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QR Codes and Mobile Marketing: Advertising Strategies and Consumer Intentions in Developing Economies

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Abstract: *Mobile Marketing is a form of marketing which enables planners to communicate and persuade consumers through any mobile device or network. In developed economies, QR Code-supported advertising campaigns were started not long ago however fast-paced developing economies are catching up with the momentum. Many types of research had mixed results about the process of proliferation of QR Codes however in developing economies, organizations are completely ignoring cultural and societal effects on the popularity and accessibility of QR Codes being used on different mobile devices. The purpose of this study is to investigate the accessibility and intentions of QR Codes used in any advertising campaign in relation to trust and cultural environment. It is hypothesized that QR Codes might not be as successful as it was in developed countries due to new media literacy and social acceptance of such a technology. This research will provide a guideline for marketers to distinguish the grey line of using QR Codes with respect to a particular product rather than just following a bandwagon of developing economies. The data will be collected through a survey of 975 respondents from Turkey, China, and Pakistan. Knowledge Attitude and Behavior of consumers towards scanning QR Codes will be tested in association with their cultural and environmental settings.*

Key Words: QR Codes, Mobile Marketing, Advertising, Intentions, Knowledge, Attitude, Behavior

Introduction

At the global level usage of smartphones is increasing rapidly, and it is expected that in 2020 penetration of mobile devices on the global stage will be 59% (Meydanoğlu, 2018). In developing countries, smartphone usage is increasing specifically after introducing 3G and 4G mobile data services. Due to the increasing usage of mobile devices, a new marketing trend has started in recent years called mobile marketing. Traditional marketing is different from mobile marketing, mobile advertising offers detailed, secured and personalized access to information about the advertised product (Meydanoğlu*, 2018).

The usage of mobile technologies makes easier the interaction between consumers and marketers. Business organizations have started QR codes as a tool for mobile marketing. It is a source of the active participation of consumers during marketing (Meydanoglu, 2013). One of the major contributing elements in mobile technologies is QR codes which can be used in interactive marketing (BĂLĂȘESCU, 2017). The market strategist is using QR codes as a marketing strategy to get more consumers. QR code-based marketing campaigns are more beneficial than traditional marketing tools (Meydanoglu, 2013). During marketing campaigns, QR codes are used to provide sophisticated and detailed information about the product and it is very easy to influence the business companies to reach a targeted audience. With the ongoing development of mobile technologies, it has an impact on marketing and its strategies. In the communication field, mobile technology has a vital role, it is a source of conveying any kind of message towards the audience. With highly increased mobile usage, the business community has changed their marketing campaigns (Klein, 2014).

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QR Codes Technology

Initially, CR codes were a two-dimensional symbol which was invented by DENSO in 1994. DENSO was one of the major groups of Toyota companies, and this group approved ISO (International Standard) in 2000 (Soon, 2008). The two-dimensional symbol was initially used only for the production control of automotive parts. With the passage of time, these codes were being used in other fields also, and now these codes are famous in every field (Soon, 2008). Quick response codes known as QR codes, are in the shape of a digital image which can be scanned by any smartphone's camera. After scanning this digital image it will quickly show the embedded further data about the concerned product (Cata, 2013). Initially, QR codes were invented in 1994 by a Japanese company called DENSO WAVE, at that stage barcodes (a classical form of QR Codes) were used for tracking parts in vehicle manufacturing (Meydanoğlu*, 2018).

Classical barcodes have the capacity to contain one-directional data while QR codes have the ability to contain vertical and horizontal data which can be encoded with scanning (Klein, 2014). Consumers can use QR codes when they wish to know detailed information about any advertised item (BĂLĂȘESCU, 2017). QR codes deliver relevant and efficient information in a secure way to smartphone users who want to know further details about the scanned product (BĂLĂȘESCU, 2017). QR codes are being applied in many areas due to having a large capacity of data containing. In the field of mobile marketing campaigns, QR codes are being analyzed in various ways to determine how much they are for the business sector (Klein, 2014).

Mobile Marketing

Mobile marketing can be defined as systematic practices that facilitate business organizations to communicate efficiently with consumers with the help of mobile devices (Klein, 2014). Mobile marketing is a new source of satisfaction for consumers towards any product by providing them with proper and sufficient information about the given item. Mobile marketing enables marketer's bilateral communication with consumers (Meydanoğlu*, 2018).

SMS, MMS Bluetooth, and other mobile applications are used by marketers for the engagement of audiences, likewise, QR codes are now on the same page for being used as an instrument of mobile marketing (Narang, 2012). QR codes are being incorporated in mobile marketing campaigns such as giving some discount deals to the costumes (Meydanoglu, 2013).

The market strategy is defined as a tool for any company for the satisfaction of the targeted customers. Companies used to adopt various strategies for influencing customer's behaviour in certain ways (Klein, 2014). Mobile marketing is one of the effective strategies for companies to achieve their marketing goals while interacting with consumers through smartphones (Ali, Riaz, & Rashid, 2024).

With the rapid advancement of new communication technologies, mobile devices give rise to the business community and also play a role in making marketing strategies. Marketing strategy is defined as market-driven logic by any business organization to gain their targeted customers (Klein, 2014).

In developing economies like China, Turkey, and Pakistan, QR codes as a tool of mobile marketing strategy are gaining popularity. In these countries, QR codes are being used for various purposes, especially in the field of mobile marketing.

Advertising Strategies

An advertising strategy is a helping source for marketers to structure their marketing activities, also called marketing mix (Klein, 2014). According to McCarthy, there are four fundamental essentials of marketing mix "price, product, promotion, and place or distribution". This definition was product-oriented because of customer's need was not recognized directly (Klein, 2014). After McCarthy, Lauterborn suggested another four elements in 1990 that were “Classification-costumer, cost, communication and convenience” (Klein, 2014). This definition of marketing mix seems related to consumers because convenience is the easier way to provide a product to the customer.

With increasing new means of communication technologies, it is very important for the business company's bilateral communication attraction with customers (Meydanoglu, 2013). Customer satisfaction is related to two-way communication which is a source of establishing good relations with consumers and now it is happening with the help of QR codes.

With the evolution of the internet and its massive usage, marketing strategies turned into E-marketing strategies (Rashid, Zeb, & Ansari, 2024). These can be defined simply as the incorporation of electronic communication technology to achieve marketing goals. QR codes as an advertising strategy mean that marketers are providing and offering a wide range of information about advertised items. Their codes are also a way of attracting non-relevant customers due to the existence of curiosity regarding scanning the codes and seeing what is behind them (Meydanoglu, 2013).

Despite all the compensations QR codes are not all the time effective for marketing strategy because of a lack of knowledge and different cultural environments. Marketers should also care about the cultural and social conditions of a particular area before conducting a marketing strategy. In developed countries, QR codes are effective as a marketing strategy but in developing economies, QR codes are not as popular due to a lack of awareness about new technology, and educational and social background. Technological trust is not built in developing countries, people are used to old kinds of buying methods and practices. Transformation of the old fashion into the adaptation of new technology is not a rapid and easy process.

Literature Review

The contribution of QR codes for marketing strategies depends on the nature of the product because QR codes may not be useful for all kinds of products (Narang, 2012). It is tested that in India consumers felt mentally relaxed after getting information about the concerned product but these codes are not effective for mobile marketing strategies because of the low awareness about the QR codes technology among the people of India (Narang, 2012).

In different kinds of pieces of literature, the usage of QR codes is defined as an advertising tool for business and advertising is the most effective tool for boosting business for any company (Küçükaltan, 2014). Usage of QR codes integrated with social media advertising tools can be valuable for Logistics companies (Küçükaltan, 2014).

QR code's popularity and usage have been measured among university students in Turkey. The data showed that 80% of students are familiar with the QR codes and there was no such difference among the male and female students regarding the usage of QR codes (Klein, 2014).

There are some drawbacks of QR codes as a mobile marketing tool identified by Teuta Cata and his fellow researchers one of them is that customers who are not used to technology are usually confused about how to scan QR codes because of this confusion they don't bother themselves to involve with that stuff (Cata, 2013). It is the marketer's responsibility to inform simply and in a sophisticated way to customers how to scan QR codes. The second drawback is that there is not one unanimous app to scan QR codes provided by different Play stores on smartphones (Cata, 2013). Some apps are not capable of scanning information behind these codes because they are not developed by authentic developers. The third one, marketers need to understand there is a lot of useless data available online, they should customize these irrelevant websites which are bothering customers while they are scanning QR codes and as a result visiting some useless websites.

In 2013 there was a survey conducted among the private colleges of Istanbul Turkey by the researchers, they concluded that 80% of the students from the responded were able to recognize QR codes. Half of them have incorporated QR codes for different purposes, for example, buying food and online shopping. They concluded that among the college students recognition level was high and the adoption level was low (Demir, 2015). They predicted that this ratio might be high among university students because they are of traditional age having more information and education regarding technology. In 2011 the same kind of study was conducted in North America by Sago and he had a different kind of results because of the difference in culture and education level (Demir, 2015). At the end of the research, Seda Demir and his fellows concluded that Istanbul is a modern city as compared to other demographical cities. There is a lot of difference among the people of other cities in the familiarization and adaptation of new technologies.

A cross-cultural comparison between the consumers of Turkey and Germany regarding QR code advertisement was conducted by Ela Sibel Bayrak Meydanogolu and fellow researchers in 2018. They analyzed the consumer's ad-scanning behaviour and what are the factors behind this action (Meydanoğlu*, 2018) After getting the responses from both countries they came to know that 59% of

Turkish respondents never scanned QR codes and the rest of the others didn't know how to scan QR codes (Meydanoğlu, 2018). On the other hand, German consumers had an 80.6% higher level of knowledge regarding QR code scanning behaviour then Turkish respondents (Meydanoğlu, 2018). Culture, demography and education level do matter in QR code advertising campaigns.

Another research was conducted in Brasov a city in Romania 2017. The research was about the interest of consumers in QR code scanning in pubs and restaurants (BĂLĂȘESCU, 2017). Respondents were from different developed countries like France, Greece, Australia, and Germany and also from Turkey. The research concluded that 92.36% of respondents were totally familiar with QR codes, they have particular interests in new technology because they were all from developed countries and also well-known new technology.

Consumer behaviour and their intentions towards QR codes in mobile marketing in cross-cultural perspectives like Japan and India examined by Hemant Bamoriya. A scenario-based experimental method was adopted and he found that culture does influence the behaviour and intension of the consumers in using QR codes (Bamoriya, 2014). He concluded his research that Japan is ahead in the exposure of QR codes in mobile marketing as compared with India.

The purpose of this study is to investigate the accessibility and intentions of QR Codes used in any advertising campaign in relation to trust and cultural environment. It is hypothesized that QR Codes might not be as successful as it was in developed countries due to new media literacy and social acceptance of such a technology.

Hypothesis

H_1: Knowledge of QR Codes is positively correlated towards inclination for more positive Scanning of QR Codes among the youth of Turkey, China, and Pakistan.

H_2: More Knowledge about QR Codes, will enhance positive Attitudes towards QR Codes scanning and uses and gratifications among the youth of stated countries.

H_3: More exposure and interaction with QR Codes will change the behaviour of the youth in selected countries

H_4: Cultural differences irrespective of Uses and Gratification OR KAB (Knowledge, Attitude and Behavior) have profound differences in the scanning of QR Codes.

Research Methodology

In order to test the above hypothesis a survey was conducted among the university students from Turkey, China, and Pakistan. The data is comprised of the respondents to the questionnaire which is distributed among the university students, 280 from Turkey, 374 from Pakistan and 321 from China. The Pakistani respondents were the students of five universities located in Islamabad. Turkish students were from the universities of Istanbul and Chinese from the various universities. The questionnaire was developed in the English language which is easily understandable for both graduate and undergraduate students.

Table 1

Reliability Test of Variables A to E

Reliability Statistics			
Topics	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
A	.792	.792	9
B	.779	.796	15
C	.861	.867	10
D	.882	.882	10
E	.772	.771	9

As indicated in table 1 the reliability test of the variables as indicated in the Questionnaire are for Topic A representatives of Cultural influence in Cronbach's Alpha based on Standardized Items is .792 and the number of items included are Number of Items =9. While Topic B representatives of habits and beliefs in Cronbach's Alpha based on Standardized Items is .779 and the number of items included is *N=15*, topic C

representatives of education and information in Cronbach's Alpha based on Standardized Items is .861 and the number of items included are *N=10*, topic D representatives of uses and satisfaction in Cronbach's Alpha based on Standardized Items is .882, and number of items included are *N=10* and topic E representatives of intentions in Cronbach's Alpha based on Standardized Items is .772, and number of items included are *N=9*.

Table 2

Country of Residence

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Turkey	280	28.7	28.7	28.7
	Pakistan	374	38.4	38.4	67.1
	China	321	32.9	32.9	100.0
	Total	975	100.0	100.0	

As indicated in table 2, 280 respondents were taken from Turkey which is 28.7% of N=957, Pakistani respondents were 374, 38.4% of all population, while 321 were Chines citizens were taken as respondents which were 32.9% of N=975.

Table 3

Age Groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20	153	15.7	15.7	15.7
	21 through 23 years	240	24.6	24.6	40.3
	24 through 26 years	316	32.4	32.4	72.7
	27 through 29 years	100	10.3	10.3	83.0
	30 and above	59	6.1	6.1	89.0
	Missing	107	11.0	11.0	100.0
	Total	975	100.0	100.0	

This indicated that age groups of respondents 15.7% were below the age of 20, 24.6% were between 20 to 23, 32.4% 23 to 26, 10.3% 27 to 30, 6.1% were above 30 and 11.0% were missing from the age groups

Table 4

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduate	287	29.4	29.4	29.4
	Undergrad	596	61.1	61.1	90.6
	2.00	7	.7	.7	91.3
	Missing	85	8.7	8.7	100.0
	Total	975	100.0	100.0	

As mentioned above in table, 29.4% of the N=975 were graduates, 61.1% were undergraduate and 8.7% were missing.

Table 5

Discipline of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mass Communication	120	12.3	13.4	13.4
	Business Administration	84	8.6	9.4	22.7
	Computer Scineces	110	11.3	12.2	35.0
	International Relations	13	1.3	1.4	36.4
	Others	271	27.8	30.2	66.6
	Missing	300	30.8	33.4	100.0
	Total	898	92.1	100.0	
Missing	System	77	7.9		
Total		975	100.0		

The above table indicated that the discipline of education of the respondents from three countries. 12.3% of students from N=975 were from the Department of Mass Communication, 8.6% from Business Administration, 11.3% from Computer Sciences, 1.3% from International Relations, 27.8% from other departments and 30.8% were missing.

Table 6

Internet Usage in Hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	5	.5	.6	.6
	1 hour	40	4.1	4.4	5.0
	2 hour	50	5.1	5.5	10.5
	2.50	41	4.2	4.6	15.1
	3 hours	122	12.5	13.5	28.6
	4 hour	149	15.3	16.5	45.2
	5 hour	369	37.8	41.0	86.1
	6 Hours	40	4.1	4.4	90.6
	Missing	85	8.7	9.4	100.0
	Total	901	92.4	100.0	
Missing	System	74	7.6		
Total		975	100.0		

As mentioned in table 6, the internet usage of the respondents per hour in a day, 4.1% of N=975 were 1-hour internet users per day, 5.1% 2 hours, 4.2% 2.5 hours, 12.5% 3 hours, 15.3% 4 hours, 37.8% 5 hours, 4.1 % 6 hours and 8.7% were missing from N=975.

Table 7

Father's Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduate	39	4.0	12.1	12.1
	Undergraduate	89	9.1	27.7	39.9
	9.00	193	19.8	60.1	100.0
	Total	321	32.9	100.0	
Missing	System	654	67.1		
Total		975	100.0		

As indicated in table 7, 4.0% of the respondents from N=975 their fathers were educated and 9.1% were undergraduate. While 32.9% were missing.

Table 8

Income of the Respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	250$	56	5.7	17.4	17.4
	500$	46	4.7	14.3	31.8
	750$	26	2.7	8.1	39.9
	1000$	21	2.2	6.5	46.4
	1001	22	2.3	6.9	53.3
	Missing	150	15.4	46.7	100.0
	Total	321	32.9	100.0	
Missing	System	654	67.1		
Total		975	100.0		

Table 8 indicates the income level of the respondents that 5.7% of N=975 has 250$, 4.7% has 500$, 2.7 has 750$, 2.2% has 1000$, 2.3% has 1001$ and 67.1% are missing.

Table 9

Social Media Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	94	9.6	29.3	29.3
	2.00	36	3.7	11.2	40.5
	3.00	6	.6	1.9	42.4
	9.00	185	19.0	57.6	100.0
	Total	321	32.9	100.0	
Missing	System	654	67.1		
Total		975	100.0		

As mentioned above in the table, 9.7% of N=975 respondents were social media users 1 hour per day, 3.7% were 2 hours, .6% were 3 hours, 19.0 % didn't have any idea how much they are using social media and 67.1 % were missing.

Table 10

Type of Smartphone in Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	iOS	79	8.1	24.6	24.6
	Android	182	18.7	56.7	81.3
	Other	14	1.4	4.4	85.7
	Missing	46	4.7	14.3	100.0
	Total	321	32.9	100.0	
Missing	System	654	67.1		
Total		975	100.0		

Table 10 indicated which type of smartphone was used by respondents, 8.1% from N=975 were a user of iOs, 18.7% were Android users, 1.4% were the user of other mobiles, 4.7 % were not mentioned their mobiles type and 67.1% were missing.

Table 11

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	145	14.9	44.5	44.5
	Married	7	.7	2.1	46.6
	Missing	174	17.8	53.4	100.0
	Total	326	33.4	100.0	
Missing	System	649	66.6		
Total		975	100.0		

As mentioned in the above table 11, 14.9% of respondents from N=975 were single, .7% were married, 33.4% respondents didn't mention their marital status and 66.6% were missing.

Table 12

Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	520	53.3	53.3	53.3
	Male	400	41.0	41.0	94.4
	Missing	55	5.6	5.6	100.0
	Total	975	100.0	100.0	

Table 12 indicated that 53.3% of respondents from N=975 were females, 41.0% were males and 5.6% of the respondents didn't mention their gender.

Table 13
ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Culture Computed	Between Groups	6.330	2	3.165	2.600	.075
	Within Groups	1178.479	968	1.217		
	Total	1184.809	970			
Beliefs of the Respondents	Between Groups	.845	2	.422	.319	.727
	Within Groups	1196.578	905	1.322		
	Total	1197.423	907			
Knowledge of Youth about QR Codes	Between Groups	16.822	2	8.411	3.657	.020
	Within Groups	2219.805	965	2.300		
	Total	2236.627	967			
Attitudes of Youth towards QR Codes	Between Groups	17.839	2	8.919	4.146	.016
	Within Groups	2082.378	968	2.151		
	Total	2100.216	970			
Intentions of Youth Towards Scanning of QR Codes	Between Groups	46.298	2	23.149	12.827	.000
	Within Groups	1739.821	964	1.805		
	Total	1786.120	966			

1=Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree

The above table shows the output of the ANOVA analysis, as this table indicated that there is a significant difference between means groups. The first two groups from the table have 0.075 and 0.0725 significant values which are high 0.05, which means the first two groups have no significant value. As results indicated in the third group Knowledge of Youth about QR codes, there is a significant value is 0.02 (i.e. *P*=0.02) which is below 0.05. In the fourth group Attitudes of Youth towards QR codes, there is a significant value is 0.016 (i.e. *P*=0.016) which is below 0.05. In the last group Intentions of Youth towards scanning of QR codes, there is a significant value is .000, which means it has a more significant value as compared to other groups.

Dependent Variable Association and Correlation with Socio-demographic Data

Table 14
Correlations

		Country of Residence	Gender of Respondents	Age Groups	Education Level	Internet Usage in Hours	Income
Culture	Pearson Correlation	-.007	-.013	.010	.040	.047	.246**
	Sig. (2-tailed)	.833	.694	.756	.211	.156	.000
	The sum of Squares and Cross-products	-5.704	-27.661	24.135	103.076	92.303	409.511
	Covariance	-.006	-.029	.025	.106	.103	1.296
	N	971	971	971	971	897	317
Beliefs	Pearson Correlation	.026	-.017	.037	.054	.078*	.210**
	Sig. (2-tailed)	.434	.604	.269	.105	.023	.000
	The sum of Squares and Cross-products	21.181	-36.095	86.839	131.912	147.099	337.119
	Covariance	.023	-.040	.096	.145	.174	1.120
	N	908	908	908	908	847	302

Knowledge	Pearson Correlation	-.087**	-.065*	.019	-.092**	.052	.169**
	Sig. (2-tailed)	.007	.042	.551	.004	.120	.003
	The sum of Squares and Cross-products	-99.687	-196.469	63.719	-319.616	138.914	322.813
	Covariance	-.103	-.203	.066	-.331	.156	1.028
	N	968	968	968	968	894	315
Attitudes	Pearson Correlation	.078*	.027	.028	-.009	.038	.153**
	Sig. (2-tailed)	.015	.401	.385	.781	.256	.006
	The sum of Squares and Cross-products	87.583	78.424	89.762	-30.613	98.844	298.025
	Covariance	.090	.081	.093	-.032	.110	.943
	N	971	971	971	971	897	317
Intentions	Pearson Correlation	.138**	.000	-.012	-.044	-.042	.053
	Sig. (2-tailed)	.000	.989	.708	.167	.208	.346
	The sum of Squares and Cross-products	142.007	1.185	-35.735	-140.117	-99.784	99.810
	Covariance	.147	.001	-.037	-.145	-.112	.318
	N	967	967	967	967	893	315

The correlation test of the socio-demographic variables such as Country, Gender age education internet usage and income was compared with Culture, beliefs, knowledge, attitude, and intentions.

Culture and socio-demographic variables

The correlation test of the Culture with socio-demographic variables, as *Table 14*

Correlations indicates that Culture has many effects on income as compared to another demographic variables such as Country, Gender, Age, Education, and Internet Usage.

Culture's correlation with country residents has Sig. (2-tailed) .833, with Gender, has .694, with Age .756, with education .211 and with Internet usage is .156 which indicates that there is no significant relationship exists among the variables.

While income has a statistically significant linear relationship with Culture is .000 which indicates their significant correlation.

Beliefs and Socio-Demographic Variables

As table 14 *Correlations* shows the results of the correlation test between Beliefs and Socio-Demographic Variables. The result indicates that Beliefs' correlation with Country is .434, with Gender is .604, Age is .269, Education is .105 and with Internet, usage is .023. These results show that there is no significant relationship between Beliefs and Socio-Demographic Variables except Income. There is a statistically significant linear relationship between Beliefs and Income which is .003.

Knowledge and Socio-Demographic Variables

Table 14 *Correlations* shows the correlation test among the Knowledge and Socio-Demographic Variables. Results show that Knowledge has a correlation with Country .007, with Gender is .042, with Age is .0551, with Education is .004, with Internet use is .120 and with income is .003. It means that there is no significant correlation of Knowledge with Country, Gender, Age, Education, and Internet usage. While Knowledge has a statistically significant linear relationship with income which is .003.

Attitude and Socio-demographic variables

Table 14 *Correlations* indicated the correlation test among the Attitude and Socio-demographic variables. The result of the test shows that Knowledge has a correlation with Country .015, Gender is .401, Age is .385, Education is .781, internet usage is .256 and income .006. According to this statistical analysis of correlation, there is a significant linear relationship that exists between Attitude and all Socio-demographic variables.

Intentions and Socio-Demographic Variables

Table 14 *Correlations* indicated the correlation test among the variables. Results of the test show that there is a correlation between the Intentions and Socio-Demographic Variables. Intentions have a correlation with the country is .000, Gender is .989, Age is .708, Education is .167, with Internet usage is .208 and Income is .346. It mean there is a significant correlation between Intention and Socio-Demographic Variables except the Country of residents. There is a statistically significant linear relationship between the Intentions and Country which is .000.

The KAB model is related to Knowledge, Attitude, and Behavior. The theory of Planning Behavior explains properly this model. According to this theory behaviour of the people can be changed through proper planning. With the help of knowledge, behaviour can produce favourable and unfavourable attitudes.

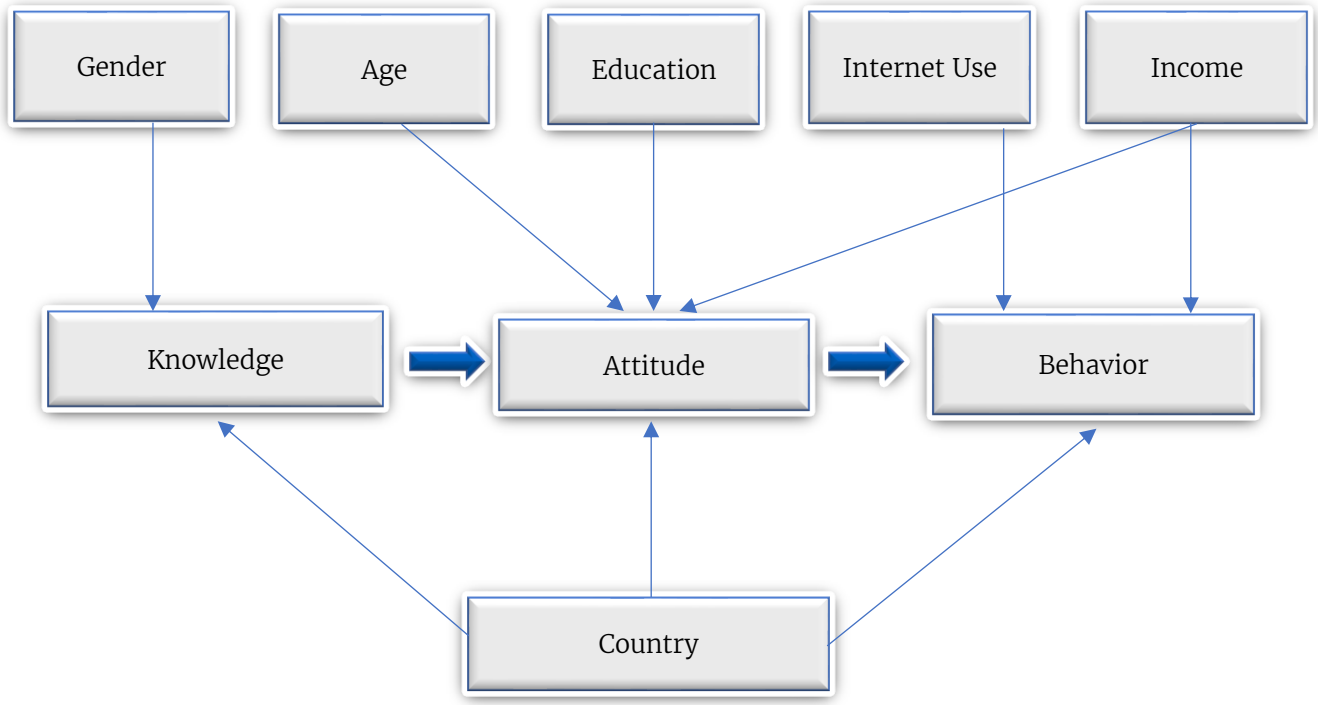
KAB Model

Figure 1

KAB Model

As mentioned above in the Figure, knowledge leads to attitude and this will produce favorable and unfavorable behavior.

Conceptual Framework



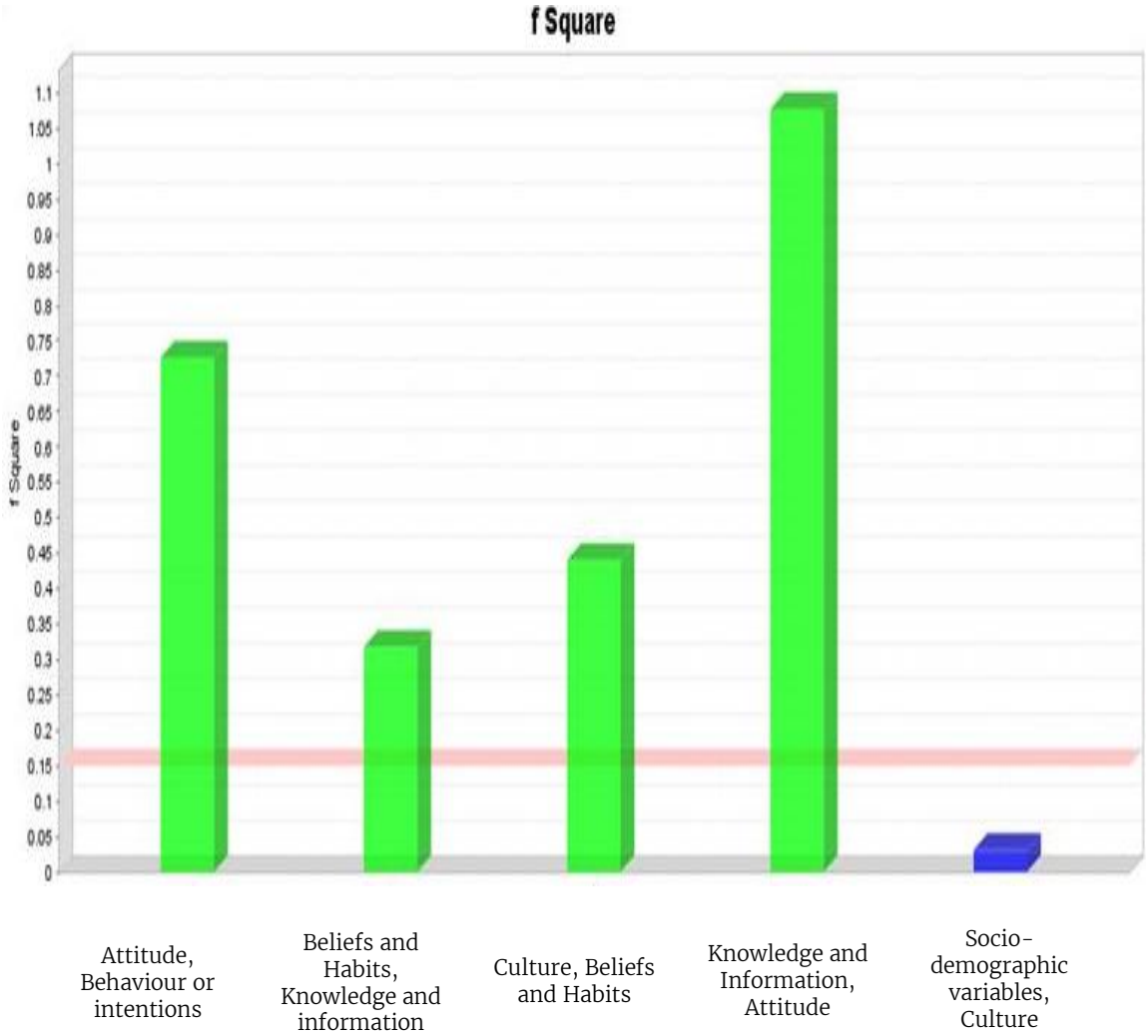
In the aforementioned conceptual model, geographical information is related to other variables like knowledge, attitude, and behaviour. As mentioned in the KAB model, human behaviour can be changed with planning. And how human knowledge turned into attitude and behaviour.

First, Demographic variables like Gender, age, education level, internet use, and income level affect knowledge, attitude, and behaviour. A country as an intervening variable also affects knowledge, attitude, and behaviour. People from a specific country have different kinds of knowledge, attitudes, and behaviour as compared to other countries.

Other variables culture and beliefs are influencing the KAP Model, culture and beliefs affecting attitude and behavior. The difference between the culture and belief system is also indicated by the difference in knowledge, attitude, and behaviour. The people who have specific cultures and beliefs their behavior can be planned through their knowledge and attitude level.

Figure 2

f Square



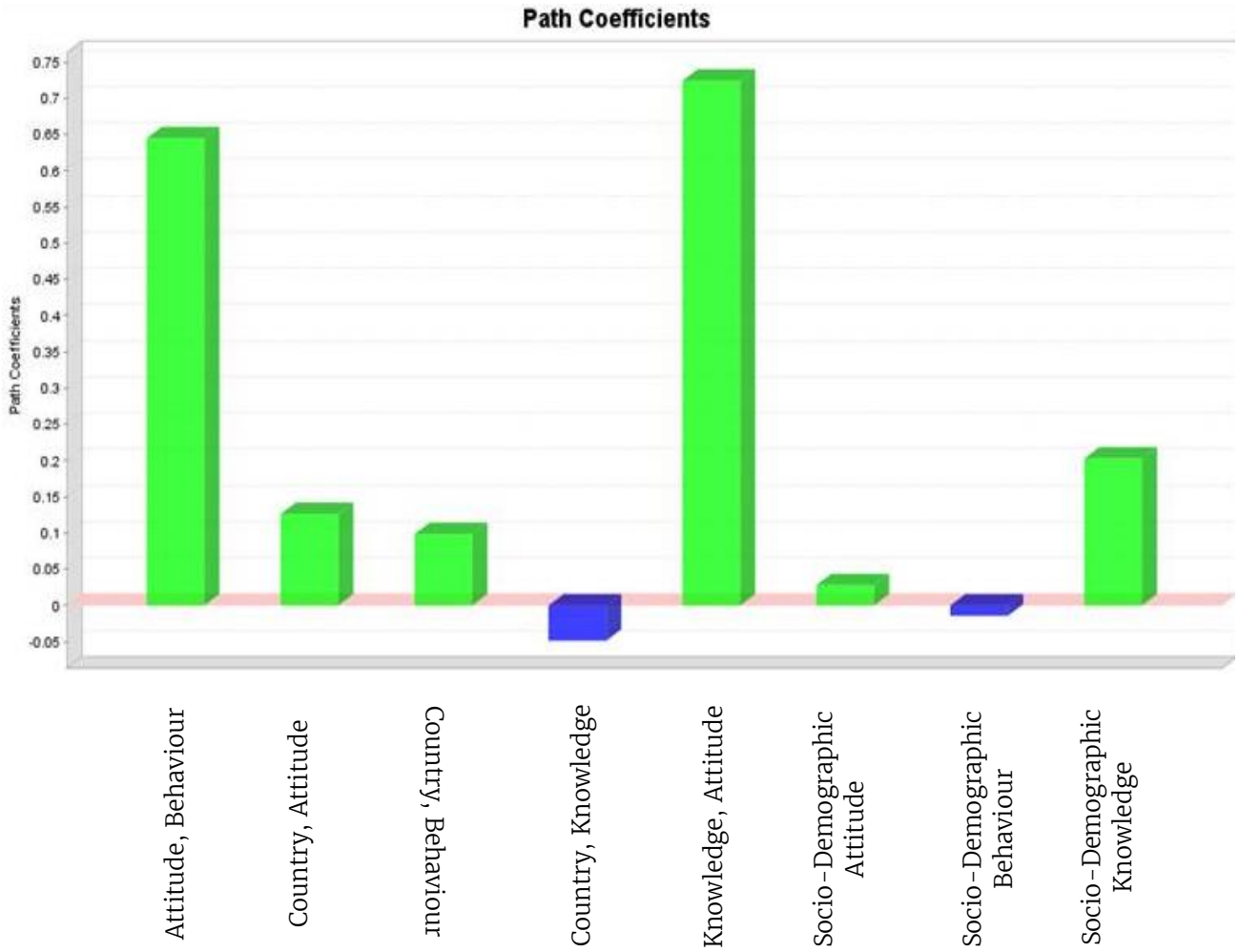
F Square test is related to the significance of the variable with another variable. How much does one variable affect another variable?

As mention in Figure 2, f Square Attitude has significant effects on behaviors and intentions, the statistical significance effect value is .07 which is higher than 0.15. Beliefs and habits have effects on knowledge and information and the value is 0.03 which is higher than 0.15. Culture has effects on beliefs and habits, it has a 0.45 value higher than the required value in this test. Knowledge and information effects attitude as mentioned above in figure 2 f square has a high value of effects which is 1.05 which is higher than 0.15.

Socio-demographic values have the least effect on culture which is 0.05 less than 0.15. Its mean Socio-Demographic values have no significant effects on Culture.

Figure 3

Path Coefficients



Is a systematized regression coefficient which shows the direct effects of independent variables on dependent variables.

According to this test, attitude has significant effects on behaviours, the value is 0.05 which is higher than 0. If the statistical value is less than 0, it will be considered that there are no significant effects among the variables.

The country has significant effects on attitude, the value is more than 0.1. And again the country has effects on behaviour the value is 0.1. While the country has the least effect on knowledge which is below 0, it means there are no such effects of country on knowledge.

Knowledge has significant effects on attitude, the value is 0.7. Socio-demographic values have effects on behavior, the statistical value is 0.05 which is higher than 0. While socio-demographic values have the least effect on behaviour, the value is less than 0, which indicates that no significant effects were found between these variables. The same variable Socio-Demographic values has significant effects on knowledge, the value is 0.2 which is higher than 0.

After conducting these effects size tests, H1 is approved because, in the effects size test, it has been statistically approved that knowledge has significant effects on behaviour. According to the Path Coefficient test knowledge has major effects on attitude.

H2, this hypothesis is also approved through both tests, because knowledge has noteworthy effects on attitude according to both tests, F Square and Path Coefficients.

H3, is also approved because, in the effects test, there are significant effects of information towards the behaviour.

H4. This hypothesis is approved, irrespective of Uses and Gratification OR KAB (Knowledge, Attitude and Behavior) there are highly significant effects of Culture on QR Code scanning behavior found in these tests.

Discussion

The theory of planning behaviours is totally related to the KAB model, according to this theory human behavior can be planned and this model explains that knowledge leads to attitude and attitude leads to favorable or unfavorable behavior. Hence in this theoretically approved research, all hypotheses indicate how knowledge leads towards attitude and behavior. QR codes scanning behaviour depend on the knowledge and information about QR Codes. There is a certain amount of knowledge is required for the development of QR codes scanning bbehaviour Consumers must have more knowledge about QR Codes then their attitude built towards the scanning behaviour.

Positive information about QR Codes also leads towards favourable scanning behaviour. This research explored that if any marketer wants to launch a QR Code-based mobile marketing strategy first they need to know what kind of information and knowledge people have about QR Codes. Decimations of easy knowledge and information about QR codes people is the first step to planning their favourable behaviour towards QR Code scanning.

This is what the KAB model explains human behaviour. The theory of planning behavior is also states that human behavior can be planned and the tool is a certain amount of knowledge about the concerned matter and this knowledge leads towards attitude and then the behavior is built either favourable or unfavourable. Positive behaviour also depends on the kind of knowledge or information is in the human mind, if a piece of positive information or knowledge produced, for example, if the information is disseminated about QR Codes that they are the most secure and easy way to find concerned information then scanning behaviour will be positive.

In Pakistani culture, there is less acceptance of QR Codes due to a lack of knowledge and the unavailability of proper advertisement campaigns. Although QR Codes are gaining popularity in different fields in Pakistan for example in the food business, travelling, banking, newspaper advertisement and online shopping.

As compared to China and Turkey in Pakistan marketers should launch such campaigns comprised of information about the brief introduction of QR codes and scanning methods. When people started to know about QR codes and their benefits they will start using them. In China and Turkey, people already have some knowledge.

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