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SEM Modeling Approach for Studying the Social Impact of Whatsapp Usage

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ABSTRACT

Social Media has made a pioneering impact by promising to deliver innovation, propel cost effective measures for cost saving and enhancing the brand strength through mass cooperation. Whatsapp is one such social innovator in recent times that has garnered immense popularity among youngsters and studies have found it to be more popular than Facebook too. The main objective of this study is to examine the importance of whatsapp as a social innovator among youngsters. The study aims to analyse the drivers of whatsapp usage among these youngsters. Using SEM the social impact of this whatsapp usage is studied and whatsapp usage factors having an influence on social impact are highlighted. This paper has strongly advocated that whatsapp has been a major social innovator among youngsters and through this empirical study it was found that whatsapp usage significantly influences social impact.

Keywords: Social Innovation, social impact, whatsapp, communication

INTRODUCTION

“It has become exceedingly obvious that our technology has exceeded our humanity.” -**Albert Einstein**

Facebook acquired whatsapp with a whopping amount of \$19 billion and at present almost one billion people use this mobile app.¹ Presently whatsapp is the second most widespread and used app next only to Facebook. It has been reported that almost 700 million users send 30 billion messages every day. Fig 1 stats only prove that fact.²

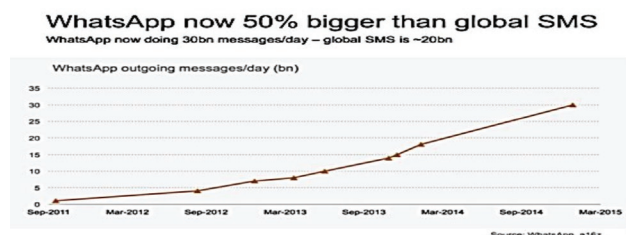


Fig. 1 Growth of Whatsapp messaging

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Technology today has been paving way for innovative and user friendly approach. Whatsapp today has been one such innovation that has been named as one of the most innovative technology for strong social impact. Reports have suggested that every one in seven person today uses whatsapp and the trend has been same globally. Whatsapp has been hugely prevalent for exchanging messages, images, files and videos without having to pay any fees. There are many extremely useful features like voice calling facility which enables users to call through internet. Recently whatsapp has forgone its yearly subscription fees for its users and this has only added to its popularity even more.³

OBJECTIVES

- To study whatsapp's as a social innovator among youngsters.
- To analyze drivers of whatsapp usage for communication
- To find out the social impact of whatsapp usage among youngsters through SEM Modeling

Theoretical Background and Hypothesis Development

Whatsapp- The Social Innovator

Innovation can be defined as a novel idea, an effective product or process or an application that can deliver better solutions according to the market requirements.⁴ Social media is one such innovation that has propelled the communication among the users where they can create, share and interact with other users and exchange messages, files, videos and pictures freely through internet.⁵ Internet and social media has impact people's life and also brought about drastic changes in various aspects of it. Since the emergence of Web 2.0 technology the internet has been more or less driven by user generated content and huge data related to consumer identity. Andreas Kaplan has defined social media as medium that allows users to share, create and interact with like-minded people and exchange the information in virtual communities which are an integral part of these social networks.⁶ Whatsapp too has this feature where in groups can be created and users can interact with their family and friends within the confinement of these groups. Whatsapp's penetration has been huge in very less time and more research needs to be undertaken to actually understand its social impact and influence on interpersonal communication among its users. Majority of these users being young population further studies needs to be done to ascertain the impact it has on social lives of the users.⁷

In one of the studies done at university in South Africa, it was found that whatsapp actually had a very positive feedback as students claimed it to be very useful for communicating and interacting with their friends and family members. It was found that this has helped students in engaging with the teachers and subjects more efficiently as the environment on the whatsapp group is very informal allowing them to make learning a fun experience.⁸ It has been further stated that such interactions helps in bridging the gaps that has been prevailing between knowledge and physical remoteness. Studies have proven that whatsapp has now become more relevant and a necessity for students as this platform has allowed them ease of accessibility, encouraged them to be more cooperative and heightened their motivation levels to be an active participant in academic projects and assignments.⁹ Students can share lectures, discuss information and also interact with the teachers.

Whatsapp Usage

Using whatsapp is very easy, user has to just enter the number of the device and the app starts working. It

also shows the list of contacts in the mobile currently using this application and to whom u can connect. Existing users can be invited for sending messages. Whatsapp was developed by Acton and Jan Koum in 2009 as their college project for communicating and distributing the multimedia messages at a faster pace and easy to use. That is one sole reason for whatsapp being so popular among youth. Apart from sharing the pictures and videos one can also create groups, update status and display pictures.

In order to test the model fit two hypotheses are framed. Null hypothesis suggests that model is a good fit and alternate suggests that it is not. Study has proposed that if the probability of association with chi square is high then the hypothesized model that is closer is best fit.

Drivers of Whatsapp Usage

A survey conducted by TCS in 2012-2013 that covers 17500 high school students spanning 14 indian cities has revealed that almost 70% of students have a smartphone and they access mostly these social networking sites to keep in touch with their friends and they build virtual communities on these platforms very frequently. They have now started utilising the true potential of the smartphone they own. Another article published in The Indian Express on Feb 21, 2014 has highlighted the facebook acquiring whatsapp for a huge amount.¹⁰ It was stated that since cheaper smartphones are available in Indian market and also the data plans are very affordable hence younger population is soon to follow this trend of adapting this technology. The acquisition is more like a future investment more so for a country like India which boasts of being a young nation. It was found that the limitations posed by microblogging sites and students being unfamiliar with these site too may add to them not using it more often, further propelling whatsapp usage (Gao, Luo & Zhang, 2012; Leitch & Warren, 2011).¹¹

Social Impact through Whatsapp Usage

Social impact is the phenomena that happens when people's emotions, opinions and behavior is impacted by others. Studies have shown that social impact can be seen to occur in various ways such as conformity, socialization, peer-pressure, obedience, leadership, persuasion, sales and marketing. Herbert Kelman has identified three classification of social impact such as Compliance, Identification and Internalization.¹² Compliance is said to occur when people agree with opinion of others but also express their disobedience in private.

Identification is the attribute that occurs when people can relate or get influenced by someone they admire or like. Internalization occurs when people accept the belief of others and are open about their acceptance of the belief. Whatsapp has impacted all these areas to a great extent and hence we can conclude that whatsapp usage is driving the social change and impacting the lives of youngsters. Due to increase in the penetration of smartphones whatsapp has found larger customer base and according to the reports it is observed that by the year 2016 there are 220 million smartphone users in India. India is hence becoming the largest market with 100 million active users. Users prefer whatsapp over other social networking applications and they have made whatsapp conversation as a preferred platform for personal conversation.

METHODOLOGY

Data Collection and sample

Data were collected from youngsters of Chennai region who are users of whatsapp and totally 201 respondents have answered the online questionnaire. The perception of whatsapp users was measured with a self – administered questionnaire.

Data Analysis

Collected data was analysed with the help of software package AMOS 20, Structural Equation Modeling (SEM) was used for data analysis.

RESULT

Demographic Profile of the Respondents:

Out of 201 youngsters from Chennai city, 42% were males and 58% were female. Almost 70% population was in the age group of 19-28 years. 20% of the population was in the range of 29-38 years of age. With respect to educational background 40% of

the respondents were bachelor degree holder, 40% were professionals, 10% were PhD’s and 10% were from high school.

Measurement Model

Reflective measurements were used to indicate the changes in the latent constructs.¹³ Established scales were used from the literature and adapted to suit to the study. Reliability and validity of the reflective measurement was assessed using Cronbach’s alpha and Confirmatory Factor Analysis (CFA). The constructs used in the study show a high value of Chronbach’s alpha, ranging from 0.86 to 0.91. Average variance extracted (AVE) and Composite reliability was assessed for all the constructs. All the values of the construct are greater than 0.65 for AVE exceeding the acceptable value of 0.50.¹⁴ Our scale properties and the corresponding reliability and validity values are provided in Table I.

Null Hypothesis - Hypothesised model is a good fit.

Alternate Hypothesis - Hypothesized model is not a good fit.

The GFI of this study was 0.994 more than the recommended value of 0.90 the other measures too fitted satisfactorily; AGFI=0.942, CFI=0.998, TLI=0.984, IFI=0.998 and NFI=0.993 with $\chi^2/df < 5$ at 1.487 and RMSEA=0.049 indicate a good absolute fit of the model. The model is considered fit if the Goodness of Fit indices support the structural model. Goodness of fit indices support the model fit and these emphasized indices indicate the acceptability of this structural model. Fig 1 shows the theoretical model and hypothesis stated for the study.

To check for the goodness of fit the fit indices were analysed and the fit model was achieved. Hence the null hypothesis was accepted as p value was more than 0.05 for the model under consideration.

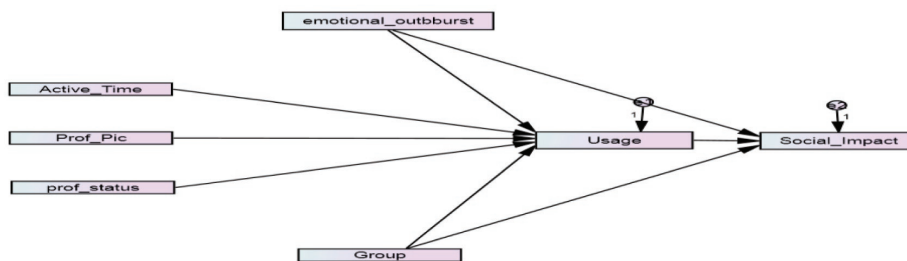


Fig.2 Theoretical Model

On the basis of collected samples structural equation model was developed to analyse the feasibility of the model. As per the recommendation given by Gerbing the measurement model was analysed for testing the reliability and validity of the survey instrument. The software used is SPSS- AMOS Version 20.¹⁵ As highlighted by Peter structural equation modeling is suitable for evaluating the causal relationship between the identified variables. The model can also be used for checking the harmony of the used model.¹⁶

Structural equation modeling assesses whether the data will be fitting in a theoretical model. In order to analyze the model, stress was given to Chi-square/

degrees of freedom (x2/df), CFI, GFI, AGFI, TLI, IFI, RMSEA and PGFI. Common model-fit measures like chi-square/degree of freedom (x2/df), the comparative fit index (CFI), root mean square error of approximation (RMSEA), the normed fit index (NFI), incremental fit index (IFI), and the Tucker Lewis index (TLI) were used to evaluate the measurement model fit. Gerbing and Anderson have studies and stated that the criteria for satisfactory model are as follows: RMSEA of 0.08 or lower; CFI of 0.90 or higher; and NFI of 0.90 or higher. Hu and Bentler have suggested that the fit between the data and the proposed measurement model can be tested with a chi-square goodness-to-fit (GFI) test where the probability is greater than or equal to 0.9 specifies a good fit.^{17,18}

Table-1 Standardized Structural Coefficients

Hypothesis		Standardized structural Coefficient	P	Acceptance or rejection
Active_Time	Whatsapp Usage	0.527	.006	H2 Accepted
Prof_Pic	Whatsapp Usage	0.513	.001	H3 Accepted
prof_status	Whatsapp Usage	-0.203	.184	H4 Rejected
emotional_outburst	Whatsapp Usage	0.629	***	H1 Accepted
Group	Whatsapp Usage	1.130	***	H5 Accepted
Usage	Social_Impact	0.301	***	H7 Accepted
Group	Social_Impact	0.713	***	H6 Accepted
emotional_outburst	Social_Impact	0.139	.273	H8 Rejected

RESULTS AND IMPLICATIONS

Main Effects

Table 1 depicts the standardized structural coefficient. Active time, profile picture, emotional outburst and group exerts significantly positive influence on whatsapp usage. The Hypothesis H1,H2,H3 and H5 are supported. However profile status has no significant effect on whatsapp usage. Therefore H4 is not supported. Consistent with the whatsapp usage whatsapp usage and Group had positive influence on social impact leading to acceptance of H7 and H6. Whereas H8 was not supported that showed non- significant influence of emotional outburst on social impact.

DISCUSSION AND CONCLUSION

The objective of this research was to analyse whatsapp as a social innovator and find out the attributes of this platform that drives its popularity among youngsters. Also one can send unlimited messages, photos, videos, files etc with an internet connection instantly. It was also found that its quite easy to use and old messages can be easily stored. The very important

feature associated with whatsapp is its feature to form private groups and interact with their friends and family members. There is no geographic constrained and we cannot connect with anybody across the globe freely. The SEM model was developed that showed a good fit confirming the whatsapp’s impact on social lives. Whatsapp usage was positively impacted by Active time, profile pic, emotional outbursts and groups. That states how the penetration of whatsapp has made alterations in the people’s lives.

There were few side effects too which were highlighted. Profile pictures can easily be downloaded by anyone and used for dubious purposes. Whatsapp consumes a lot of space in mobile which can lead the phone to hang. Contacts can be easily visible to others in the group and that can also be misused. Since there are no restrictions on length of the message that can be sent via messages lengthy messages can be sent which is very annoying at times. Excess whatsapp usage leads to students not being able to concentrate in class. Due to constant engagement with whatsapp there is very less interaction with family members at home too. From the above discussion it is clear that whatsapp has

become an integral part of lives of youngsters making communication a lot easy and fast.

CONCLUSION

This study is to examine the importance of whatsapp as a social innovator among youngsters. The study aims to analyse the drivers of whatsapp usage among these youngsters. Using SEM the social impact of this whatsapp usage is studied and whatsapp usage factors having an influence on social impact are highlighted. This paper has strongly advocated that whatsapp has been a major social innovator among youngsters and through this empirical study it was found that whatsapp usage significantly influences social impact.

Ethical Clearance- Not Required

Source of Funding- Self

Conflict of Interest - Nil

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