampling Adequacy is .781, the minimum required is above the .700, in our project the result is more than required so thus the outcome is satisfactory. And coming to the test of sphericity is well and reached to the satisfactory point.

**Table 3 Total Variance Explained**

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.047	44.962	44.962	2.667	29.636	29.636
2	1.814	20.157	65.119	2.486	27.620	57.256
3	1.357	15.077	80.196	2.065	22.940	80.196
4	.564	6.265	86.462			
5	.405	4.495	90.957			
6	.325	3.612	94.569			
7	.226	2.510	97.079			
8	.164	1.825	98.904			
9	.099	1.096	100.000			

In the above table 3 Total Variance, there are three fields 1. Initial Eigenvalues 2. Extraction Sums of Squared Loadings 3. Rotation Sums of Squared Loadings, in this every field the cumulative percentage minimum required is 70% to the project and the resulting outcome based on the survey by using SPSS AMOS outcome is 80.196 is the cumulative percentage. So, by this table, we can get to know that the project has the good outcome and survey held shows positive impact.

Qs5		.904	
Qs7		.867	
Qs2		.862	
Qs14			.859
Qs13			.834
Qs11			.751

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.

**Table 4: Rotated Component Matrix**

Particulars	Component		
	AW	ACC	STB
Qs1	.936		
Qs3	.904		
Qs4	.891		

In the table 4 The rotated component matrix has three components in every component the required questions is minimum three and the result is as we expected and in every component, there are three and their minimum result us above .800, in the AW component there are three questions and the result of those three are very high and in the ACC component there are of minimum required and then the STB is also very well versed.

Table 5 validity Concern

Particulars	CR	AVE	MSV	MaxR(H)	AW	STB	ACC
<b>AW</b>	0.940	0.839	0.246	0.967	<b>0.916</b>		
<b>STB</b>	0.767	0.525	0.064	0.782	0.216	<b>0.725</b>	
<b>ACC</b>	0.899	0.749	0.246	0.915	0.496	0.253	<b>0.865</b>

Rotated Component Matrix shows the reliability of the selected Question, in this the minimum required components are three fields for every field there should be a minimum of three questions and in the above table the Qs1, Qs3, Qs4 shows the awareness of the QR Codes, Qs5, Qs7, Qs2 shows the acceptance of the customer if it published in the market and the third component Qs14, Qs13, Qs11 shows the sustainability of the QR Codes in the coming future markets predictions.

In this table 5 AW indicates Awareness, STB indicates stability, ACC indicates Acceptance. In the table, every concern is in positive so there are no

validity concerns, by this outcome we can know the project has good going without any errors.

Table 6 Goodness of fit measures

Model	CMIN/DF	RMR	GFI	CFI	RMSEA	AGFI
Default model	1.436	.032	.966	.992	.045	.937

In the above table 6 the default model is in CMIN/DF is 1.436, RMR is .032, GFI is .966 and the RMSEA is .045 these values are below the maximum level 0.08 so this result is good fit.

Table 7 Standardized Total Effects (Group number 1 - Default model)

	AW			ACC		
	TOTAL EFFECT	DIRECT EFFECT	INDIRECT EFFECT	TOTAL EFFECT	DIRECT EFFECT	INDIRECT EFFECT
ACC	.496	.496	.000	.000	.000	.000
STB	.216	.120	.096	.193	.193	.000

In the above table 7 The Standardized total effect model shows that there are direct effect and the indirect effect by adding both that it results to the total effect and in this there are two components they are the total effect of the ACC and the AW is 0.496 and the STB and AW is 0.216 and when it comes to the total effect of ACC and the ACC is 0.000, the STB of the ACC is 0.193.

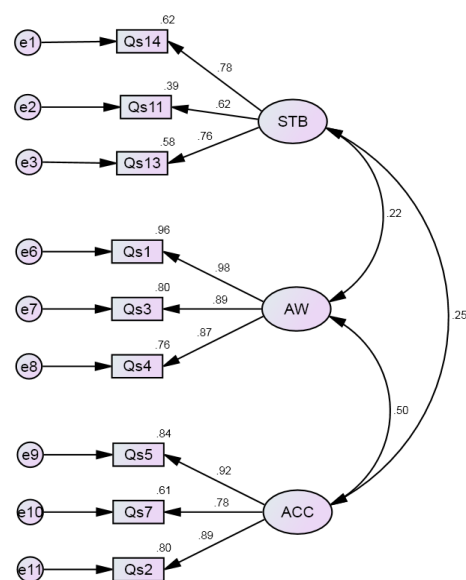


Figure 1 Measurement model

## V. REGRESSION ANALYSIS

The above table and the chart shows the relationship between the Awareness, Acceptance, and sustainability of QR Codes in the mobile marketing, by this chart we can know there is a direct relationship between each other, when coming to percentage criteria relationship between sustainability and the acceptance has 25% so it has less relationship and in between sustainability and the awareness has only 22% this has very low and when comes to Awareness and the acceptance it has 50% this relation has more reliability when compared to the other relations so this chart show that

the acceptance and the awareness has the closely related to each other variables.

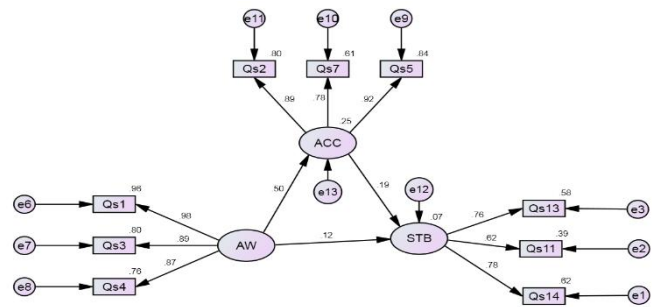


Figure 2 Path model

Table 8 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Remark
ACC	<---	AW	.496	.057	7.537	***	Highly Significant
STB	<---	AW	.120	.066	1.341	.180	Not significant
STB	<---	ACC	.193	.079	2.079	.038	Less Significant
Qs14	<---	STB	.785				
Qs11	<---	STB	.621	.101	7.595	***	Highly Significant
Qs13	<---	STB	.758	.117	8.091	***	Highly Significant
Qs1	<---	AW	.978				
Qs3	<---	AW	.894	.040	23.842	***	Highly Significant
Qs4	<---	AW	.873	.036	22.221	***	Highly Significant
Qs5	<---	ACC	.917				
Qs7	<---	ACC	.781	.059	14.597	***	Highly Significant
Qs2	<---	ACC	.892	.065	17.867	***	Highly Significant

The above table 8 refers the final result of this analysis is, if there is awareness about the QR Code to the people then acceptance will increase the acceptance percentage is high if it has awareness about the code, there is direct relation between awareness and acceptance but there is a less reliability when compare to the other relation, if there is a relation between awareness and acceptance then automatically there is a existence of sustainability, the relation between acceptance and sustainability is 19% there is less sustainability when compare to the awareness and acceptance, with this analysis we can get to know that there is a relationship between each other field but there is less reliability in some circumstances so they are interrelated to Awareness, Acceptance and Sustainability, the above table Regression weight

indicates the clear relationship between Awareness, Acceptance and Sustainability.

## VI. DISCUSSION

The findings of this study represents that the people are aware of about the QR Code but they don't know where to use, how to use and they know only about the Paytm transactions payments in India, but in some other countries like China and the Japan are well developed they are using this QR Code in so many ways like in the bus stops to know about the bus timings and in the manufacturing company to know which part belongs to which place in a car or bike and also on children's bags by inserting the address in the QR Code. Basically, there is no much awareness about the code in India. In other countries they are well developed in the terms of technology

and they are well literate people who can know easily about the technology and they are used to it, But in India the technology developers have to give some idea about the technologies, this type of QR Code technologies will increase the countries growth and as well as it is a part in a technological way, Chris Landry(2011) this QR Code uses in many ways now this research paper says that the QR Code can be used in the marketing terminology like inserting the data in the QR Code and sharing it in the social media like what's up, Facebook, twitter etc. By this the people can know the details of the product which we inserted in it the QR Code by scanning that, Alison Hicks(2011) and also people can attract to the new type of technology and the growth of that product will grow very quickly and have to improve the quality of the QR Code because sometimes QR Code may not work due to distraction of design post so while printing the QR Code that has to be in thick and quality by using well versed technology, if quality of the QR code is not good this might get a lot of disadvantages like loss of consumers, no users of QR Code and fewer consumers of the product which inserted in it, Based on the survey held by using google forms the awareness of QR Code is high and acceptance is high when there is an awareness and there is no direct relationship between Awareness and sustainability.

The findings of this study signifies that this type of technology attracts young generation quickly and the young people are very curious about the new technologies, so if any information required in a practical way just ask young generations to use it and ask them to give a report of that particular thing and also in that you may get perfect solution or may not because sometimes the information will be inappropriate, and now a days the application for QR Code is not there but there are many users with out proper QR Code application this might not work properly because in the smartphone sometime camera captures the Vishrut Sharma(2012)QR Code but sometimes it will not recognize this is the main draw backs to the QR Code

And asking the people to involve in the survey this may makes more better performance by knowing their thoughts and allot some of the intelligent people who know about the technology and who likes the Mabel Vazquez-Briseno(2012)QR Code this makes some better improvement in the future

implementation of this code, this type of technology may increase the growth of the code and gives the people awareness about the new technology.

## VII. CONCLUSION

Our study set out to enhance our understanding of the research paper is the consumer has the good awareness about the QR Code but there is an acceptance in the market but there is some drawback to this like there is no proper application, not a good quality of QR Code and low rate of security system with this the consumers are not willing to use this code if the implement proper application to this then only the acceptance of consumers will increase by this growth of the QR Code will increase, this acceptance may lead to use of QR Code in many ways like using in the marketing fields by advertising their products and in manufacturing companies to discover the parts of the car or bike and if there is good acceptance in the market then the sustainability will be very high this makes the use of the product in the future is very high because if there is a good facility to use this everyone will get attracted to it and they are very curious to use this code this leader to the growth of the users if users grows automatically the demand for this will grow this leads to the good sustainability of QR Code in the mobile marketing, the implications of this theory involves the technology this makes the people grow in the technological background, if there is a better use of technology it makes the increases in the usage of QR Code because of this we are using technology adoption model, in the implication of practices they have to target the young generations because this generation get attracted to the new upcoming technology and then it rapidly spreads to the all types of people, and in the limitations and future framework it involves the problems how it will faces in the future like if the QR Code is not in the good manner or with the poor quality it faces the problem with the scanning so that to avoid this type of error, we have to come up with the software or application which can be possible to get scan with that application so this type of method of advertising in

the mobile marketing will increase the popularity among the audiences and the growth of the company will also grows very effective way.

#### VIII. LIMITATIONS AND FUTURE RESEARCH

Our findings should be interpreted from some outcomes like the future research is on the proper awareness about the QR Code in the general public, not only for the young generations it must reach to the every individual in the current market then only they can get to know about the advertising product which is in the QR Code, if it fails to give awareness they will fail in their marketing strategies and they didn't find well promotions to their product in the market, and one more basic thing is like there should be a proper application to scan the QR Code because now a days there a lot of QR Codes users but there no proper scanner to this, they used to scan with the help of their smartphone camera but sometimes it may work but all the time it wonts works because of this reason they are not moving toward this Sana Nseir(2013) QR Code if we have good and well versed technological application we will get good customer attention and if we implement the good application it reaches to every customer in the market it means not only the young generations but also to the old age people if there is a proper application everyone will put their efforts to use the QR Code and it will get succeeded in a short time span and some of them are not scanning the QR Code because of some security issues due to this no one is trying to do scan because by this some of the frauds getting all the information from the phone so that we have to improve more efficiently by using good technology then only customers can get attracted and it will improve the sustainability in the market and it leads to the growth of the market as well as country.

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