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FACTORS AFFECTING INTENTION TO USE SMARTPHONE AMONG YOUNGSTERS IN INDIA

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Abstract

The aim of this study is to explore the intention of youngsters towards Smartphone. The study aimed at determining predictors brand features, brand name, social influence, product sacrifice, compatibility, dependency and measures their influence on intention to use Smartphone. Despite the usage of smartphone, limited studies have included youngsters' influential factors towards intention to use smartphone. Primary data was collected with structured questionnaire using stratified technique. A total of 418 samples were collected from select Universities of North India. This data has been analysed through structural equation modelling. The findings revealed that there is a significant influence of product features, brand name, product sacrifice and compatibility with intention to use Smartphone among youngsters. The findings of this study are limited by the number of respondents, factors and location. This research is relevant for owners and marketers to diagnose the youngster's choice for specific Smartphone.

抽象的

本研究旨在探讨青少年对智能手机的使用意愿。该研究旨在确定品牌特征、品牌名称、社会影响、产品牺牲、兼容性、依赖性的预测因素，并衡量它们对智能手机使用意愿的影响。尽管使用智能手机，但有限的研究纳入了青少年使用智能手机的影响因素。主要数据是使用分层技术通过结构化问卷收集的。从北印度的选定大学收集了总共 418 个样本。这些数据已经通过结构方程模型进行了分析。调查结果显示，产品功能、品牌名称、产品牺牲和兼容性对年轻人使用智能手机的意愿有显著影响。本研究的结果受到受访者数量、因素和地点的限制。这项研究与所有者和营销人员有关，以诊断年轻人对特定智能手机的选择。

Chōuxiàng de

Introduction

A smart phone is a device which is designed to communicate and to convey voice between two

individual users, allow sending text messages and executing common function (Weinberg, 2012). Additionally, a smartphone perform many

functions like a computer (Gartner, 2011). It can be used for photos, videos, internet, mails, web browsing and many more. It also consists of an operating system which is capable of running downloaded app/ running software application. Nowadays we know smartphones as one of the media to communicate and have become an important element in every aspect of human activity. All the convenience that is offered from smartphone was supported to make life easier.

With the increase in speed of technological advancement, smartphones are now becoming the essential part of our daily lives (Kshetri and Cheung, 2002). Due to massive market and specific choices, Smartphone companies are in neck-to-neck competition for meeting the requirements of the buyers. Furthermore, there are several handset manufacturers in the Indian market consists of national and International players like Nokia, Micromax, Samsung, I-phone, Blackberry, Xiaomi, Oppo, Vivo and other Chinese brands. These brands have similar price range in order to focus youngsters' perception on a similar product line. Besides this, youngsters have their own preferences to use smartphone which are depending on certain parameters such as brand name, price and quality (Leo et al., 2005). Hence, it is pertinent to identify significant determinants influencing intention to use smartphones and measure the effect of identified attributes on the youngsters' intention to use Smartphones. It will facilitate strategy makers in facing stiff competition from other smartphone brands.

Literature Review

Previous studies attempt to study youngster motivations toward smartphones in different contexts (Bonnema and Waldt, 2008; Yunshan, 2019). Literature suggests two characteristics which influence intention to use smartphone,

first youngsters' demographic profiles and second Smartphone attributes (Yunshan, 2019; Hasan, A. and Gupta, S.K. 2020).

The adoption of smartphone has been tremendous in mainstream consumer markets all over the world due to the demographic characteristics of youngsters (Bonnema and Waldt, 2008). Moreover, intrinsic and extrinsic motivations also influence youngsters' choice to select smartphone (Leonid Miakotko, 2008; Hasan, A. and Gupta, S.K. 2020). Researchers also revealed that youth generations are more involved in high technology gaming and the social media platforms and so on (Ding et al., (2011) Suki and Suki, (2013). Macro (2004) explained that smartphone has changed the life of people especially our teenagers and youth after privatization of Indian telecom sector as more and more youngsters are using smartphone due to the features and easy to use.

Earlier studies showed that smartphone attributes such as brand, convenience, dependency and price are significant factors among youngsters (Liew, 2012; Chew, 2012). Researchers investigated the effects of predictors like convenience and social influences on university student's dependency towards smartphones in Malaysia. It revealed that social needs and social influence were the highest factors followed by convenience (Ting, Lim, Patanmacia, Low,2011). While Lee et al., (2011) conducted study in United States and found that corporate image, price, product quality, product innovation, and customer loyalty were the key determinants. Muhammad Sarwar & Tariq Rahim Soomro (2013) revealed that smartphone users' intention to use specific brands primarily depends on brand and society.

Hypotheses Development

In this conceptual framework, attributes of smartphone were included like product features, brand name, social influence, product sacrifice, compatibility and dependency towards intention to use. The study constructs are discussed below.

a. Product Features and Intention to Use

Product features are consisting of attributes in a product which satisfy users' demand and encourage users for the intention to use (Kotler & Armstrong, 2007; Hasan, A. and Gupta, S.K., 2020). Companies are launching smartphones with several features with regard to users' need and desires which consists of various features such as like software application, Wi-Fi, multimedia, storage facility, wide display and many more (Oulasvirta et al., 2011). Ting et al., 2011 and other researchers suggested that ease of use and other functionality influence adoption behaviour of smartphone among users. Previous researches indicates five most preferred features in the smartphones are camera, screen, voice activated dialling, internet browsing and wireless connectivity (Ling et al., 2006). Smart phone is convenient to use due to advanced features like video, picture, texts and other multimedia functions. On the other hand, hardware (size, weight, color, design); software (programming) and operating platform (Android, Windows, Blackberry) also plays an important role in the intention to use smartphones. Here on the basis of above discussion researchers hypothesizing that

H1: Product features positively influence intention to use among smartphone users

b. Brand Name

Brand could be a uniqueness, exclusivity and competitive advantage of an organisation and it is more than symbol, images and words (Kumaravel and Kandasamy, 2012; Bogan, Stephanie, 2007; Hasan, A., 2018). Brand awareness, brand features and brand quality influences decision making process of user (Cornelis, 2010). Hence Smartphone players need to differentiate themselves from others and brand name help them out. Users want uniqueness and exclusive features like screen, backup etc. (Norazah, 2013; Smith, 2015). Hence, specific brands like Samsung, Oppo, Vivo, Apple HTC are mostly preferred. Earlier researchers revealed that Apple is highly preferred due to its exclusivity in terms of variety in colors, versions, storage space and wide price range than other smartphones. Earlier researchers revealed that brand name influence users' buying decision making process towards smart phone (Khasawneh, (2010; Krumpal, 2013; Norazah, 2013; Hasan, A. and Gupta, S.K., 2020). Here on the basis of above discussion researchers hypothesizing that

H2: Brand name positively influence intention to use smartphone among users

c. Social Influence

Social influence is all about changing individual's attitude and perception after interaction with family member, friends, relatives etc. (June and Stacy, 2004). It has been revealed that person's action is being stimulated by society and surrounding peoples' action (Rashotte, 2007; Kotler and Armstrong, 2007; Hasan, A., 2018). Surrounding peoples opinion and assistance also play an influencing role in the decision making process (Ting, Lim, Patanmacia, Low, Ker, 2011; Shih and Fang, 2004; Wang and Shih, 2009). Decision to buy

smartphones are also influenced by society elements like parents, peers etc. (Nelson & McLeod, 2005). Besides this, comments and reviews of smartphones from social media platform like Facebook, twitter, Instagram etc. also affect individuals' choice as individual always looks for guidance and assistance of existed or potential users (Ting et al. 2011). Earlier studies identified that society influences the user to buy specific smartphone (Mohd Azam Osman et al., 2012). Suki (2013) supported the studies that youngster's decision to buy smart phone highly affected by the adjacent people as they want opinions from the peers about their smartphone experience. Earlier research conducted by Chow, Chen, Yeow and Wong, (2012); Ting et al., (2011); Junco, (2012); Junco & Cotten, (2012) revealed that students demand of smartphones significantly affected by the peer and family members followed by media. Here on the basis of above discussion researchers hypothesizing that

H3: Social influence positively influence intention to use smartphone among users

d. Product Sacrifice

People are interested to buy a product after comparison with other types of products in terms of budget, performance, benefits and price. People always sacrifice certain benefits whenever they buy any other preferable items. Dropping one product due to choosing another one due to monetary or non-monetary benefit is called product sacrifice (Zeithmal, 1996; Sok, 2005). Earlier researches also showed that product sacrifice plays an important role while purchasing smartphone (Sok, 2005; Chow, Chen, Yeow and Wong, 2012). Here on the basis of above discussion researchers hypothesizing that

H4: Product sacrifice positively influences intention to use smartphone among users.

e. Convenience Concern/ Compatibility

Compatibility is all about easiness of using a product or device and completes the task without any hassle (Ranson, 2009). If an individual is not facing any discomfort/ difficulty in using smartphone at any time it means device is compatible to user (Ding et al., 2011). Nowadays Smartphone performs all the task as with the device we can access internet and perform all the task. Earlier studies shows that Smart phones are being used in all the fields like medical, engineering, civil etc. due to easy access of internet and compatibility (Liew, 2012; Payne et al., 2012; Ding et al., 2011; and Suki & Suki 2013). Here on the basis of above discussion researchers hypothesizing that

H5: Compatibility positively influences intention to use smartphone among users.

f. Dependency

Dependency refers when it becomes tough to complete the task without assistance of something such as when people are continuously using smartphone and depending on it for the completion of task (Lisa, 2011). Nowadays people are using online platforms and access the resources via smartphones and tablets rather than human due to engaged in online education; E-learning; job searching, videos and many more activities (Gibson, 2011). Due to this dependency so many problems arise like family disputes, youngsters social and communication skills (Lim, 2013). Earlier studies also show that there is a high dependency of users on smartphone

intentions to use specifically among students (Suki and Suki, 2013). Here on the basis of above discussion researchers hypothesizing that

H6: Dependency positively influences intention to use smartphone among users.

Research Gap

It has been revealed from the earlier studies that smartphones are preferred to use based on certain attributes but still there is a lack of clarity about which particular attribute influence significantly among users (Mohd Azam Osman et al., 2012). Although numerous methods have been adopted earlier, still inclusions of these six predictors were missing in the existed work which leads towards intention to use Smartphones.

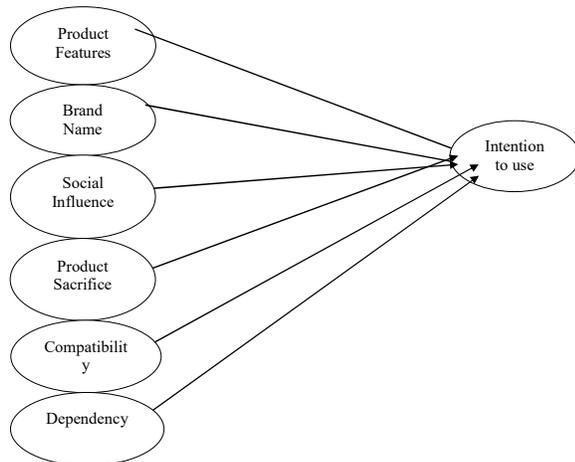


Figure 1: Proposed Research Framework

Research Methodology

This study used a combination of both approaches viz. inductive and deductive. Firstly, researchers identified six attribute-based dimensions with regard to smartphone choices. Items were generated through focus group discussions from youngsters and suggestions from field experts. Secondly, these dimensions were verified through EFA and evaluated psychometric properties of the scale through CFA.

Youngsters from select Universities of North India were chosen as sample from the population i.e. all smartphone users. Out of 450 distributed questionnaires 418 responses were complete in all aspects. Stratified sampling was used to collect primary data and it was collected through two modes (a) physical distribution; (b) online distribution while secondary data was collected through available database. Undisguised structured questionnaire of five-point Likert scale was used as per the objectives of the research. Survey questionnaire was finalized after pilot study. Questionnaire section A consists of five-point Likert-scale on attributes and brand preference and Section B was all about demographic profile of respondents.

Results and Analysis

1. Preliminary Analysis through Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) has been used for independent items due to self-designed structured instrument, these items adopted from earlier scales and expert inputs. KMO Bartlett's test of sphericity score were 0.855 and 0.00 respectively which are acceptable (Hair et al., 2010). Items loadings above 0.6 have been retained (Hair et al., 2010). Researchers used principal component analysis (PCA) as an extraction method for EFA to reduce the factors and used maximum variance through varimax rotation.

Cumulative per cent of the variances (74.842) was explained by six factors which have been supported by Eigen value. Six factors represents 23 items have been revealed after iterative process (refer table 1). Although, Exploratory Factor Analysis (EFA) has not been used on dependent factor (intention to use) due to established measure. Factors have been named

after consultation with experts and literature support. EFA output depicts in table 1.

Table 1: Exploratory Factor Analysis

| Factors | Predictors (23) | Label | Rotated loadings | Eigen value | Variance extracted % |
|------------------------------------|-----------------|-------|------------------|-------------|----------------------|
| Product Features (Factor 1) | 5 | Q2.6 | 0.826 | 7.506 | 32.636 |
| | | Q2.7 | 0.795 | | |
| | | Q2.8 | 0.801 | | |
| | | Q2.9 | 0.832 | | |
| | | Q2.10 | 0.765 | | |
| Brand Name (Factor 2) | 4 | Q2.11 | 0.825 | 2.659 | 11.561 |
| | | Q2.12 | 0.837 | | |
| | | Q2.14 | 0.843 | | |
| | | Q2.15 | 0.922 | | |
| Social Influence (Factor 3) | 4 | Q2.19 | 0.881 | 2.126 | 9.243 |
| | | Q2.21 | 0.781 | | |
| | | Q2.22 | 0.858 | | |
| | | Q2.23 | 0.637 | | |
| Product Sacrifice | 4 | Q2.1 | 0.751 | 1.869 | 8.128 |
| | | Q2.2 | 0.756 | | |

| | | | | | |
|--------------------------------------|---|-------|-------|-------|-----------------|
| (Factor 4) | | Q2.3 | 0.756 | | |
| | | Q2.4 | 0.780 | | |
| Compatibility (Factor 5) | 3 | Q2.24 | 0.909 | 1.683 | 7.315 |
| | | Q2.26 | 0.784 | | |
| | | Q2.27 | 0.906 | | |
| Dependency (Factor 6) | 3 | Q2.16 | 0.814 | 1.371 | 5.959 |
| | | Q2.17 | 0.867 | | |
| | | Q2.18 | 0.850 | | |
| Cumulative variance (Rotated) | | | | | 74.842 % |

Source: Authors' own data (Loadings retained more than 0.6)

Note: Researchers used PCA using varimax rotation at $p < 0.05$

2. Confirmatory Factor Analysis (CFA)

CFA helps in validation for the measurement model of latent factors. CFA fit indices are (Chi-square/df-1.624, $p < 0.00$, GFI- 0.918, AGFI- 0.898, CFI-0.974, NFI-0.937, RMSEA-0.036, RMR-0.039). During CFA, two items (Q2.23 and Q3.7) were eliminated from analysis due to low and cross loadings (Hair et al. 2010). Standardised regression weights (SRWs) of items are statistically significant (refer figure 2).

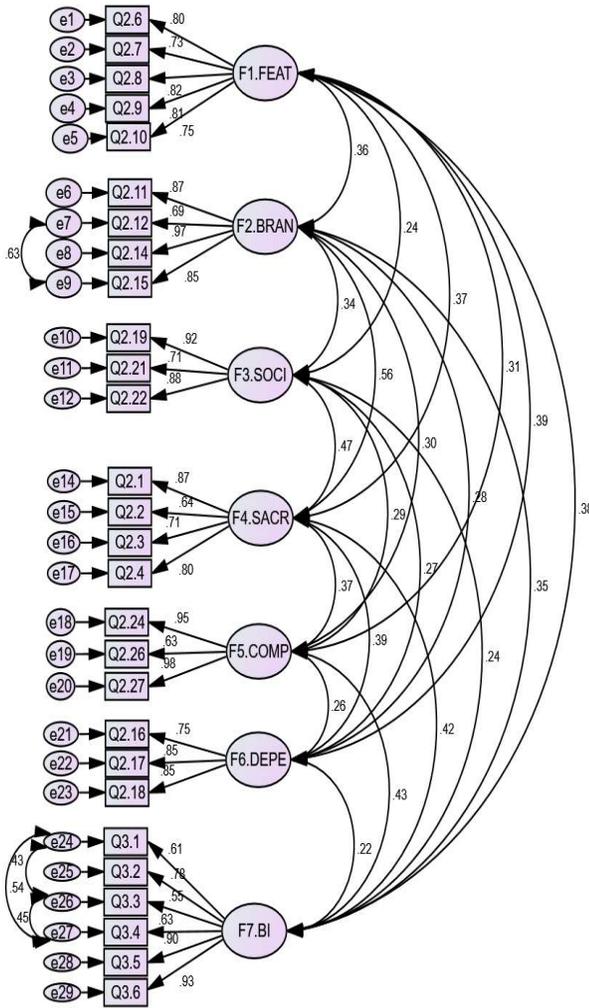


Figure 2: Measurement Model
 Source: Author’s own data

KEY: Q2.1 to Q2.27 and Q3.1 to Q3.6 are the manifest variables, Factor1—Factor6 and ‘F7-intentions to use’ are the latent factors. Scale, e1-e29 are the error terms.

Cronbach's alpha scores are more than 0.70 (refer table 2) which is accepted value (Hair et, al., 2010). Convergent validity has been established as all the factors were greater than 0.7 (refer table 2). Table 3 depicts results of Discriminant validity and it is also established due to average

variance extracted (AVE) was more than 0.5 and maximum shared variance values were below to AVE. Discriminant validity result are depicted in Table 3. Multi-collinearity issue was checked as all the factors had a correlation less than or equal to 0.70 (Hair et al., 2010).

Table 2: Composite reliability (CR) and Average Variance Extracted (AVE)

| Constr ucts | Cronb ach’s Alpha | Facto rs Load ings | Avera ge Varia nce Extra ction | Comp osite Reliab ility |
|-------------------------|-------------------|--------------------|--------------------------------|-------------------------|
| Product Features | 0.887 | 0.73-0.82 | 0.561 | 0.933 |
| Brand Name | 0.924 | 0.69-0.97 | 0.666 | 0.948 |
| Social Influen ce | 0.871 | 0.71-0.92 | 0.755 | 0.929 |
| Product Sacrific e | 0.843 | 0.71-0.87 | 0.612 | 0.902 |
| Compat ibility | 0.876 | 0.63-0.95 | 0.712 | 0.937 |
| Depend ency | 0.855 | 0.75-0.85 | 0.576 | 0.915 |
| Behavio ral Intentio ns | 0.902 | 0.55-0.93 | 0.967 | 0.924 |

Source: Author’s own data

Table 3: Correlations and Discriminant Validity

| Cons truct s | FE A T | BR A N | S O C I | SA C R | CO M P | D E P E | BI |
|--------------|--------|--------|---------|--------|--------|---------|----|
| FE A T | | | | | | | |
| BR A N | | | | | | | |
| S O C I | | | | | | | |
| SA C R | | | | | | | |
| CO M P | | | | | | | |
| D E P E | | | | | | | |
| BI | | | | | | | |

| | | | | | | | |
|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| FEAT | 0.612 | | | | | | |
| BRAN | 0.361 | 0.767 | | | | | |
| SOCI | 0.239 | 0.337 | 0.712 | | | | |
| SACR | 0.372 | 0.424 | 0.471 | 0.576 | | | |
| COMP | 0.312 | 0.426 | 0.287 | 0.370 | 0.755 | | |
| DEPE | 0.389 | 0.222 | 0.266 | 0.389 | 0.255 | 0.666 | |
| BI | 0.376 | 0.352 | 0.236 | 0.424 | 0.426 | 0.222 | 0.561 |

Source: Author’s own data. AVE- Diagonal values; MSV- Off diagonal values (it should be less than AVE).

3. Structural Model

After the measurement model validity and reliability, structural model revealed a good fit model ($\chi^2 = 20847$, $p < .001$, GFI = .831, NFI = .884, CFI = .921 and RMSEA = .128). All standardised regression weights (SRWs) are in the accepted range (refer figure 3). Out of six hypotheses, four hypotheses i.e. product features (H1), brand name (H2), product sacrifice (H4), compatibility (H5) are supported. While social influence with behavioral intentions (H3) was not supported. Dependency on smartphone (H6) also has a negative impact on intention to use smartphone.

Compatibility with smartphone (β -0.260) has a strong impact on intention to use, followed by product features (β -0.241). Other drivers brand

name (β -0.11) and product sacrifice (β -0.22) also have positive influence towards intentions to use Smartphone (refer table 4). Table 4 indicates hypotheses results.

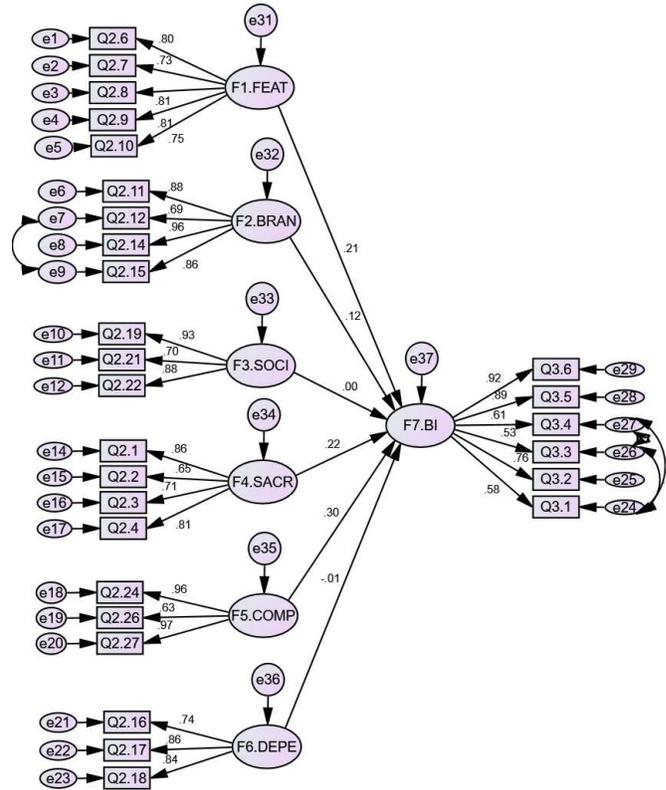


Figure 3: Structural Model
Source: Author’s own data

Table 4: Structural Analysis Results

| Items | Standard Coefficients | S.E | C.R. | Hypotheses Results (p value) |
|--|-----------------------|-------|-------|-----------------------------------|
| Product Features – > Intentions to use | 0.241 | 0.059 | 4.075 | H ₁ : supported (0.00) |

| | | | | |
|---------------------------------------|--------|-------|--------|---------------------------------------|
| Brand Name → Intentions to use | 0.118 | 0.046 | 2.575 | H ₂ : supported (0.01) |
| Social Influence → Intentions to use | 0.000 | 0.045 | 0.005 | H ₃ : not supported (0.95) |
| Product Sacrifice → Intentions to use | 0.226 | 0.053 | 4.282 | H ₄ : supported (0.00) |
| Compatibility → Intentions to use | 0.260 | 0.041 | 6.283 | H ₅ : supported (0.00) |
| Dependency → Intentions to use | -0.015 | 0.059 | -0.252 | H ₆ : not supported (0.80) |

Source: Author's own data

Conclusion and Suggestion

Researchers examined the elements prompting the intentions towards Smartphone among youngsters of India. Moreover, it has also evaluated the effect of identified predictors influence on behavioral intention to use smartphone. Six hypotheses have been framed to test their influence on intention towards smartphone. Out of six hypotheses, product features (H1), brand name (H2), product sacrifice (H4) and compatibility (H5) have been supported while other two social influence (H3) and dependency (H6) were not supported.

Product features (H1) and Brand name (H2) have positively associated with intention to use smartphone (refer table 4). Findings of the study

are consistent with previous studies although association is not very strong (Ling et al., 2006; Lay-Yee et al., 2013). Furthermore, it has been revealed that there is an insignificant influence of social influence on intentions to use smartphone. Hence (H3) is rejected. Findings are contradicted with earlier research (Ting et al. 2011; Mohd Azam, 2012; Suki & Suki, 2013; Lay-Yee et al., 2013; Ibrahim et al. 2013). Product sacrifice (H4) and Compatibility (H5) also revealed significant effect on intention to use Smartphone. According to Sok (2005) product sacrifice positively related to intention to use smartphone. Contrary to expectations, Dependency (H6) is insignificant with intentions toward smartphone, results also supported by earlier findings (Ding et al., 2011; Suki and Suki, 2013). It has numerous implications for strategy makers as it assists us to understand the importance of product features, brand name, product sacrifice and dependency intention towards smartphone among youngsters.

Limitation and Future Scope

Firstly, this study is based on cross-sectional research design; further research may be based on longitudinal design. Second, sample was collected from youngsters of select Universities which might not be able to generalize the result to all youngsters. Thus, study is needed to have youngsters across universities from different part of India. Third, present study has included six factors to determine the intentions to use Smartphone; further studies should be carried out with few additional associated factors related to intention to use Smartphone. Fourth, study has considered only the youngsters' perception and avoids merchants and other involved party further studies should be on merchants' views towards smartphone adoption.

References

- Bogan, S. (2007). The Land of Brand: A good brand is hard to create. understanding what it is and how it works will help you polish your own image in the marketplace. *Business And Economics--Banking And Finance* , 73-74.
- Bonnema, J., Waldt, V.D. (2008). Information and source preferences of a student market in higher education. *International Journal of Educational Management* 22(4):314-327.
- Chew, J.Q. (2012). Exploring the factors affecting purchase intention of smartphone: A study of young adults in UTAR, Unpublished Degree Paper.UniversitiTunku Abdul Rahman, Perak Campus, Malaysia (Doctoral dissertation, UTAR).
- Chow M. M., Chen L. H. & Wong P. W. (2012). Conceptual Paper: Factors Affecting the Demand of Smartphone among Young Adult. *International Journal on Social Science Economics and Art* , 2 (2), 44-49.
- Cornelis, P. (2010). Effect of co-branding in the theme park industry: a preliminary study. *International Journal and Contemporary Hospitality Management*, 22(6), 775-796.
- Cotte, J., & Wood, S. L. (2004). Families and innovative consumer behavior: A triadic analysis of sibling and parental influence. *Journal of consumer research*, 31(1), 78-86.
- Ding, F., Xia, F., Zhang, W., Zhao, X., & Ma, C. (2011, October). Monitoring energy consumption of smartphones. In 2011 International Conference on Internet of Things and 4th International Conference on Cyber, Physical and Social Computing (610-613). IEEE.
- Gartner. (2011). Gartner Highlights Key Predictions for IT Organizations and Users in 2010 and Beyond [Online]. Available: <http://www.gartner.com/it/page.jsp?id=1278413>
- Gibson, E. (2011). Smartphone dependency: A growing obsession with gadgets. *USA Today*.
- Hasan, A. (2018). Impact of store and product attributes on purchase intentions: An analytical study of apparel shoppers in Indian organized retail stores. *Vision*, 22(1), 32-49.
- Hasan, A., & Gupta, S. K. (2020). Exploring tourists' behavioural intentions towards use of select mobile wallets for digital payments. *Paradigm*, 24(2), 177-194.
- Ibrahim, I. I., Subari, K. A., Kassim, K. M., & Mohamood, S. K. B. (2013). Antecedent stirring purchase intention of Smartphone among adolescents in Perlis. *International Journal of Academic Research in Business and Social Sciences*, 3(12), 84.
- Junco, R. (2012). In-class multitasking and academic performance. *Computers in Human Behavior*, 28(6), 2236-2243.
- Junco, R. & Cotton (2012) **Not A 4 U: The relationship between multitasking and academic performance** *Computers & Education*, (59), 505-514
- Khasawneh, K., & Hasouneh, A. B. I. (2010). The effect of familiar brand names on consumer behaviour: A Jordanian Perspective. *International Research Journal of Finance Economics*, 43(1), 34-57.
- Kotler, P. (2010). *Principles of marketing: a South Asian perspective*, 13/E. Pearson Education India.
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a

- literature review. *Quality & Quantity*, 47(4), 2025-2047.
- Kshetri, N., & Cheung, M. K. (2002). What factors are driving China's mobile diffusion?. *Electronic Markets*, 12(1), 22-26.
 - Kumaravel, V., & Kandasarny, C. (2012). To What Extent the Brand Image Influence Consumers' Purchase Decision On Durable Products. *Romanian Journal of Marketing*, (1).
 - Lay-Yee, K. L., Kok-Siew, H., & Yin-Fah, B. C. (2013). Factors affecting smartphone purchase decision among Malaysian generation Y. *International Journal of Asian Social Science*, 3(12), 2426-2440.
 - Lee, J., Cho, B., Kim, Y., & Noh, J. (2015). Smartphone addiction in university students and its implication for learning. In *Emerging issues in smart learning* (pp. 297-305). Springer, Berlin, Heidelberg.
 - Leo, C., Bennett, R., & Hartel, C. E. (2005). Cross-Cultural Differences in Consumer Decision-Making Styles. *Cross Cultural Management*, 12(3), 32-61.
 - Liew, T. S. (2012). Smartphone dependency and impact on consumer purchase behavior of people in Kota Kinabalu (Doctoral dissertation, Universiti Malaysia Sabah).
 - Lim, Y., Wong, P. M., Zolkepli, F., & Rashvinjeet, S. (2013). Marital issues among problems caused by smartphone addiction.
 - Lisa, J. A. (2011). Nielsen: Malaysians spend 20 hours online per week.
 - Macro. (2004). A Study of Mobile Phone Usage Among Teenagers and Youth In Mumbai. Market Analysis and Consumer Research Organisation.
 - Miakotko, L. (2017). The impact of smartphones and mobile devices on human health and life. New York University.[Internet].
 - Nelson, M. R., & McLeod, L. E. (2005). Adolescent brand consciousness and product placements: awareness, liking and perceived effects on self and others. *International Journal of consumer studies*, 29(6), 515-528
 - Osman, M. A., Talib, A. Z., Sanusi, Z. A., Shiang-Yen, T., & Alwi, A. S. (2012). A Study of the Trend of Smartphone and its Usage Behavior in Malaysia. *International Journal on New Computer Architectures and Their Applications*, 2(1), 274-285.
 - Ransom, D. (2009). Smartphone apps fuel business. *The Wall Street Journal*, 20.
 - Rashotte, L. (2007). Social influence. *The Blackwell encyclopedia of sociology*.
 - Sarwar, M., & Soomro, T. R. (2013). Impact of smartphone's on society. *European journal of scientific research*, 98(2), 216-226.
 - Shih, Y. Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet research*.
 - Smith, A. L., & Chaparro, B. S. (2015). Smartphone text input method performance, usability, and preference with younger and older adults. *Human factors*, 57(6), 1015-1028.
 - Sok, C. (2005). Factors affecting consumer perceived value and purchase intention of mobile phone in Cambodia and Taiwan. PhD Dissertation, 1-135.
 - Suki, N. M. (2013). Students' dependence on smart phones: The influence of social needs, social influences and convenience. *Campus-Wide Information Systems*.
 - Suki, N. M., & Suki, N. M. (2013). Dependency on smartphones: an analysis of

structural equation modelling. *Sains Humanika*, 62(1).

- Ting, D. H., Lim, S. F., Patanmacia, T. S., Low, C. G., & Ker, G. C. (2011). Dependency on smartphone and the impact on purchase behaviour. Young consumers.
- Wang, Y. S., & Shih, Y. W. (2009). Why do people use information kiosks? A validation of the Unified Theory of Acceptance and Use of Technology. *Government information quarterly*, 26(1), 158-165.
- Weinberg, D. (2012). Smartphone features.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of marketing*, 60(2), 31-46.