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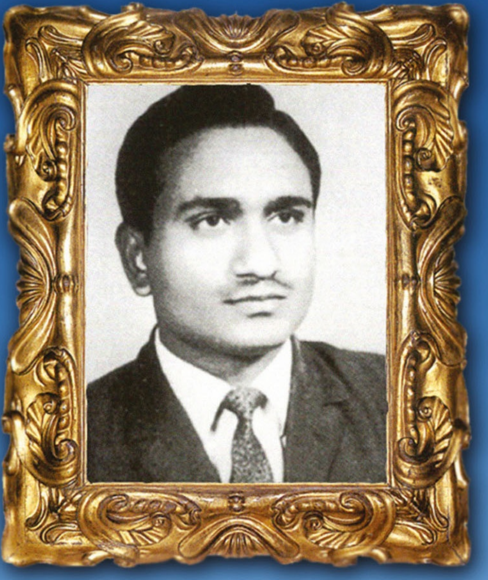
A TRUE VISIONARY

"You see things and you say **Why**? *But I dream of things that never were and say* **Why** *not?"*

- George Bernard Shaw



Shri Jagannath Gupta
(1950 - 1980)

Also a true visionary...who dared to dream!
He lives no more but his dreams live on....and on!

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And more dreams to come!

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Editor's Desk

"Am I audible"

The most common statement that is being heard nowadays. And this is not the only one, a few others which are trending without being searched "you are on mute", "I am having network issues", 'I hope this email finds you safe and well!', "Can you see my screen", "Can everyone switch on their cameras?" "Your voice is breaking", "Can I call you back?". "One person at a time please" and some more. These statements have become part of our daily life; their adoption rate was fast than that of any technology, which led to the embracing of this new style of communication across businesses and in education across the globe. Educational institutions have been at the forefront of this transformation. All credit must be given to both the teachers and students to cope with this change in no time. Now when we all have accepted the 'New Normal' it's time to sit and evaluate the challenges in effectively communicating and find our own unique style. Since interacting with students plays a major role in their learning, communicating with them in an online scenario requires more diligence and thoughtfulness. The major challenge is to develop a relationship with them since the *Oculesics, Haptics, Proxemics, and Kinesics* are missing from interaction, so the communicator needs to find different innovative ways to get across to their audience. The same hold true for corporate communication. Taking a clue from the words of Stephen Brookfield, a Distinguished Scholar at Antioch University, an Adjunct Professor-Teachers College at Columbia University (New York) and an Emeritus Professor at the University of St. Thomas (Minneapolis-St. Paul) quoted through his article published in Harvard Business Review that there are four lenses that he identified during his 50 years of teaching to develop critical reflection to test his assumptions and scrutinize actions, decisions, and judgments:

1. **Students' eyes.** How we see students responding to our courses.
2. **Colleagues' perceptions.** Advice from our closest colleagues or other trusted sources.
3. **Personal experience (as both teachers and learners).** Our own life experiences and how we interpret them.
4. **Theory.** Information from generally accepted research and theory.

The student's eyes give their perspective, hence taking feedback and being open to listening is the key. Here technology tools can be used to take feedback as often as possible. Colleagues' perceptions and constructive criticism cannot be undermined; they might have been going through the same experience so discussing with them gives practical insights. At times, there may not be a ready solution available, but a different perspective could help. Empathy and personal learning help in handling the situation more maturely. Teachers will need to develop new methods of engaging the students in discussions during their classes. So as a teacher, one need to be open to experimenting with communication modes with different combinations keeping in view the mind-set of the students.

I wish all the teachers and students to engage in a more meaningful and wish Happy and Quality Learning.

(Ashok Sharma)

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CAN INDIA GO CASHLESS? ASSESSING THE ROLE OF PUBLIC AND PRIVATE SECTOR BANKS IN MOBILE BANKING IN INDIA

Dipankar Jana* Abhijit Sinha**

Purpose: *The study looks at the issue of mobile banking in the country with a focus on changing trends during the rule of the NDA government and more specifically after the launch of the 'Digital India' programme. The study assesses the growth during the period 2012 to 2019 in respect of volume and value of mobile banking transactions. The contribution of public and private sector banks in this mode of banking is also explored.*

Design/methodology/approach: *The research applies the semi-log method for arriving at the growth rate. However, for testing the structural break, Chow test is applied.*

Findings: *The analysis shows that though there is an overall rise in the volume of transactions, the average transaction is on the decline. The public and private sectors both experience a huge rise in the extent of mobile banking transactions in the country. An interesting finding is that there has been a spurt in the transactions volume since the launch of the 'Digital India' programme.*

Originality/value: *There is no previous research evidence that looked into the issue and the changing nature in this mode of transaction since the promising programme of the government of India.*

Keywords: Mobile banking, Public and Private, Growth, Structural break.

JEL Classification: C20, C02, G21

India is an emerging economy and is among the growing superpowers of the world. With time, if one looks at the contribution of industry, agriculture and service sector in the gross domestic product of the economy, it will be seen that things have gone upside down. In other words, the service sector which was at a nascent stage during the few decades after independence is dominating in terms of its contribution. Moreover, the contribution of banking sector is phenomenally changing and is on the rise. However, though the country has been growing at a pace, which exceeds most of the other economies, disparity and inequity are two terms, which are plaguing the economy. In line with this, financial exclusion is also a problem that the policy-makers have seen and thereby trying to reduce its menace. As a result, the extent of studies on financial inclusion worldwide, including in India has been quite wide. However, there has been a dearth of research evidences in the field of mobile banking, which is an innovation to reduce financial exclusion in the country. Some of the relevant ones are mentioned to lay the foundation for this piece of academic contribution. Devan (2013) connects the success of mobile banking in India to the telecom revolution that has been transforming the way of lives of the populace. This form of banking is considered to be an efficient channel to provide banking services by easy means where customers can avail 24X7 banking. It is, therefore, considered as an important way to financially include the excluded ones. Singh and Sinha (2016) in their study look at the perception of customers towards mobile banking services provided by the public and private sector banks. The study notes that though the number of mobile users is 900 million the number of customers availing service using mobile is only 40 million. Though the volume of services through this mode is on the rise, low awareness among the public and poor mobile connectivity in many parts of the country are two factors that act as impediments to the success story. Some of the prominent issues that act as hurdles in the way of mobile banking are looked at in earlier studies. Some of the prominent hurdles identified in the implementation of mobile banking include lack of trust [(Kim et al. (2007); Singh et al. (2010)], need for creativity [Vyas, 2009; Rao et al. 2013], need for widespread use of smart phones [Safeena et al. (2012); Lin (2010)], negative attitude towards mobile banking [Sadi and Noordin (2011)], misuse and creating frauds in accounts (Sharma and Singh, 2009), difficulty for first time users in using hi-tech banking technology (Cracknell, 2004) and privacy concerns (Nayak et al., 2014). Moreover, social norms and risk are also factors that act as impediment in the

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adoption of mobile banking as pointed by Riquelme and Rios (2010) but banks will continue to stress on this banking mode as it gives an opportunity to bankers Dasgupta et al. (2011) and it is very handy to customers as it increases mobility (Suoranta and Mattila, 2004). However, bankers should keep in mind the 'gender' factor with regard to the pace of adopting technology as evident from the foreign studies of Venkatesh and Morris (2000), Dewan (2010) and Sohn and Lee (2007).

Though there are serious issues that confront mobile banking, it is popularly used by customers to avail different kinds of services, which include getting information on accounts, managing transactions with banks, making payments (Clark, 2008, Scornavacca and Hoehle, 2007). Some of the Indian studies on mobile banking are mentioned. Bhuvana and Vasantha (2017) and Karjaluoto et al. (2002) in their empirical research identify the key factors that play a role in adaptation to the use of mobile banking. The investigation finds attitude, ease in use, level of trust on banks and perception about risk as the main influencing variables affecting their behavior. Sharma and Kaur (2016) made a study to see how this mode of banking has been progressing and identify the trend over the years. Selvakumar et al. (2015) in a general study identifies the general perception of the people to services of banks in Sivakasi in Tamil Nadu. Sundaram and Sriram (2015) in another research find the issues relating to the banking experience through banking correspondents, the banking points in remote and rural areas of the country. The survey in the Katpadi and Vellore blocks identifies that weak technological infrastructure act as a strong impediment to financial inclusiveness. The study by Singh and Malhotra looks into the aspect of internet banking among the commercial banks in the country. The study by Fenu and Pau (2015) in an Italian based study finds the growing popularity of mobile banking because of the availability of hi-tech phones, which make easy downloading of mobile applications and transacting banking business. The study by Kamboj (2014) which throws light on the inclusiveness level in the country focuses on the need to put more efforts that will help in increasing inclusiveness through banking. Gupta and Mittal look into the progress of mobile banking in the country. Thus, it is evident that though financial inclusion is on the agenda of the policy-makers for a long time, the extent of inclusiveness in the country is quite low. The impetus of inclusivity into the formal financial system has gained momentum with the declaration of 2005 as the International Microcredit Year. Since then, all facets of development can be seen in the economy and several initiatives have been taken with a view to percolating the practice of financial inclusiveness among the excluded groups, which mainly include the female class, the rural community and unorganized class of people among others. In line with the progress towards inclusiveness, mobile banking is an innovation that is seeing transactions increase in leaps and bounds. It is, however, important to note that the use of mobiles for banking transactions is a story, which is not new and has been here for quite some time. Though, the use of mobile phones in the country has jumped exponentially, the growth in banking transactions is yet to reach expected levels because of many issues that confront this banking mode. Moreover, it is worthy to note that the extent of success so far received in reducing the disparity in inclusion is yet to come and hence the policy-makers and the government at large are adapting to mechanisms that will not only popularize banking but will also enhance the accessibility and usage of banking services. Consequently, reforms in banking is a continuous process to make the service customer-friendly which service receivers can have access to easily and quickly. Mobile is an innovation that aims to meet the same. Transformation in mechanisms to provide better services is not new in the service industry, in the era where technological obsolescence is a common risk for businesses, mobile is definitely a device that helps customers to come into 'closer' contact with the bank. The present study makes an effort into the trend in mobile banking in the country and the role of the public and private sector banks.

I. Review of Literature

Banking is among the favourite areas of research in the field of finance. It is opined by Ashta (2010) and Wang et al. (2003) that though mobile banking is slowly gaining popularity, the transition to this technology-based banking is still quite low as the majority of customers still prefer the traditional form of banking. In the background of new developments taking place in the industry, there are new arenas that are covered which include mobile banking, e-banking, green banking among many others. Some of the earlier studies that are done in the area of mobile banking are highlighted below. The study by Singh et al. (2010) finds that mistrust on banks is a factor that affects the acceptability of mobile banking. In a similar study, Sharma and Singh (2009) find that the chance of fraud in such mode of transactions also discourages people to avail this facility. Nayak et al., 2014 finds that privacy is also a prominent issue in mobile banking. Bhuvana and Vasantha (2017) in their examination of the various factors leading to the adaptation of rural customers to use mobile banking look at the association between variables using structural equation modeling. The study identifies attitude, perceived ease of use, trust on banks and risk as the key variables that affect the behavior of rural customers. Balakrishnan and Sudha (2016) in a Chennai-based study look at the basics of mobile banking that include the meaning and its need. The study observes that though the RBI has come with important regulations, the key issues of insecurity and insufficient understanding of technology hamper the process of mobile banking. Kishore and Sequeira (2016) in the Karnataka-based study look at the factors that facilitate the adoption of mobile banking in the state among the rural people. It is observed that the demographic variables like age and gender play a moderating role in the relationship between attitude and usage intention. Kumar et al. (2016) in their study consider mobile banking to be a means for movement of funds and retrieval of data. Their research stresses on the issues of speed, suitability, usability that were vital for the success of mobile banking in India. Sharma and Kaur (2016) look into the progress in mobile banking and report that there has been a continuous rise in the business through this means which will help to penetrate rural unbanked areas. Singh and Sinha (2016) study the attitude of customers towards mobile banking services which are offered by the public and private sector banks. Selvakumar et al. (2015) examine the perception of customers towards banking services based on a study in Sivakasi. The survey reports the need for further percolation of such services in the rural areas. Sharma (2015) in the study on factors that influence mobile banking find the crucial effect of chances of making an erroneous transaction and insufficient guidance available to the customers. Vijaykumar and Jayachitra (2013) recognise the potential of the success of mobile banking in India especially after 2008 when the banking regulator set few guidelines. The authors also discussed the concept of bank-led versus non-bank led model. Sundaram and Sriram (2015) investigate into the issues relating to banking correspondents who act as banking points in villages. The research in the Katpadi and Vellore blocks of Vellore district shows the failure of technological support due to which there is a continued difficulty in use of bio-metric scanners and smart card readers. Dhillon (2014) in their analysis of mobile banking comment that the industry has surpassed the introductory phase and is slowly focusing on the rural and urban areas. However, the key challenges to the success arise from the challenges that are often cited from users of this mode of banking like network issue, limited services availability from mobile banking, poor service in case of rectification of wrong transaction. Kamboj (2014) looks at the aspects of inclusiveness and growth in the country. The research suggest the need for increasing penetration and availability on the part of the banks that will help in easier access of banking services among the urban and especially the rural masses. Khuntia et al. (2014) focus on the need for financial literacy campaigns, financial education, opening of branches and banking points at the interiors of the rural areas along with taking the advantage of technology to promote financial inclusion. Shabna (2014) in the Kerala-based study investigates the relationship between earnings, savings and credit availability, which is seen to be positive. The study raises the need for banks to become more customer-friendly and extend more services to the rural people. Akudugu (2013) in the study on financial inclusion in Ghana mentions about the relationship between demand for services and age. The study suggests the need for integration between the formal and informal financial system to generate benefits of inclusiveness. Devan (2013) finds that the key reason behind the popularity of mobile banking is the telecom revolution in the country and hence is being considered to be a popular banking channel. Goyal et al. (2012) assess the potential in growth in mobile banking by looking at growth in the number of mobile phone users and the success stories in different parts of India regarding mobile payment services. Karjaluoto et al. (2002) in an interesting contribution identifies the key factors that facilitate the adaptation to the use of mobile banking.

Research gap

The investigator finds no study in recent years that traces the growth in mobile banking by looking at the public and private sector separately. There is no research evidence that aims to check whether there is any change in the trend in mobile banking transactions between 2012 and 2019 (considering monthly data). The research correctly addresses the gaps by looking at the average value in transactions, looking at the trend in both the sub-periods and also testing for stability in the growth trend.

Objectives of the study

The following are the dual objectives of the study:

(I) To determine the trend in transactions using mobile banking.

(II) To test for structural break in the growth trend during the study period.

II. Research Design & Methods

a) **Data period:** The empirical work is based on study of mobile banking transactions in India. For the purpose of this study, secondary data is considered for the period 2012 to 2019, the period during which a lot of impetus has been given towards digital receipts and payments and online banking. The entire period is divided into two sub-periods 2012 to 2015 and 2016 to 2019

b) **Sample considered:** The data referred to above is the summary of transactions of different groups of banks that include public sector banks and private sector banks.

c) **Research methods applied:** On the basis of the objectives of the research, descriptive statistics, trend analysis and Chow tests are applied. The descriptive statistics highlight the nature of the sample data whereas the trend analysis helps to capture the growth trend. For the purpose of this analysis, the semi-log method is fitted where the dependent variable is log-transformed on which the growth curve is fitted. The purpose of transformation is to bring the data closer to normality which will invite the application of parametric tests.

The semi-log method is fitted using the following equation:
ln (Yt) = a + b.t,

where Y_t is the variable of interest, a is constant, b is the slope (i.e. growth) and t is time.

The following null hypotheses are tested in this empirical investigation:

(i) H_0 = There is no growth in the volume and value of mobile banking transactions.
(ii) H_0 = There is no structural break in 2016 with respect to mobile banking transactions in the case of public and private sector banks.

III. Results and Discussion

The following sections bring to light the results of the analysis.

Descriptive statistics
This is a basic requirement of any research as it gives the investigator idea about the nature of data. Given below (in table no. 1) is the result of descriptive statistics of mobile banking in the case of both public and private sector banks. The mean value for the two sub-periods shows a huge rise between the first and second sub-periods. Moreover, the mean volume of transaction in the entire period exceeds that of the first and second sub-periods. Similarly, a look at the maximum and minimum value shows a wide variation in both the cases. The values of skewness and kurtosis show the distribution of data with respect to their asymmetry and heaviness of tails due to extreme data.

Table 1: Descriptive statistics of volume of mobile banking transactions.

Statistic	First sub-period		Second sub-period		Entire period	
	Public sector	Pvt. sector	Public sector	Pvt. sector	Public sector	Pvt. sector
Mean (lacs)	777.890	639.720	19832.26	17625.23	10305.08	9130.98
Kurtosis	1.645	1.519	2.342	1.679	5.717	3.727
Skewness	1.302	1.335	1.589	1.367	2.369	1.933
Minimum (lacs)	348.66	86.865	3009.30	4866.11	348.66	86.865
Maximum (lacs)	1462.738	1553.859	53551.74	39083.36	53551.74	39083.36

Source: Computed by researchers

Similar to the above table, table 2 gives the descriptive statistics of value of mobile banking transactions. The results show that there has been a huge rise in terms of value for both public and private sector banks during the two sub-periods. In terms of multiples, the rise is more in the case of the former than the latter. The mean value for the two sub-periods shows a huge rise between the first and second sub-periods. Moreover, the mean value in the second period exceeds that of the first and entire sub-periods. Similarly, a look at the maximum and minimum value shows a wide variation in both the cases. The range of values in all the periods also shows that there is a huge gap between the minimum and maximum figure.

Table 2: Descriptive statistics of the value of mobile banking transactions.

Statistic	First sub-period		Second sub-period		Entire period	
	Public sector	Private sector	Public sector	Private sector	Public sector	Private sector
Mean (Rs. lacs)	2057.14	6977.49	99695	133840.4	50876.06	70408.96
Kurtosis	3.448	3.000	3.790	1.004	5.041	1.272
Skewness	1.852	1.742	1.941	0.889	2.144	1.341
Minimum (Rs. lacs)	180.203	196.71	49735.55	49485.10	180.20	196.71
Maximum (Rrs. lacs)	6387.536	21559.87	228005.4	245933.9	228005.4	245933.9

Source: Computed by researchers

In the context of mobile banking, it is not just the value and volume of transactions that is important. The average value per transaction is extremely important. The table below (No. 3) throws light on the 'statistic' based on the average amount of transactions during different years of the second sub-period in which mobile banking got impetus from the banks and regulator.

Table 3: Descriptive statistics of average value of mobile banking transactions (all figures are in Rs.).

Particulars	2016	2017	2018	2019
Mean	12547.7	10976.41	5234.58	4584.45
Standard deviation	1880.26	4684.66	226.51	908.70
Minimum	10013.1	5118.21	4197.48	3229.47
Maximum	15612.8	18678.93	6679.18	5863.06

Source: Computed by researchers

The above table gives interesting results. The mean value shows a declining trend which shows that the rate of change (rise) in the value of transactions is less than that of volume. Moreover, the range of values shows a decline from Rs. 12547 in 2016 to around Rs. 4600 in 2019. In the next part of the analysis, the researchers look into the growth trend for different parameters of mobile banking. Initially, we look into the growth in the average value of transactions using the semi-log method.

Table 4: Growth rate in average value of mobile banking transactions.

Summary Output								
R Square = 0.728, Adjusted R Square = 0.722								
ANOVA result								
	Df	*SS*	*MS*	*F*	*Significance F*			
Regression	1.00	8.536	8.536	120.307	0.00			
Residual	45.00	3.193	0.071					
Total	46.00	11.729						
	Coeff.	*Std. error*	*t – stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	9.666	0.079	122.406	0.00	9.507	9.825	9.507	9.825
Time	-0.031	0.003	-10.968	0.00	-0.037	-0.026	-0.037	-0.026

Source: Computed by researchers

The curve fits well as evident from the p-value of the F-statistic. Moreover, the time factor explains up to 72% of variability in the mobile transaction during the period. The computation shows that the growth rate is an average decline of 3.1% which points that the intensity of usage is coming down over the years. This matches with the observation that the investigators made in the above table. Next, we look into the growth rate in volume and value of transactions during the two sub-periods and also the entire period.

Table 5: Growth in mobile banking transactions.

Period	Volume		Value	
	Public sector	Pvt. sector	Public sector	Pvt. sector
First sub-period	0.467*** (11.186)	0.951*** (21.219)	1.187** (8.994)	1.564*** (40.418)
Second sub-period	0.985** (9.408)	0.688*** (22.333)	0.476* (2.385)	0.514*** (10.489)
Entire period	0.705*** (12.478)	0.856*** (28.621)	1.058*** (10.597)	1.000* (9.456)

Source: Computed by researchers

Note: Figures in the parentheses represent t-values

The above table shows that during the first sub-period, the growth for the private sector exceeds that of the public sector in respect of both volume and value of transactions. With respect to volume, the rates are 95.1% and 46.7% whereas in respect of value, they are 156.4% and 118.7%. In line with the above, a similar analysis is done for the second sub-period. The results, however, vary in this case; the growth rate for the public sector surpasses that of the private sector in respect of volume but the scenario is different with respect to value. This shows that the average value of transaction in the case of the latter far exceeds that of the former and thereby shows the increasing focus of private banks towards mobile banking. Finally, to get an idea about the overall growth during the study period, the trend equation is fitted which shows that the private sector experiences higher growth in respect of volume (85.6% versus 70.5%). However, the result differs in case of value where the public sector fares better. Thus, the public sector banks have been able to market the use of mobile banking in a better way. The interesting aspect that the

researchers identify is the changing focus of the private and public sector banks with regard to mobile banking.
In the final part of the analysis, the researchers check for any change since 2016 when the Indian government gave a tremendous focus on cashless transactions for which mobile banking got due impetus. For the purpose, the Chow test is applied to test for structural break, if any.

The hypothesis for the Chow test is given below:
H_0: There is no structural break in 2016
H_1: There is a structural break.

The formulae for computing the F-statistic for the test is given below:

$$\text{Chow} = \frac{(RSS - RSS_1 - RSS_2)/k}{(RSS_1 + RSS_2)/(n_1 + n_2 - 2k)} \sim F_{k, n_1+n_2-2k}$$

Where RSS = residual sum of square of the total period, RSS_1 = residual sum of square of the first sub-period, RSS_2 = residual sum of square of the second sub-period, k = number of degrees of freedom, n_1 = number of time periods in the first sub-period and n_2 = number of time periods in the second sub-period.

The value of F-statistic in different cases is determined which is given in the table below which is compared with the table value to determine the acceptance or rejection of the null hypothesis. The Chow test shows that for the two sectors taken together there is no structural break with respect to volume but there is break in respect of value. However, for both the sectors, there is a break in the trend with respect to volume of transactions. The value parameter shows that only the private sector and the industry experience a structural break; there is no change (in statistical sense) in the path of the growth rate for the public sector.

Table 6: Test for structural break.

Particulars	Volume			Value		
	Public	**Private**	**Total**	**Public**	**Private**	**Total**
F-value (computed)	10.646	13.606	4.715	6.794	142.751	68.204
F-value (table)	9.944					
Inference	Reject H0	Reject H0	Accept H0	Accept H0	Reject H0	Reject H0

Source: Computed by researchers

Thus, the study finds interesting results with regard to the success on mobile banking. In connection with financial inclusiveness, mobile banking is therefore being considered as an important means for achieving the goals towards providing banking access to all.

IV. Conclusion

The Indian economy is an emerging one and the contribution of various sectors like industry, agriculture and services is changing. The service sector is among the dominating ones in the economy in which banking plays a vital role in the economy. There is evidence of technological developments in the industry and mobile banking is one such innovation that the RBI introduced in 2009. The aim of the research is to critically examine mobile banking during the last decade. The focus is on the growth of transactions using this mode of banking and the contribution of public and private sector banks. The results show that the average volume of transactions for public sector banks exceeds that of the private sector banks. Interestingly, the mean value of transactions for the private sector surpasses that of the public sector banks.

The examination of the growth rate shows that though prior to the launch of the 'Digital India' programme by the Modi government, the growth of the private sector exceeded that of the public sector in respect of both volume and value of transactions, after the launch of the programme, the public sector banks surpassed the private sector in respect of total volume of transactions. The point that is obvious is the tremendous pace of growth in mobile banking. The second aspect of the study looks at the issue of structural break in the growth trend. The volume of transactions shows a significant change after the launch of the flagship programme, which is true for both the public and private sector banks. An analysis shows the domination of public sector in terms of volume, though in terms of value the private banks show a higher rate. Hence, the benefit to the private sector banks from more customer-oriented systems and innovative mobile banking solutions is apparent from the study.

The empirical study therefore gives new insights to the status of mobile banking in the country. On the basis of the investigation, the researchers suggest that it is necessary for both the category of banks to come up with more customer-friendly solutions through mobile banking. It is necessary on the part of the banks to give training to the customers so that they get the confidence to transact through this form of banking. Moreover, incentives can be given to customers in the form of points or coupons that will encourage customers to change the modern form of banking. For the overall success in this mode of banking, we will have to wait and see.

Practical Implications of Research

The findings of the study are very useful inputs to the government and the policy-makers apart from the bankers. The conclusions from the research gives a positive signal to the government that mobile banking has the potential to be a success in the India and 'Digital India' programme is in the right direction. However, it needs to be explored as to why mobile banking is more popular with private sector banks in comparison to the rural counterparts. The necessary features that would increase the acceptance of mobile banking usage should be added in the features. Another finding from the review of literatures is the low awareness among bank customers about mobile banking and its features, which can therefore be used by banks for conducting literacy and training sessions for the customers.

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DETERMINANTS OF ELECTRIC VEHICLES USAGE INTENTION: AN EMPIRICAL STUDY IN INDIA

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Purpose – *Due to deteriorating environment and strict emission laws in India, now preference is being given to electric vehicles (EVs) over conventional vehicles, in which fully electric vehicles are at the priority. The purpose of this study was to determine the factors influencing EVs usage intentions in India.*

Design/methodology/approach – *The methodological approach used survey data that included psychological, contextual, and demographic factors to ascertain the motivators and barriers affecting EVs usage intention. An empirical study based on a survey questionnaire was distributed to more than 2000 respondents by judgment sampling in Delhi-NCR out of which 516 responses were selected for analysis.*

Findings - *The findings concluded that, environmental concerns, perceived behaviour control, subjective norms, govt. policy incentives, and perceived risk were positively related with EVs usage intention whereas initial purchase price, driving range, and resale value were negatively related with EVs usage intention. However, consumer lifestyle revealed a negligible effect on EVs usage intention.*

Originality/value – *This study contributes by validating the variables of the theory of planned behaviour with extension along with the improved understanding of the role of consumer demographic factors in determining their EVs usage intention.*

Keywords: Electric vehicles, National electric mobility mission plan, Usage intention, Influencing factors.

JEL Classification: M31, M38

In search of new ways to improve the economy and livelihood, humans have not only disturbed the climate balance but also gave birth to global warming pollution. After the US and China, India also leads in the race for pollution emissions. 100% of the population of India as well as Belgium and Singapore while 92% of France and 90% of the UK population are exposed to pollution as per WHO air quality guidelines (Global Mobility Report, 2017). The transportation sector is responsible for approximately 14% of global greenhouse gas emissions and this is projected to increase to 50% by 2030 (IEA, 2007). There are currently over 1.2 billion vehicles on the planet (Drivesurfing; Green Car Reports, 2014, which are projected to double by 2030 due to cars (Global Mobility Report, 2017). Mankind must realize that today's transportation system is not sustainable due to its dependence on fossil fuels and is the main cause of greenhouse gases, air pollution, and global warming. Now the governments of almost all countries are beginning to understand that the environment can be improved only by replacing traditional vehicles with new eco-friendly vehicles, such as electric vehicles. To ensure this and provide momentum, all these countries have prepared their own national plans. The countries' plans to promote environmentally friendly vehicles are illustrated in Table 1 below. India is one of the most polluted cities in the world, massively covered with a sheet of pollution emitting daily on Indian roads, especially from cars and 2 wheelers. After two-wheelers, cars are the major source of pollution in India with overall 2.25 crores cars registration (community.data.gov.in, 2017) and 14.78% growth rate p/a (SIAM, 2018). Following the BS4 (Bharat Standard 4) emission norm, the BS6 emission norm was proposed in India from April 2020, which is now being delayed due to the COVID-19 epidemic. However, apart from the BS 4 and 6 norms, "National Electric Mobility Mission Plan" (NEMMP) has been implemented with the aim to bring the pollution problem under control quickly and firmly by obligating automobile manufacturer to replace internal combustion engine vehicles (ICEVs) with electric vehicles (EVs) by the year 2032. In spite of the benefits of EVs, there are several obstacles that need to be addressed and overcome before the EVs will be widely adopted in Indian market. This research was designed to assess the usage intention of Indian potential car consumer with regards to EVs based on the extension of the theory of planned behaviour developed by Ajzen (1985). The awareness level of Indian

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people towards EVs and NEMMP was also studied under this study.

Table 1: Examples of some countries' plans to promote EVs.

Countries		
China	2020	Promote new energy vehicles (include EVs) by introducing subsidies on EVs to achieve 12% of sales by 2020
Denmark	2019	Ban on entry of diesel cars manufactured after 2018 in Copenhagen
France	2040	Banning petrol/diesel cars by 2040. Banning the entry of petrol/diesel cars into Paris by 2030
India	2032	Plans to sell only EVs (cars)
Russia	2025	Support to increase domestic sales of EVs from 100 IU in 2017 to around 1 lakh IU by 2025 or 4-5% of overall vehicle sales
UK	2040	Banning petrol/diesel cars by 2040. Oxford city to shift to EVs by 2020
US	2030	Only Los Angeles and Seattle to ban petrol and diesel vehicles from their cities (was a member of IPCC earlier but pulled out a few years ago, but now the new US government has announced to become a member again).
Source: Kumar, S. (2020).		

Importance and motivation of the study

The current road transportation system, especially automobiles are majorly responsible for making India the world’s third-biggest emitter of carbon. Today's road transport is almost entirely dependent on internal combustion engine vehicles (ICEVs) that burn fossil fuels to run and cause massive amounts of pollution. As the current ICEVs use cannot be reduced, the Government of India felt a dire need to adopt an alternative technology to reduce fossil fuel consumption of vehicles. After the government imposed BS 4 & 6 standards to tighten the emission of ICEVs and imposed a heavy tax on luxury & heavy CC cars, now national electric mobility mission plan (NEMMP) is launched with the initial aim to replace ICEVs with electric vehicles EVs by the year 2032.

The need to study the impact of the NEMMP on the government policy, auto manufacturer, and consumer after implementation provided the impetus for this study. Because if considered, the situation will be very troublesome and chaotic if ICEVs are phased off Indian roads without determining the intention of the Indian consumer towards EVs. Therefore, in the Indian context, it is very important to determine such factors that affect the Indian consumer intention to use EVs. Despite the benefits of EVs, there are some hurdles that need to be addressed and overcome such as Indian consumers tending to resist new technologies that are considered unrecognized. As the previous findings suggest that despite consumers having a positive intention and attitude towards EVs, there remains a distinction between positive attitudes and actual market data. This reflects an attitude–action gap that depends on individual behaviour that is subject to change over time and under different circumstances. Predetermining the factors influencing the Indian consumer's intentions to use EVs is the mainstay of this study's motivation because as a result, NEMMP will have a much higher probability of success as policy incentives will adapt to consumer needs over time as well as automakers will be in a position to make upcoming versions of EVs more customer-centric, matching their level of expectation and predefined standards.

Objectives of the study

Considering the importance, implications and requirements of this study, the major objectives set out are as follows:

a) To study the awareness level of consumer towards electric vehicles.
b) To study the awareness level of consumer towards NEMMP.
c) To identify the nature of the relationship between socio-cultural factors and intention to use EVs.
d) To identify the nature of the relationship between techno-political factors and intention to use EVs.
e) To study the influential effect of demographic factors on EVs usage intention.

I. Review of Literature

Determinants of Usage Intention

The usage intention has also been studied in previous studies as other similar proxy variables of usages intention (OSPVs) such as intention to purchase, buy, adopt, accept, etc. The study’s literature review section includes all existing studies analyzing consumers' usage intentions or OSPVs towards EVs. The parameter of influencing factors for the usage intention (OSPVs) for EVs is not limited. Numerous researches conducted in different countries have uniquely included and analyzed these influencing factors and have drawn diverse findings on the EVs and the reason behind this is the existence of different settings and perceptions of different customers (Chanaron & Teske, 2007; Egbue & Long, 2012). Psychological, social, cultural, contextual, political, demographic factors, etc. can be seen to affect consumers' usage intention in a different-different manner. In this research study, the influencing factors for EVs usage intention have been classified into 3 broad constructs such as sociocultural, demographical, and techno-political.

Sociocultural

several previous studies have specified that environmentally concerned consumers are much likely to be involved in early acceptance of new technology such as EVs UI or OSPVs (Razak M. I. M et al., 2014; Sang and Bekhet., 2015; Moons & De Pelsmacker., 2015; Wang S et al., 2016; Wang Z et al., 2017; Shalender & Sharma, 2020) and adoption of EVs (Zhang X et al., 2013; Noppers et al., 2014; Thananusak T et al., 2017). As evidenced by previous studies findings, social norms (SN) are correlated with EVs usage intention (UI) (Kelkel 2015; Moons & De Pelsmacker 2012; Sang and Bekhet, 2015, Hamilton & Terblanche-Smit., 2018; Asadi et al., 2020; Shalender & Sharma, 2020). People under social influence communicate with their social networks to deliberate on their pre adoption decisions in case they are uncomfortable with uncertainty (Burkhart and Brass, 1990; Lu et al., 2005). Perceived behaviour control (PBC) can be described as actual control over one's behaviour. It has often been seen that despite having both positive attitude towards a product and positive social pressure to perform a conduct, it may still be difficult for consumers to perform an action (Ajzen 2005) or consumer may not develop an intention to perform that behavior (Chen 2007).

Empirical research supports the link between PBC and EVs UI (Hong, Y. H et al., 2013; Hamilton & Terblanche-Smit, 2018, Huang and Ge, 2019; Shalender & Sharma, 2020). Perceived risk is the uncertainty about the potentially adverse outcome from an individual activity (Jacoby & Kaplan, 1972). In this study, perceived risk refers to the worries regarding the performance of EVs. The study conducted by Wu et al. (2015) divulged that perceived risk is adversely related to the purchase of green electric motorcycle. Similarly, In a study conducted in China, Xu et al. (2020) revealed that EV driving experience negatively affects perceived risk, and perceived risk is also negatively associated with intention to adopt EV. Although the consumer's lifestyle is a less studied factor, in some studies, it has been found to have a profound effect on the adoption of new technology. In lifestyle theory, Axsen et al.(2012) asserted that inconsistency between a technology such as EVs and lifestyle of a consumers or engagement with certain activities, may lead to the rejection of EVs and vice versa:

H_1: There is a significant relation between EC and EVs usage intention.
H_2: There is a significant relation between SN and EVs usage intention.
H_3: There is a significant relation between PBC and EVs usage intention.
H_4: There is a negative relation between perceived risk and EVs usage intention.
H_5: Consumer lifestyle is significantly related with EVs usage intention.

Techno-political Factors

Techno-political factors comprise political and technical factors related to electric vehicles only. In some studies, they have been analysed as internal factors. The literature identifies the following vehicle attributes as those that have the most influential impact on EVs usage intention (UI): vehicle purchase price, driving range, government incentives, and resale value. The purchase price (PP) of EVs is found to have a strong influential effect on the consumers' UI (Delang & Cheng, 2013; Lane & Potter, 2007). The previous studies revealed that the EV purchase price compared to a CV in similar segment is critically important. In a US-based study, Carly et al. (2013) found that EV purchase price was the most prominent "major disadvantage" according to 55% of survey respondents, while for another 30% it was "somewhat a disadvantage". Vehicles that run on electric batteries are always a cause for concern of driving range (DR). Except for a few models recently launched in the Indian market, all EVs have a shorter driving range (in general, less than 100 miles of single / charge). How many miles drive an EV can give in a single charge has been found to be a major concern among consumers in many countries (Egbue & Long, 2012; Lebeau et al., 2013; Lim et al., 2014; Degirmenci & Breitner, 2017). This concern is more among Indian consumers due to inadequate charging infrastructure. EVs were found to be highly unacceptable among Indians due to poor performance in the initial phase. The increase in battery size and the possibility of recharging during the drive can prove to be an effective solution to this problem. Results from previous studies suggest that incentives offered on EVs, whether financial or non-financial, promote the adoption of electric vehicles. For instance, according to Gallagher and Muehlegger (2011), sales tax exemption given on EVs is more effective than income tax credits and non-tax incentives. In Korea, Kim et al. (2019) study found the perception of government incentives and public parking benefits to have a significant impact on EVs purchase intention. While on the contrary, Huang and Ge, (2019) study's result revealed an insignificant impact of govt. policy incentives on EVs purchase intention. However, there is no sound consensus in the results of the existing studies about the effectiveness of government incentives on adopting EVs as it varies from country to country. (Liao F et al., 2016). EVs resale value is a major cause of concern for many car buyers (Banerjee and Pilania, 2009, Lim et al., 2014). Especially in India, where the secondary market for EVs is not even close to predicting because if there is a decrease in demand for second-hand EVs than the cost of second-hand EVs will be automatically reduced. The resale value of EVs is a less studied factor around the world, but being highly relevant in the Indian consumer's perspective, it is quite essential for this study.

H_6: There is a negative relation between driving range and EVs usage intention.
H_7: There is a negative relation between purchase price and EVs usage intention.
H_8: There is a positive relation between govt. incentives and EVs usage intention.
H_9: There is a negative relation between resale value and EVs usage intention.

Demographic Factors

Most researchers have accepted the influential effect of the individual or demographic characteristics on the intention to use a product, purchasing EVs (Coffman M et al., 2015). Zhang Y et al. (2011) study claimed that purchasing time period of an EV is effected by the education and annual income whereas EVs purchase price acceptance is influenced by age, education, and number of family members. Similarly Zhang X et al. (2013) study claimed that high education & Income level of consumers are positively related to the EVs usage intention. Likewise, ÖZ, S. B. (2017) thesis confirmed that consumer's age, gender, education level, occupation type, family size, and family income have a significant effect on the EV buying intentions. Demographic factors also have an impact on a person's attitude. For instance, Sanitthangkul J et al. (2012) identified age, personal income, and occupation significantly positively related to the attitude towards eco-friendly cars usage. However, if consider the results of some studies, it is not necessary that all demographic factors have a significant impact on consumers' intention to use, especially when psychological and contextual factors are controlled for. Degirmenci & Breitner (2017) study's result asserted that age, gender, and occupation have no significant effect on consumers' attitude towards EVs. In particular, it can be said that the effect of demographic variables such as gender, age, income, education level and household composition is subject to changes in geographical conditions. In a China based study, Habich-Sobiegalla et al. (2019) confirmed that micro-level factors, such as age and education found to have a significant effects on EVs usage intention but their magnitudes are lower.

Usage Intention

There are a lot of studies available to determine the factors influencing the usage intent (UI) of consumer towards EVs. These factors have a significant impact on the consumer's intention to use. Whether this effect is negative or positive depends on other factors such as demographic characteristics, geographical location, etc. Purchase intention (or OSPVs) is analyzed in many studies as an influencing variable because it can be seen as an important indicator of future actual purchase behaviour. Moreover, the intent to use can be used as a proxy variable for adoption behavior (Arts et al. 2011; Schuitema et al. 2013).

Methodological Approach

Study Area

This study focuses on Delhi and the National Capital Region. Along with the capital, prominent cities of NCR such as Faridabad, Ghaziabad, Gurugram, Noida and Greater-Noida which fall in the NCR have been selected to collect the samples. People from many different states of India live in the Union Territory of Delhi and NCR, hence, Delhi and NCR can be considered as true representation of Indians of different culture and nature. Including Delhi, the prominent cities of NCR are densely populated areas with a population of 28 million. (Delhi 1.9 crore, Noida & Greater Noida 10.57 lakh, Gurgaon 15 lakh (2011), Faridabad 38 lakh and Ghaziabad 27.8 lakh).

Sample and Procedure

The survey was conducted from October 2019 to February 2020 through online surveys and face-to-interviews. Targeted population includes, adult people who live in Delhi and NCR, aware of EVs (fully or partially), and interested in EVs. Data were collected from big office hubs, university campuses, colleges, shopping areas and parking areas. The survey underwent few rounds of pre-tests and pilot testing to ensure that the questions were easy to understand and answer.

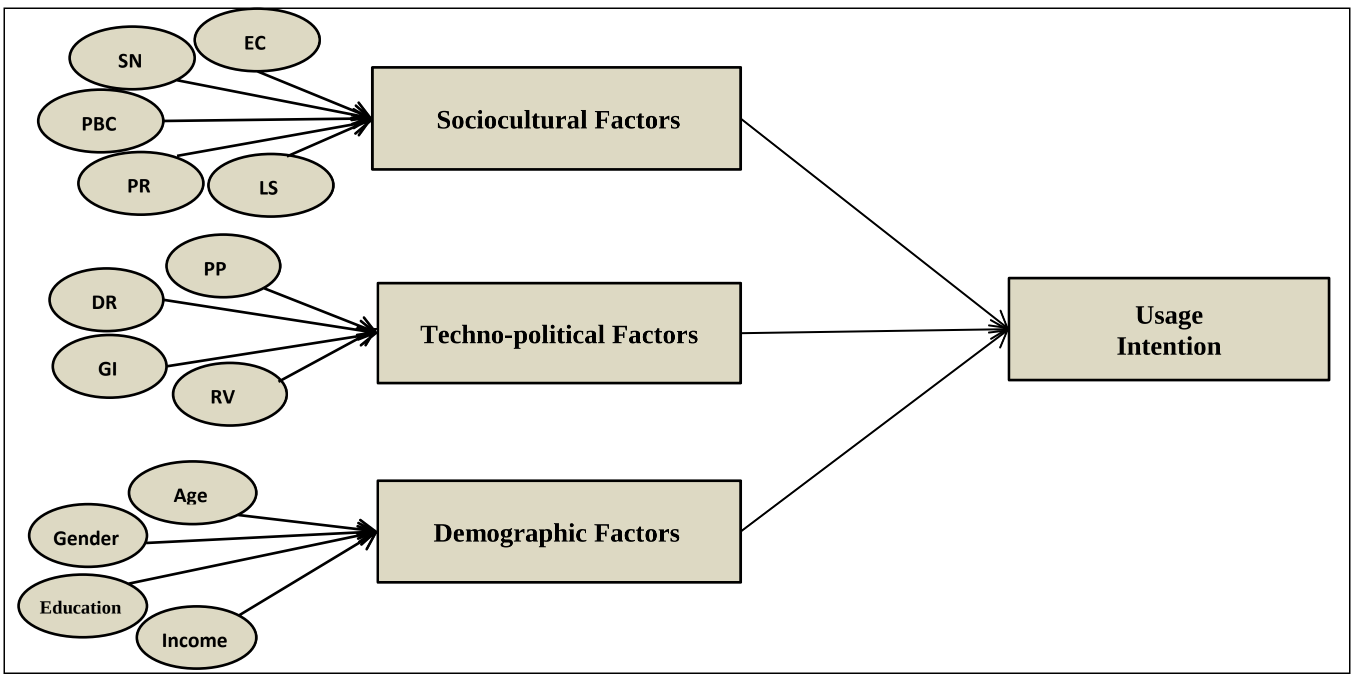
The study applied the judgmental sampling method to collect the data because the population is too large with an unknown population size. However, this sampling feature also indicates convenience sampling but in the beginning an eligibility question were asked in the survey to sort out the potential car consumers among the others. For this study, potential car consumers were those who had the car/s or had plans to buy a car in the near future and had the little awareness about EVs. Initially, an online link to Google Forms was created and sent to over 2000 people. However, we received only 216 (10.8% RR) valid responses with high demographic bias. This indicates less interest in Indian people to express their opinion on online platforms. Later, people in the above mentioned areas were approached face to face, which gave us 343 more responses and helped in reducing bias in data. After removing the undesired responses and outliers in SPSS, finally 516 responses were selected for further tests.

In the survey, respondents were asked to keep in mind that they would buy a car in near future and were also asked to indicate how likely they were to buy an EV in this case?. Items of the variables were rated on the 5-point Likert scale by the respondent, where scale 1 indicated that the respondent was "strongly disagree" to the statements while scale 5 indicated that respondent was "strongly agree" to the statement. A sample description is included in Table 3.

II. Research Design & Methods

The influencing factors are classified in to three broad categories i.e. sociocultural, demographical, and techno-political. This study is based on theory of planned behaviour (TPB) with extension because it includes TPB variables such as subjective norms, PBC and attitudes (e.g. EC) and analyzed the effect of all these variables on UI. The questionnaire consisted of five sections. The 1st section included the title, purpose of the survey and other relevant information. The section 2 included items related to respondents' demographic characteristics (age, gender, education and income), the Section 3 included items related to awareness and interest on EVs and govt. policy, the section 4 items comprised items of sociocultural factors (E.g. environmental concern: Kirmani, M. D., & Khan, M. N., 2018; Joshi, Y., & Rahman, Z. 2017, PBC: Moons, I., & De Pelsmacker, 2015, SN: Haustein and Jensen, 2018, perceived risk: Jiang, S., 2016, and lifestyle: Schuitema et. al., 2013). The section 5 comprised several items related to techno-political factors (E.g. driving range: Degirmenci, K & Breitner, M. H. 2017; purchase price: self-developed; govt. policy incentives: Jiang, S., 2016; and resale value: self-developed and Thananusak et al., 2017). The items for dependent variable i.e. purchase intention were adapted form Jiang, S., (2016). All the construct domain and measurement items were discovered from the extensive review of existing studies and many questions were redeveloped and adapted to the specificity of this study.

Figure 1: Theoretical research model for electric vehicles usage intention.



III. Results & Discussion

Sample Description

As mentioned above 516 responses were selected for further tests. Table 3 shows that males constituted 51.9%, females 48.1% of the sample size. The greatest number of respondents are aged between 41 to 50 (27.9%) and 18 to 30 (24.8%) years. The level of education is well distributed as 86% are between 10th standard to post graduation. Based on the method of data collection, we claim the maximum possible representativeness of the population.

Table 2: Demographic information of the respondents (N=516).

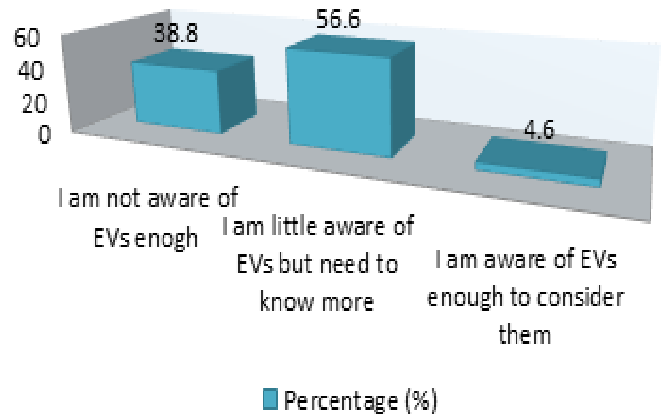
Variables	Frequency	Percentage (%)
Gender		
Female	248	48.1
Male	268	51.9
Age (years)		
Below 18	72	14.0
Between 18 to 30	128	24.8
Between 31 to 40	92	17.8
Between 41 to 50	144	27.9
50 Above	80	15.5

Education		
Up to 10th	120	23.3
12th	88	17.1
Graduate	100	19.4
Post Graduate	136	26.4
Doctorate and above	72	14.0
Income (household)		
Up to 5 lakhs	236	45.7
Above 5 lakhs to 15 lakhs	248	48.1
Above 15 lakhs to 30 lakhs	32	6.2

Awareness level towards EVs

To determine the awareness level of the respondents towards EVs, one statement was set under the first objective of the study. In response to a statement i.e. “Are you aware of EVs”, it was found that 38% were not aware of EVs enough, 56.6% were little aware of EVs and needed to know more while only 4.7% were aware of EVs enough to consider them. See figure 2. Respondents who selected the fourth option i.e. “I never heard of EVs” were already removed from the data list.

Figure 2: Awareness towards EVs.

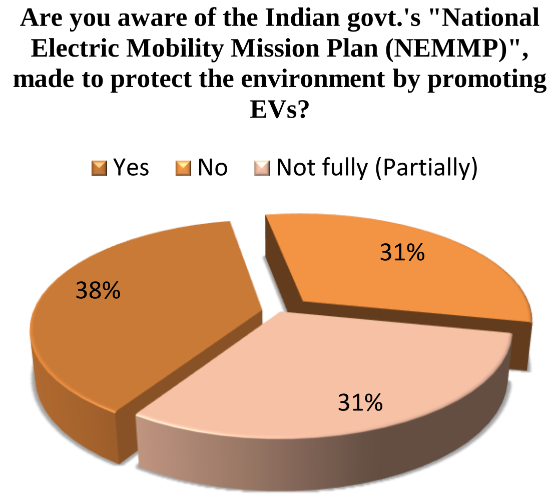


In line with the studies of Zhang Y et al. (2011), and Krause et al. (2013), the results of the present study concluded that almost 95% people do not possess enough knowledge about EVs to consider them. Many people have minimal knowledge about the technical characteristics of EVs, except that it will help reduce pollution. Worryingly only “One twentieth” of people revealed enough knowledge and awareness of EVs to consider them.

Awareness towards NEMMP

The second objective of the study was to find out the awareness level of the respondents towards Indian govt. policy i.e. “NEMMP”. Respondents were asked whether they were aware of NEMMP. It was found that about 38.0% respondents were aware of NEMMP while 31% were selected not aware and rest 31% also selected Not fully (partially) aware. It reflects that about 62% respondent were not fully aware of NEMMP. See figure 3.

Figure 3: Awareness towards NEMMP.



Clearly, the figures in the above described chart are expressing the unawareness of most Indians about the NEMMP. This is in line with the studies conducted by Diamond, 2009; Egbue & Long, 2012, claiming that mostly people still lack knowledge about the government incentives and support for EVs. Therefore, it is necessary for the Government of India to conduct a massive awareness campaign about NEMMP and electric vehicles and also involve automakers and marketers to contribute in making this awareness campaign ubiquitous because only then NEMMP will be effective and a large number of Indian potential car consumer will adopt EVs. In line with Wang Z et al. (2013) and Thananusak et al. (2017), the financial incentives given under NEMMP may reduce the perceived high price-premium of EVs in India.

Spearman’s rho Correlation

Prior to correlation testing among scale variables, several numerical and graphical tests of normality were performed to check for normality in the data distribution, confirming the data to be not normal. Subsequently, the Spearman’s rank correlations coefficient test was applied between each independent variable and dependent variable. Spearman’s rank correlations estimate the strength of the linear relationship between 2 variables. Correlation coefficients range from -1 (perfect negative correlation) to +1 (perfect positive correlation). The closer correlation coefficients get to -1.0 or 1.0, the stronger the correlation. If the correlation coefficient gets close to zero the weaker the correlation is between the two variables. If its Zero that means there is no correlation between 2 variables.

Table 3: Spearman's correlation coefficients matrix.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. EC	3.15	0.578	-								
2. PBC	3.57	0.681	.007	-							
3. SN	3.33	0.695	.020	.093*	-						
4. PR	3.19	0.743	.085	.155**	.475**	-					
5. LS	3.04	0.718	.014	.409**	.073	.298**	-				
6. DR	2.07	0.989	-.151	-.040	.028	.038	.024	-			
7. PP	2.77	0.975	-.048	.146**	.029	.062	.062	.276**	-		
8. GP&I	3.00	0.869	.030*	.153**	.153**	.486**	.377**	-.044	-.071	-	
9. RV	2.48	0.985	-.184**	.007	.008	.048	.060	.822**	.389**	-.077	-
8. UI	3.28	0.601	.379**	.100*	.213**	.175**	.060	-.233**	-.259**	.193**	-.285**

Notes:
N = 516; *p<0.05; **p<0.01; Minimum = 1; Maximum = 5.

EC=environmental concern; SN=social norms; PBC=perceived behaviour control; perceived risk=PR; lifestyle=LS; PP=purchase price; DR=driving range; GP&I=govt. policy incentives; resale value=RV; UI=usage intention (dependent variable).

Begin with sociocultural variables (under individual factors), a test of Spearman's correlation was performed to assess the relationship between environmental concern (EC) and UI (usage intention) of EVs. As hypothesized (H1), there was a strong and positive correlation between EC and UI, which was statistically significant, (r_s = 0.379; p = 0.01, H_1 accepted). The findings strongly supported the Hypothesis (1) of the study and indicated that EC was positively and significantly related with UI of EVs. This findings were in line with Degirmenci & Breitner, 2017; Wang Z et al., 2017; Habich-Sobiegalla, 2018; Wang N et al., 2018. Similarly, the correlation test result, applied to assess the relationship between perceived behaviour control (PBC) and UI of EVs, revealed a significant and positive correlation between PBC and UI, which was statistically significant, (r_s = 0.100; p = 0.05, H_2 accepted). The findings strongly supported the Hypothesis (2) of the study and indicated that PBC was positively and significantly related with UI of EVs. The findings were consistent with Wang, Y H et al., 2013 and Hamilton & Terblanche-Smit, 2018. Likewise, the correlation test result, applied to assess the relationship between social norm (SN) and UI of EVs, also confirmed a strong and positive correlation between SN and UI, which was statistically significant, (r_s = 0.213; p = 0.01, H_3 accepted). Hence the findings firmly supported the Hypothesis (3) of the study and indicated that SN was positively and significantly related with UI of EVs. The findings were consistent with two separate studies of Hamilton & Terblanche-Smit and Habich-Sobiegalla done in 2018. However, the result of correlation coefficient, initiated to evaluate the relationship between perceived risk (PR) and UI of EVs, which was found statistically significant but positively, (r_s = 0.175; p = 0.01, 'ns', H_4 not accepted). While the study hypothesised a significant but negative relation between them. Hence the study failed to accept the Hypothesis (4) and affirmed that PR was significantly but positively related with UI of EVs. The findings were in contrast with the study conducted in China by Wang N et al. (2018). Furthermore, the result of correlation coefficient, ran to evaluate the relationship between life style (LS) and UI of EVs, which was not found to be statistically significant, (r_s = 0.060; p = 0.060 > 0.05, 'ns', H_5 not accepted). While the study hypothesised a significant relationship between them. Hence, the study failed to accept the Hypothesis (5) and affirmed that PR was not significantly related with UI of EVs. See Table 3 for all Spearman's correlations.

The Spearman correlation test was also conducted to determine the nature of the relationship of all techno-political factors with the dependent variable (i.e. UI). Under techno-political factors, a test of Spearman's correlation was performed to assess the relationship between driving range (DR) and UI (usage intention) of EVs. The results revealed a significant and negative correlation between DR and UI, which was statistically significant, (r_s = -0.233; p = 0.01, H_6 accepted). This findings strongly supported the Hypothesis (6) of the study and indicated that DR was negatively and significantly related with UI of EVs. The findings were in line with Lebeau K et al., (2013) and Degirmenci & Breitner, (2017). Similarly, the correlation test result, initiated to assess the relationship between purchase price (PP) and UI of EVs, revealed a significant and negative correlation between PP and UI, which was statistically significant, (r_s = -0.259; p = 0.01, H_7 accepted). The findings strongly supported the Hypothesis (7) of the study and indicated that PP was negatively and significantly related with UI of EVs. The findings were consistent with Lebeau et al., (2013), Junquera B et al., (2016), and Park E et al., (2018). The correlation coefficient for govt. policy incentives (GP&I) & UI of EVs fond positive and statistically significant ($r_s = 0.193$; $p = 0.01$, H_8 accepted). Hence, the findings firmly supported the Hypothesis (H8) of the study and indicated that GP&I was significantly and positively related with UI of EVs. The findings were in line with Wang Z et al. (2017), Zhang H et al. (2018), and Sang and Bekhet, (2015). Finally, the correlation test result, applied to assess the relationship between resale value (RV) and UI of EVs, confirmed a significant and negative correlation between RV and UI, which was statistically significant, ($r_s = -0.285$; $p = 0.01$, H_9 accepted). This findings strongly supported the Hypothesis (9) of the study and indicated that RV was positively and significantly related with UI of EVs. The findings were consistent with Lim et al., (2014) and ÖZ, S. B., (2017). See Table 3 for all Spearman's correlations.

Kruskal-Wallis (K-W) and Mann–Whitney (M-W) tests

As the data was not normally distributed, some necessary non-parametric tests were conducted to assess the nature of the relationship of demographic factors on the electric vehicles UI. Regarding the different categories of age, the K-W test results ($H\ (4) = \chi^2$ 5.574; p = 0.233 >0.05, 'ns') revealed an insignificant difference between the different age categories and UI of EVs. The K-W test results (illustrated in table 4a) concluded that all categories of age had no significant effect on UI of EVs. Albeit, K-W test result for education level and UI ($H\ (4) = \chi^2$ 17.717; p = 0.001) concluded very significant difference between all categories of education and EVs UI (Table 4a). Further M-W test was applied to compare the variations between each categories of education level (Table 4b). As per the Mean Rank comparison, people with education level of graduate and above revealed high UI of EVs than the people with education level up to 10th and 12th. In line with the findings of Egbue & Long, (2012), Hackbarth & Madlener, (2013), and Bjerkan et al., (2016), the findings of present study also indicated that the higher the level of education, the higher the UI of EVs.

Table 4: Relation between demographic variables and EVs usage intention.

Table 4a: Kruskal-Wallis test (N=516).

Usage intention (dependent variable)

Variable	Chi-square value	df	N	Significance
Age	5.574	4	516	0.233
Education level	17.717	4	516	0.001
Annual Income	43.689	2	516	0.000

Table 4b: Mann-Whitney test.

Education level (Independent variable)

	Mean rank	N = 516	Z value	Significance
Up to 10th	98.10	120	-3.206	0.001
Graduate	125.38	100		
Up to 10th	111.37	120	-3.514	0.000
Post graduate	143.62	136		
Up to 10th	89.10	120	-2.419	0.016
Doctorate and above	108.83	72		
12th	100.41	88	-2.269	0.023
Post graduate	120.32	136		
12th	73.23	88	-2.224	0.026
Doctorate and above	72	89		

Table 4c: Mann-Whitney test**.**

Annual Income (Independent variable)

	Mean rank	N = 516	Z value	Significance
Up to 5 lakh	203.14	236	-6.095	0.000
Above 5 lakh to 15 lakh	279.95	248		
Up to 5 lakh	127.65	236	-3.962	0.000
Above 15 lakh	185	32		

Note: only significant relations are illustrated.

Similarly, the K-W test results for annual household income and UI ($H\ (2) = \chi^2$ 43.689; p = 0.000) revealed significant difference between all categories of annual household income and EVs UI (table 4a). Further M-W test was applied to compare the variations between each categories of annual household income (Table 4c). As per the Mean Rank comparison, people with annual household income of above 5 lakhs revealed high EVs UI than the people with annual household income of up to 5 lakhs. In line with Sang and Bekhet, (2015); OZ S B. (2017); and Wang N et al., (2018), this finding indicated that higher level of income leads to high EVs UI.

Table 5: Mann-Whitney test.

Gender (Independent variable)

	Mean rank	N = 516	Z value	Significance
Female	288.08	248	-4.378	0.000
Male	231.13	268		

In addition, the evidences of the Mann–Whitney test for gender and UI of EVs supported a significant difference between different categories of gender and UI (U= 25896; z = -4.378; p = 0.000). As illustrated in Table 5, apparently the UI of EVs was found higher in female (Mean rank = 288.08) than male (Mean rank = 231.13). In line with Egbue & Long, (2012); Sang and Bekhet, (2015); and Wang N et al., (2018), this study also confirmed that UI of EVs differs significantly between the categories of gender (i.e. female and male).

Other Findings

Demographic factors also have a significant impact on an individual's perception and attitude, along with the intention to use. Keeping this in view, in this study, some further tests were performed to confirm the effect of gender on environmental concern (EC), perceived behaviour control (PBC) and perceived risk (PR). The Mann-Whitney (U) test results revealed no significant difference between gender and EC (U= 32963; z = -0.160; p = 0.873 >0.05), indicating that both female and male are equally concerned about environment. Surprisingly, the test result for PBC and gender confirmed a significant difference (U= 23072; z = -6.069; p = 0.000), between males and females. The Mean rank comparisons indicated that females (Mean rank = 299.47) considered themselves more capable and comfortable in driving EVs than males (Mean rank = 220.59). Similarly, the test result for PR and gender showed a significant difference (U= 228632; z = -2.729; p = 0.006) between males and females. The Mean Rank comparison indicated that females (Mean rank = 277.05) perceived EVs more risk and hurdle free than males (Mean rank = 241.34) (refer Table 6).

Table 6: Mann-Whitney test.

Perceived behaviour control (Test variable) **Vs. Gender** (Groping variable)				
	Mean rank	**N = 516**	**Z value**	**Significance**
Female	299.47	248	-6.069	0.000
Male	220.59	268		
Perceived risk (Test variable) **Vs. Gender** (Groping variable)				
Female	277.05	248	-2.729	0.006
Male	241.34	268		
Note: only significant relations are illustrated.				

In addition, the present study assumed that the environment concerns (EC) would be higher in people with high education but the Kruskal-Wallis test result between different categories of education level and EC ($H (4) = \chi^2$ 6.851; p = 0.144 >0.05, 'ns') concluded that there was no significant difference in concern for the environment across all education categories. Eventually, a chi-square test of independence was performed to examine the relation between gender and the income. The relation between these variables was found to be significant with chi-square test value { X^2 (2, N = 516) = 86.890, p = 0.000}. Where, out of 268 male respondents, 168 (62.7%) were within the income group of "up to 5 lakh," whereas out of 248 female respondents 172 (69.4%) were within the income group of "above 5 lakh to 15 lakh", indicating female earning more than man. This further strengthened the significant relationship between income and UI of EVs shown in Table 4 & 4c, revealing the fact as to why females had a higher UI of EVs than males.

IV. Conclusion

This research was designed to assess the usage intention of Indian potential car consumer with regards to EVs. The results of this research will be beneficial for Indian potential car consumers, policy makers and auto manufacturers. This research should serve not only as a guide for vehicle manufacturers and marketers who intend to market EVs in the Indian market but will also encourage the government to tailor its incentives policies in a manner that best suits the potential consumer needs. Begin with the awareness level of EVs and NEMMP in Indians, on which further results of the study are based, it was found that most people lacks adequate knowledge of EVs, (specifically technical specifications) except that it is an eco-friendly car technology. Similarly, majority of the respondents were not fully aware of the incentives given under NEMMP. This revelation is an indication of great concern and may undermine all governmental and automakers expectations and plans of ensuring the mass scale adoption of EVs by the Indian people. It is therefore recommended that to prevent it from becoming a strong inhibitor and to achieve the goal of mass adoption of EVs by people in India, it is imperative for the Indian government to prepare a massive awareness plan for both EVs & NEMMP with effective involvement of automakers and marketers to make this awareness plan ubiquitous. The effect of socio-cultural factors in new technology acceptance is proven in previous studies. This study also revealed a significant effect on UI for EVs, especially environmental concerns which proven to be a strongest motivator of EVs UI followed by social norms and perceived behaviour control. Since mostly urban areas in India are polluted, it is obvious that people would have a high environmental concerns. The concern for environment is equal between female and male but male were more concerned about the risks, constraints, and self-efficacy associated with EVs. Now that environmental concern and social norms have proved to be strong motivators of adopting EVs, policy makers and automakers are recommended that the environmental and social beneficial aspects of EVs should be more exposed when promoting. The study found that women considered themselves more capable and comfortable of EVs driving than men. This is a good sign for all the stakeholders as most of the time women are very patient in adopting a new transport vehicle technology. Contrary to the study hypothesis, the revelation of a positive relationship of perceived risk with EVs UI gives another good indication to that Indian people do not consider EVs a risky new vehicle technology. The study's results also confirmed a strong effect of all the techno-political factors including purchase price, driving range, govt. policy incentive, and resale value on EVs UI like several existing studies.

The EVs initial purchase price, driving range, and resale value were the biggest inhibitors to EVs UI whereas government policy incentives was found as a motivator EVs UI. In our suggestion, the negative relation of the purchase price with EVs UI and the positive relation of GP&I with EVs UI gives a clear indication that the government should continue to provide substantial subsidy on EVs purchases till the cost of EVs (especially, battery cost) comes at par with conventional vehicles. In addition, the government should intensify its efforts related to raw material acquisition, infrastructure development, R&D, technology acquisition etc. to produce EVs with lower cost and higher driving range by automakers. As far as resale value is concerned, EVs need to build their strong hold in the Indian auto market as well as a strong trust in the Indian people, which is a time consuming process. However, in our opinion, the government should promote maximum EVs in public transport and implement manufacturer and consumer friendly *used/scrap EVs policy* to reduce this time consuming process. In line with many studies, demographic factors indicated a significant influence in EVs UI. The demographic variables, including gender, education, and annual income, were found to have a perfect correlation with the EVs UI whereas the age variable was found to have a negligible effect on the EVs UI. The result for education level and the EVs UI made an important conclusion that the higher the level of education leads to the higher intention to use EVs. Therefore, stakeholders are suggested to target mostly educated people during EVs promotion and awareness activities. Furthermore, intention to use EVs were high in people with high household income than the people with low household income. Other findings of the study showed that concern for the environment was similar in both men and women, there was no significant difference between all categories of education and environmental concern, and the intention of using EVs was higher in women than men because most of them belonged to the higher income category.

It would also be useful to mention some practical implications of EVs if they partially replace conventional vehicles and are able to hold their own in the auto market. The most important practical implication of EVs which is also a limitation of this study relates to its charging infrastructure. The charging facility/infrastructure is claimed to be a motivator for the adoption of EVs in several studies conducted in developed countries, but it can become a major problem in developing countries like India. Although EVs can be easily charged at home or personal space, most people in India who are able to purchase EVs live in unplanned colonies that are not able to provide parking and charging facilities. Accelerating the development of charging facilities and infrastructure should be a highest priority for all private and public stakeholders. Secondly, as the study found that Indian consumers are not fully aware of the government policy incentives (IE NEMMP), despite this, the Indian government keeps on changing its incentive scheme on EVs, which has led many Indian potential car consumers to become confused whether that they should adopt EVs or not. If EVs are to enter the Indian auto market on a mass scale, the government will have to provide a substantial and long-term incentive on their adoption. With EVs being a new product and technology in the Indian auto market, there is a need to create more trust in people and remove misconceptions about them. To overcome this, the government should promote more and more EVs in public transport so that people get used to EVs and over time their confidence in EVs will automatically increase. This study is subject to some limitation too, which will suggest some useful opportunities for further researches.The sample size for this study includes only targeted car users in Delhi & NCR so the results of this study may not be pertinent in the other regions. Future research in India, should specifically study early adopters group of buyers as well as compare the factors influencing the intention/adoption of EVs between adopters and non-adopters. There is serious dearth of studies on EVs in India, future researches are suggested to conduct more studies in different-2 states/regions in India to reveal the diverse impact of influencing factors on consumer intention towards EVs. An EV is a new concept in India compared with western countries and China, therefore future studies should focus more on the consumer intention rather than purchase. The collective findings of this and other studies will not only help automakers to make more consumer centric electric vehicles but also educate policy makers to understand Indian prospect consumer needs and wants so that incentives & policies could be mold as per the requirement of the Indian potential car consumer.

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SALESPERSONS PERFORMANCE PREDICTOR MODEL: AN EXPLORATORY FACTOR ANALYSIS

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***Purpose**: Getting answer for a corporate that where its current stand in the industry is important for the strategy making, especially for the sales team. Few academic researches charted direction towards cross-functional sales factors, but getting answer whether we can quantify that sales performance and identify what is the numeric benchmark value, is difficult. For the companies to understand the need to focus on which cross-functional factors and when, is also difficult. The purpose of this research is to identify the cross-functional factors and their impact after Exploratory Factor Analysis (EFA), especially in B2B context, and constructing a predictive model to interpret and quantify the influences (sales performance score) specifically to the IT/ITes companies.*

***Methodology**: A quantative approach was employed with a field survey (10 months duration), 11.57% conversion ratio, with 35 questions addressing 33 indicators, and response was collected from 310 sales professionals randomly from 90+ IT companies. Respondents were all sales professionals between 1 year to more than 10 years of experience. Three items were removed as outliers using "Mahalanobis Distance Test" for Multivariate analysis (p< .001), dropped two variables by 'Missing value Not at Random' (MNAR) analysis and considering similar two variables asked as closed ended questions.*

***Data Analysis**: Researchers identified final 15 (out of 33) determinants of cross-functional sales performance indicators forming 4 (four) best factors with very high reliability (Cronbach α = 0.853), applying Exploratory Factor Analysis (EFA) with KMO (0.787), Bartlett's χ^2 (1544.093), p <.001, Principal Component Analysis (extraction method), and Varimax (Rotation Method) with Kaiser Normalization. After Confirmatory Factor Analysis (CFA), using Onyx platform, researchers established a statistical model to predict the sales performance for the IT companies.*

***Findings:** Focusing on these identified factors companies can understand what is preventing its salesforce from giving their best performance. We contribute in creating a predictive model and computing a sales performance score, based on the final factor loading values. This would be unique and unprecedented to measure the current industry performance benchmark by quantifying its company specific at the moment performance standard value, for better strategic support towards the achievement of desired sales performance in business-to-business (B2B) sales environment.*

***Originality/ Value**: Easily identifying, and focusing on these identified factors companies can improve its sales performance. Researchers contribute in creating a statistical model and computing a sales performance score, based on the final factor loading values, is be unique and unprecedented to measure the current industry performance by quantifying its standard, or benchmark value, for better strategic support towards the achievement of targets. This will help companies in advance to take the strategic measurement against a high fall of revenue measuring the sales performance with this predictive model. This is niche and exploratory research backed by confirmatory factor analysis.*

Keywords: Sales performance, cross-functional factors, Principal Component Analysis, Strategy, B2B sales, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis, Salesperson's performance, MNAR, Mahalanobis Distance test for outliers, Multi variate Analysis, Sales performance score, Statistical model, predictors

JEL Classification: M10

I. Review of Literature

Information technology outsourcing started in 70's time in India with the then Patni Computer Services (PCS) with manpower outsourcing to abroad. After that the IT boom in 90's during the initial globalization period India experienced the demand of Information Technology and its related services. Hence, a new breed of sales people evolved to make sales of IT products and services. Most of the sales people globally do not achieve their targets. A salesperson is the only direct link between customer and company (Krishnan B et. al., 2002). Churchil et al. (1985) "the determinants of salesperson performance", and the antecedents of sales performance, is based on the meta-analysis for the period 1918- 1982 (76 years

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of previous research work). The author suggested five factors that influences a salesperson's job behavior and performance along with different categories like skill level, role perceptions, motivation, aptitude, personal factors, and organizational factors with three moderators (Walker et al. 1977 and Churchil et al.,1985).

Managers are now focused to customer satisfaction (Szymanski et. al., 2001). Mohan V. Tatikonda et. al. (2001) shows the organisational process factors are linked to the achievement of operational outcome targets for quality, cost, and development capabilities (Mohan V. Tatikonda et. al., 2001). Quareshi Khanam Tahira opined that Marketing approaches depends on completely on the consumer's opinion. Rentz et. al. (2002) argue that the high number of researches focused on selling skills after Churchill et al. (1985). Rentz et. Al (2002) present a model & scale on selling skills based on the sales literature and report. Surely, Human Resource department plays and important role on sales person's performance (Rentz et. al., 2002). Churchill et al. (1985) scientific analysis based on the previous available data (meta-analysis), covered the field of sales performance research from 1918 to 1982, to gain insights of sales-performance determinants of the past 25 years across empirical research models. Willem Verbeke et. al. (2011) focused literature after the period, assessed and analyzed correlations between antecedents, and provided a two-stage SEM to identify the effects of determinants on sales-performance. This was the basic model made-up based on the secondary research and not the primary research.

Cross selling service climate provides very important boundary condition, which affects both its formation and its impact on service sales performance (Yu, Ting, de Ruyter et. al, 2018). Organizations facing increasing complex customer requirements (Grewal et al., 2015; Tuli, Kohli, & Bharadwaj, 2007; Ulaga & Kohli, 2018). The factors affecting salesforce performance in rural or urban areas are the notable driver for any organizational success (Neema Geeta et. al., 2015). Cross-functional items like reasonable sales target setting, pre-sales, branding, marketing, product knowledge, incentive achievement, company image, branding and many may put effect on the performance of the company. These are the indicators, which influence the overall sales performance, and the core problems that hold sales people back from hitting their target and the revenue for the company. The sales function is undergoing through unquestionable transformation, since ages, from an immature form to more distinct stages (Thomas w Leigh et. al., 2001). Today's matured IT (es) industry from 90's back office image is a result of many internal/ external reasons (S. Annapoorna et. al., 2009).

In the following table, the antecedents are mentioned found in literatures for research help:

Table 1: Research indicators Specifics list.

Indicators/ Items	Source
Reasonable target settings	Leon Met. Al., 1998
Lead generation support	Researcher Pre Test
Work Engagement	Willem Verbeke et. Al.,2011
Product/service Knowledge	Willem Verbeke et. Al.,2011
Sales achievement	Thomas W Leigh et. Al., 2001
Unit cost	Mohan V Tatikonda, 2001
Product/ Service quality	Mohan V Tatikonda, 2001
Market competition	Ford et. al., 1983
Product acceptance	Researcher Pretest
Pre sales support	Thomas W Leigh et. Al., 2001
Sales targets	Willem Verbeke et. Al.,2011
Commercial/legal approvals	Dawn R. Deeter-Schmelz, 2020
Customer satisfaction	Mohan V Tatikonda, 2001, Agnihotri et. al, 2017
Customer feedback	Thomas W Leigh et. Al., 2001, Dawn R. Deeter-Schmelz, 2020
complain handling (Technical/Quality)	Yu, Ting, de Ruyter et. al, 2018
Incentive achivement	Dawn R. Deeter-Schmelz, 2020
Branding	Researcher Pre Test
Sales incentives structure	Nema Geeta et. al, 2015; S. Annapoorna et. al., 2009; Dawn R. Deeter-Schmelz, 2020
Job Satisfaction	Nema Geeta et. al, 2015
Functional alignment	Nema Geeta et. al, 2015; Sarah Holland et. al.; and, charchil G.A, 1985
Team accountability	Nema Geeta et. al, 2015; Sarah Holland et. al.; and, charchil G.A, 1985
Team co-location	Nema Geeta et. al, 2015; Sarah Holland et. al.; and, charchil G.A, 1985
Road blockers / Toxic employees	Researcher Pretest
Organisational politics	Researcher Pretest
Job Security	S. Annapoorna et. al., 2009
Contribution recognition	Nema Geeta et. al, 2015
Relationship with Superiors	Nema Geeta et. al, 2015, Dawn R. Deeter-Schmelz, 2020
Unproductive meetings	Researcher Pretest
Business Culture	CII-PwC report, 2010
Company Image	Dawn R. Deeter-Schmelz, 2020
Micro management of Boss	Researcher Pretest
Top management's Micro management	Researcher Pretest

Research Gaps & Theoretical contribution

1. No previous study to find out the relationship between the cross-functional factors and Sales person's performance particularly in IT companies.
2. There is a definite need to find out a statistical predictive model to quantify these factors' value, and an arithmetic 'sales-performance score' to quantify and compare the industry standard/benchmark value.

Hypothesis

This is an exploratory research and the focus is for statistical model building after Exploratory Factor Analysis (EFA), and confirmatory factor analysis (CFA). Hence, there is no specific hypothesis to test, only to model building, and to understand the effect of sales performance score for conclusion.

II. Research Design & Methods

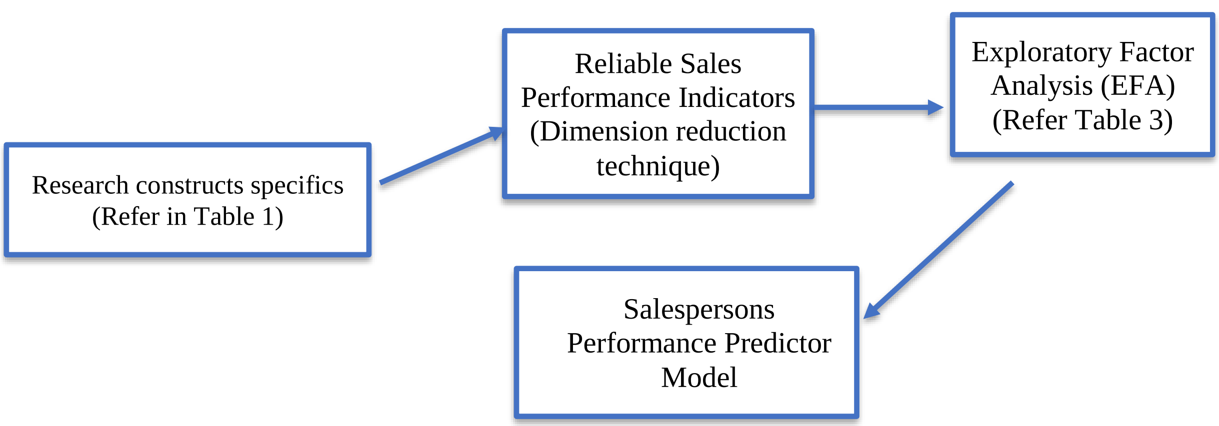
The primary data collection through questionnaire method. Researcher approached through social media, and the google form link to connect the sales professionals, other than the traditional questionnaire method in random manner. However, researchers have no hesitation to say that the multiple follow-ups were required to get finally 310 number of B2B sales people responses as sample size. Variable reduction technique is used to reach to do Exploratory Factor Analysis (EFA), and confirmatory Factor Analysis (CFA).

Software used for Data Analysis:

For initial data formatting, Statistical Data Analysis and Exploratory factor analysis SPSS is used. To build the predictive modelling the **Ωnyx** data analysis software is used for MacOS operating System.

Data Analysis Framework

Figure 1: Data analysis framework diagram.



III. Results and Discussion

Survey return rate & Scale: 332/2769 responses from online (google form, email, LinkedIn survey) and offline survey in total with 12.29% return rate, but out of which 310 were considered (effective rate 11.49%) for the final study.

Missing Data Analysis: During data collection, it was found that salespeople avoided to give the actual sales targets and achievements in monetary values. Sales achievement & Sales Target, actual values are "Missing Variable Not at Random" (MNAR), with no pattern detected, Donders et. al. (2006) & Schafer et. al (2002). Anticipating this in questionnaire two similar closed ended questions were included (Sales target & Sales achievement) and all the responded registered their response against the Likert type scale options (Carifio, J. & Perla, R. (2007) & Glass, Peckham, and Sanders (1972)). Hence, researchers decided to drop the responses of these two questions from the analysis. Other than these two questions, all other relevant questions were mandatory and hence, there was no missing data in the data response set.

Multivariate Outlier Analysis:

Researchers chose to follow **Mahalanobis Distance Test** (threshold value $p <= .0010$), (Tabachnick, & Fidell, 2013). Three ($p=.0014$, as very close to the threshold value of 0.0010) multivariate outliers were identified and removed from the data analysis.

Multivariate Normality Analysis: Having 33 individual variables, researchers intended to do multivariate normality analysis. Researchers followed Kurtosis (0.139) & Skewness (0.277) value would be less than double of the standard error, (Peter Samuels), as Kim (2013) mentioned, that the K-S, and

S-W tests are "unreliable" with big samples (> 300). In essence, they are too "sensitive". Mayers (2013, p. 53); doubling the value we get 0.278 (skewness), and 0.554 (kurtosis) acceptable values to consider the normality. It is true that few variables violets the above rule, slightly skewed data is also okay for factor analysis (ResearchGate).

Pre-Factor analysis check

a) ANOVA result shows the effect of company type on sales achievement in MNC, Non-MNC and Start-Up is not significant p= .207 (which is p > .05), but the data is homogeneous (null hypothesis accepted) and Both 95% confidence value (lower/ upper) none is Zero (0), hence, reliable.
b) EFA technique is used to explore the underlying structure of the sales performance. Correlation matrix determinant is +ve (0.001) reliable; KMO value (0.765) is > 0.70. All the anti-image value is > 0.5 (min =0.49 and Max=0.88) and hence the sample size is adequate for each variable for factor analysis.
c) Also, Bartlett's test of Sphericity shows it is significant (.001), it means the correlation Matrix is not identity Matrix, and all the communalities (extraction value) is >0.5 (min = 0.49 Max= 0.743) which is good for factor analysis (ResearchGate) Analysis shows tentative 06 factors, have emerged, before factor analysis, considering % of variance value > 5% along with the eigen value > 1.0 to form a sound factor, contributes sales performance variance of 66.856% with 18 items (α = 0.853). Any value > 50% is good and if it goes to 70% and more that is excellent (ResearchGate).
d) 'Scree plot" flattened from 5th. Factor in graph. we can derive 4 meaningful factors.

Exploratory Factor Analysis Result & Discussions

a) Principal component analysis method is used as researchers main idea is to find out the meaningful conclusion of the latent variable, sales performance. This method is widely used in factor analysis.
b) After final exploratory factor analysis, 04 factors have emerged with % of variance value > 5%, Eigen value > 1.0.
c) Correlation matrix determinant is 0.006 (+ve), KMO (0.787), all the anti-image value > 0.5 (min =0.49 and Max=0.88), Bartlett's test of Sphericity (1544.093) is significant (.001), all the communalities >0.5 (min=0.49 Max= 0.730).
d) There is no cross-factor loadings and Cronbach's alpha values for all the factors are in acceptable range. Hence, reliable.
e) Together contributes sales performance variance of 59.856%.

Table 2: Results of Exploratory Factor Analysis (N =307).

	Adaptiveness (1)	Selling- Efficacy (2)	Support (3)	Forces (4)
Job Satisfaction	**.733**	.235	.332	.164
Relationship with boss	**.694**	.106	.071	.256
Team Accountability	**.694**	.031	.112	-.052
Reasonable Target	**.630**	.286	.259	-.097
Lead Generation	.370	**.755**	-.133	.072
Work Engagement	.239	**.680**	.121	.294
Sales Achievement	.156	**.661**	.235	.031
Product price	-.228	**.574**	.446	.040
Complain handling	.241	.082	**.718**	.179
Product quality	.226	-.016	**.690**	.045
Incentive Achievement	.044	.425	**.615**	-.093
Incentive structure	.390	.298	**.580**	.062
Unproductive meetings	.120	.056	.037	**.738**
Branding	-.235	.008	.262	**.715**
Product Knowledge	.330	.249	-.155	**.639**
% Variance Explained	31.525	10.360	9.891	8.081
Eigen Value	4.729	1.554	1.484	1.212
Cronbach's Alpha	0.75	0.70	0.73	0.55
KMO= 0.787, Bartlett's χ^2 = 1544.093, p <0.001, Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

So, Sales Performance = f (4 identified Cross-functional factors) = f (15 identified variables);

Salespersons performance Predictor Model

The above result is used for the model construction. From this an important idea emerges to form a model with the final determinants (mentioned in Table 3) to calculate the 'Salespersons Performance Score' (Maybe also called as "Sales Achievement Score" of salespeople in a company, interchangeable) expressed as a score (computing a new variable, Unitless) for each set of formative indicators/items (variables). This score could be a sum, a constant value ($\beta 0, intercept$), an total error term (è) and multiplication value of each indicator average value (Xi) with factor loading score (βi , weighted scoring) (StatWicki,20).

Salespersons Performance Score = $\beta 0 + \sum_{i=1}^{15} \beta i.$ Xi + è ; ________ (1)

Now to calculate the score, salespersons performance (Sales Achievement) we need to find out the constant term (Table 5) and the error term (Figure 2). The factor loading value (Table 3), indicator mean (Table 4) can be calculated from the final data set of 15 determinants.

Hence, from equation (1) we get,

Salespersons performance Score = 48.331 + 37.8944022 + 0.59 = 85.9438944 _____ (2)

*The following diagram represents the Sales Achievement model analyses in **Ωnyx** software.*
Here, unstandardised, and Standardised the values (into the first parenthesis) are shown.

Figure 2: Sales Achievement of a salesperson and cross functional indicators relations model.

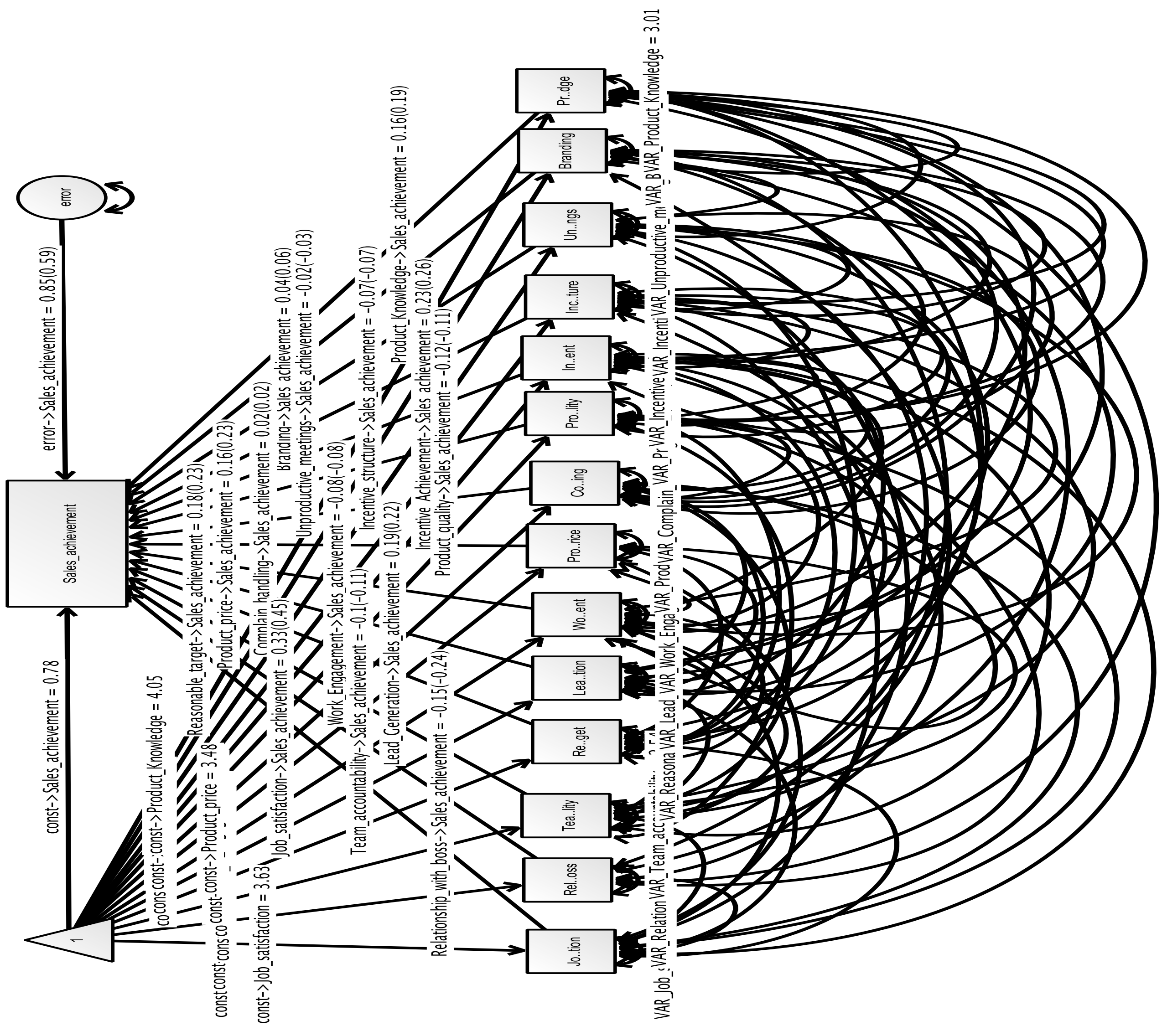


Table 3: Estimate Summary model table in **Ωnyx** output.

	Job_satisfaction	Relationship_with_boss	Team_accountability	Reasonable_target
Min.	1.00000	1.00000	1.00000	1.00000
1st Qu.	3.00000	3.00000	3.00000	3.00000
Median	4.00000	4.00000	4.00000	4.00000
Mean	3.63192	3.81759	3.47883	3.25733
3rd Qu.	4.00000	5.00000	4.00000	4.00000
Max.	5.00000	5.00000	5.00000	5.00000
Stdv	1.01525	1.06302	1.03313	1.09167
Total	307	307	307	307
Missing	0	0	0	0

	Lead_Generation	Work_Engagement	Sales_achievement	Product_price
Min.	1.00000	1.00000	1.00000	1.00000
1st Qu.	3.00000	3.00000	3.00000	3.00000
Median	4.00000	4.00000	4.00000	4.00000
Mean	3.65147	3.67752	3.54723	3.47883
3rd Qu.	5.00000	4.00000	4.00000	4.00000
Max.	5.00000	5.00000	5.00000	5.00000
Stdv	1.19873	1.00501	1.08173	1.07347
Total	307	307	307	307
Missing	0	0	0	0

	Complain_handling	Product_quality	Incentive_Achievement	Incentive_structure
Min.	1.00000	1.00000	1.00000	1.00000
1st Qu.	3.00000	4.00000	2.00000	3.00000
Median	4.00000	4.00000	4.00000	3.00000
Mean	3.80130	3.92508	3.25407	3.29642
3rd Qu.	5.00000	5.00000	4.00000	4.00000
Max.	5.00000	5.00000	5.00000	5.00000
Stdv	1.07691	0.90978	1.34089	1.02266
Total	307	307	307	307
Missing	0	0	0	0

	Unproductive_meetings	Branding	Product_Knowledge
Min.	1.00000	1.00000	1.00000
1st Qu.	3.00000	4.00000	4.00000
Median	4.00000	4.00000	4.00000
Mean	3.70684	4.15961	4.04560
3rd Qu.	4.00000	5.00000	5.00000
Max.	5.00000	5.00000	5.00000
Stdv	1.00589	0.89146	0.94170
Total	307	307	307
Missing	0	0	0

Table 4: Estimate Summary model table in **Ωnyx** output.

#	name	From / To	Estimate	Std.Error
0	VAR_Job_satisfaction	Job_satisfaction <-> Job_satisfaction	3.90162	0.21565
1	VAR_Relationship_with_boss	Relationship_with_boss <-> Relationship_with_boss	5.59530	0.31750
2	VAR_Team_accountability	Team_accountability <-> Team_accountability	2.53958	0.12537
3	VAR_Reasonable_target	Reasonable_target <-> Reasonable_target	3.42566	0.17974
4	VAR_Lead_Generation	Lead_Generation <-> Lead_Generation	2.79721	0.14338
5	VAR_Work_Engagement	Work_Engagement <-> Work_Engagement	2.09097	0.08407
6	VAR_Product_price	Product_price <-> Product_price	4.47114	0.27735
7	VAR_Complain_handling	Complain_handling <-> Complain_handling	1.98308	0.07801
8	VAR_Product_quality	Product_quality <-> Product_quality	1.89056	0.07082
9	VAR_Incentive_Achievement	Incentive_Achievement <-> Incentive_Achievement	2.73269	0.13900
10	VAR_Incentive_structure	Incentive_structure <-> Incentive_structure	2.21872	0.08998
11	VAR_Unproductive_meetings	Unproductive_meetings <-> Unproductive_meetings	3.33597	0.18956
12	VAR_Branding	Branding <-> Branding	3.43615	0.20208
13	VAR_Product_Knowledge	Product_Knowledge <-> Product_Knowledge	3.00506	0.16216
14	error->Sales_achievement	error --> Sales_achievement	0.84610	0.03415
15	Product_Knowledge->Sales_achievement	Product_Knowledge --> Sales_achievement	0.15882	0.06298
16	Branding->Sales_achievement	Branding --> Sales_achievement	0.04458	0.06215
17	Unproductive_meetings->Sales_achievement	Unproductive_meetings --> Sales_achievement	-0.02060	0.05488
18	Incentive_structure->Sales_achievement	Incentive_structure --> Sales_achievement	-0.06506	0.07430
19	Incentive_Achievement->Sales_achievement	Incentive_Achievement --> Sales_achievement	0.23104	0.04533
20	Product_quality->Sales_achievement	Product_quality --> Sales_achievement	-0.11552	0.06589
21	Complain_handling->Sales_achievement	Complain_handling --> Sales_achievement	0.02313	0.05964
22	Product_price->Sales_achievement	Product_price --> Sales_achievement	0.16015	0.05379
23	Work_Engagement->Sales_achievement	Work_Engagement --> Sales_achievement	-0.07567	0.07007
24	Lead_Generation->Sales_achievement	Lead_Generation --> Sales_achievement	0.19278	0.05627
25	Reasonable_target->Sales_achievement	Reasonable_target --> Sales_achievement	0.17839	0.06089
26	Team_accountability->Sales_achievement	Team_accountability --> Sales_achievement	-0.10240	0.05743
27	Relationship_with_boss->Sales_achievement	Relationship_with_boss --> Sales_achievement	-0.14784	0.06059
28	Job_satisfaction->Sales_achievement	Job_satisfaction --> Sales_achievement	0.33034	0.07669
29	const->Job_satisfaction	mean Job_satisfaction	3.63192	0.11273
30	const->Relationship_with_boss	mean Relationship_with_boss	3.81759	0.13500
31	const->Team_accountability	mean Team_accountability	3.47883	0.09095
32	const->Reasonable_target	mean Reasonable_target	3.25733	0.10563
33	const->Lead_Generation	mean Lead_Generation	3.65147	0.09545
34	const->Work_Engagement	mean Work_Engagement	3.67752	0.08253
35	const->Product_price	mean Product_price	3.47883	0.12068
36	const->Complain_handling	mean Complain_handling	3.80130	0.08037
37	const->Product_quality	mean Product_quality	3.92508	0.07847
38	const->Incentive_Achievement	mean Incentive_Achievement	3.25407	0.09435
39	const->Incentive_structure	mean Incentive_structure	3.29642	0.08501
40	const->Unproductive_meetings	mean Unproductive_meetings	3.70684	0.10424
41	const->Branding	mean Branding	4.15961	0.10580
42	const->Product_Knowledge	mean Product_Knowledge	4.04560	0.09894
43	const->Sales_achievement	mean Sales_achievement	0.78083	0.39277

Model (prepared in Ωnyx) Validity Check

Generally, for AMOS, or Smart-PLS software the result interpretation is different than Ωnyx software. Baggozzi, quoting various writers recommends the following standards for assessing adequate fitness of SEM models; Chi- squared *p*-value≥0.95, CFI≥0.95, and SRMR≤.08, RMSEA ≤.10 "good" ≤ .05 "very good" (Schumacker & Lomax, 2010).

"Overall model fit metrics – Be wary indications of a good fit!", Importantly, we need to keep it in mind that the researcher used **free Ωnyx** software for the model building exercise. A typical set of model fitting statistics is shown opposite for the morality model obtained from the free Ωnyx software, Robin Beaumont (2018). Refereeing table 6, the chi-squared actual value (2434.722), larger value meaning that we would have a *p*-value approaching to 1, indicating a good fit. The AIC (14401.18) and BIC (14567.647) measures are used to compare models where larger values indicate a better fit. The overall model fit measures indicate a well-fitting model with CFI =0.0 (good fit CFI<0.95) and RMSEA=0.29 (RMSEA>.05 very good fit)

Table 5: Estimate Summary model table in **Ωnix** output.

Observed Statistics	: 135
Estimated Parameters	: 44
Non-Missing Ratio	: 1.0
Number of Observations	: 307
Minus Two Log Likelihood	: 14313.18
Log Likelihood	: -7156.59
Independent -2LL	: 13457.702
Saturated -2LL	: 11878.458
χ^2	: 2434.722
Restricted Degrees of Freedom	: 91
AIC	: 14401.18
AICc	: 14416.18
BIC	: 14565.162
BIC (sample-size adjusted)	: 14567.647
Kulback-Leibler to Saturated	: 7.931
χ^2 from independent	: 1579.244
Degrees of Freedom (indep.)	:105
RMSEA (df corrected)	: 0.29
RMSEA (Kulback Leibler)	: 0.29
RMSEA (classic)	: 0.29
SRMR (covariances only)	: 0.195
CFI (to independent model)	: 0.0
TLI (to independent model)	: -0.834
Timestamp	: 6.9.2020, 11:24:48
Runner Individual Time	: 0.491167463
Wall Clock Time	: 130.573975884
Runner Time at convergence	: 0.272746468
Wall Clock at convergence	: 0.349470759

This estimate is the best found.
This estimate is reliably converged.

Implications & Further Scope of research

1. Business down due to recession, global pandemic, terrorism, earthquake, war etc. are not considered during this analysis and study. Only the cross-functional reasons for natural business down have been considered and analyzed

2. Sales Performance Score (SPS) cannot be applied other than IT/ITes companies to measure the performance and for the internal improvement.

Theoretical contribution, Conclusion:

1. A measurable Sales performance score is calculated. This is an important benchmark, which reveals the company performance and indicated the factors to be focused on for improvement.
2. The sale performance score is unitless and it is not the sales achievement value/ revenue, generally, expressed in monetary terms.
3. The Salespersons performance score (85.9438944) means this value is the standard acceptable value across the IT/ITes companies for salespeople achieving their sales. Less than this value in any corporate meaning their exists some undue cross-functional factors which is affecting adversely and the sales environment in the company is not favorable for salespeople to achieve their targets. More than this threshold value is always good and it means that particular company salespeople are better than other salespeople in the industry in terms of sales achievement, which is good for the company.
4. This score is like is the grade through which we can measure the performance. For an example, if any student gets 65% marks (which is more than 60%) we may say the student is good apparently, as he has received first class marks.
5. It means, if we found (after survey, collecting data from an IT company, and data analysis) that the score is (Say) 72.576 (which is less than 85.9438944) then that company should have some cross functional factors (among identified four factors) influence because of which company sales performance is bad (comparing to the industry standard) and there is a chance of improvement. Similarly, if the sales performance score is 92.8982 (which is more than 85.9438944) then we may say that company sales performance is better; all other cross-functional factors are good and supportive for the sales persons to make the effective sales.
6. At the micro level, we can also identify actually, which factor is supportive and which factor is not supportive for the sales and companies can take measurable actions on that particular factor. This is an important observation by which company gets benefited.

Applications in Corporate

1. If companies can focus and try to minimize the negatives of identified four factors (15 cross-functional variables) then sales person's performance will be increased. All four

factors here are positive factors, meaning it will have a direct impact on sales performance. If the magnitude of one factor changes then sales performance will change accordingly.

2. The arithmetic value of sales performance (Score) which will decide the IT/ITes company performance standard/ benchmark so that one can understand when exactly a company needs to focus the required changes, and for which cross-functional department precisely, which will be a good sign to manage their strategic portfolio and enhance company growth.

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VALIDATION OF SPIRITUALITY AT WORK SCALE IN INDIAN CONTEXT

Puja Khatri* Pragya Gupta**

Purpose *– This paper is first attempt to validate the spirituality at work scale developed by Kinjerski & Skrypnek (2006) in Indian context as so far it has been primarily tested successfully in US, Canada and Thailand.*

Design/methodology/approach *– A questionnaire-based survey was designed for data collection from employees working in IT and ITES sectors in Delhi-NCR. The sampling technique followed for this study was purposive sampling. Confirmatory Factor Analysis using AMOS version 20.0 was conducted to test the validity and reliability of the factorial structure of workplace spirituality.*

Findings *– The findings show that only a part of scale developed in western country was found appropriate along with an additional measure of organizational spirituality. The scale demonstrated adequate statistical reliability and validity, producing excellent fit for the overall SAW measurement model*

Research limitations/implications *– The study was able to produce strong empirical evidence for confirmation of SAW as a higher order latent construct, which is important considering that these findings may help in acceptability of workplace spirituality in academics and practice.*

Practical implications *– As the scale demonstrated good discriminant & convergent validity and acceptable internal consistency; scholars using this scale for future researches can be confident about the accuracy of the scale in capturing the intricate and ethereal essence of workplace spirituality.*

Originality/value *– This paper is probably the first attempt of validating the spirituality at work scale in Indian work settings, thereby an important contribution towards advancing the measurement development for the field of workplace spirituality.*

Keywords: Workplace spirituality, discriminant validity, reliability, confirmatory factor analysis.

JEL Classification: D23

The inevitable role of spirituality in human lives is something that has been consistently established all across the world cultures and civilizations. People around the world have always believed in some higher power or transcendental existence much beyond the human realms, which has guided them whenever needed. Similarly, the interest in the study of spirituality at workplace has also been gaining momentum increasingly during the past two decades (Milliman et al., 2003, Giacalone and Jurkiewicz, 2003; Karakas, 2010).

Spirituality in organizations has been emerging as a significant prototype in organizational and theoretical perspectives (Bosch, 2009). On the other hand, Langton et al.(2013) emphasized that spirituality is one of the key issues in the study of contemporary organizational behavior. Organizations today have realized the spiritual side of human beings (Ashmos & Duchon, 2000; Giacalone and Jurkiewicz, 2003; Marques, Dhiman & King, 2007) and that they must offer the employees meaning in what they so or who they are as an organizational member in order to harness their full potentials (Anthony, 2015). This realization is also endorsed by the fact that the universities have introduced courses on management and spirituality, publication of special issues of peer-reviewed acclaimed journals like Leadership Quarterly (2005) and two editions of Journal of Organizational Change Management (1999 & 2003) and the development of interest groups among the academy like Academy of Management (AOM). The mounting interest in spiritual issues in academic world was recognized by establishing a 'Management, Spirituality and Religious Interest Group' (MSR Group) in 1999 as a separate division within the American Academy of Management (Brown, 2003). Literature is interspersed with various notions on why the interest in workplace spirituality has surged in recent times. A few scholars have attributed it to the radical changes in the nature of work due to phenomena like globalization, restructuring, reengineering, downsizing, instability in work settings and increased workplace conflicts (Mitroff, Mason and Pearson, 1994; HRDC, 1997; Leigh, 1997). Ethical and governance failures like Enron, Lehman, Satyam Computers,

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Kingfisher, etc. have shifted the focus back on conducting business with righteousness (Mitroff & Denton, 1999; Biberman & Whitty, 1997; Giacalone & Jurkiewicz, 2003). This surging interest in the topic is an idea that has come of its time; in fact, it addresses quite a number of activities related to personal development, compassion, meaning and purpose at work, joyfulness, honesty, commitment and general welfare of the employees (Petchswang & Duchon, 2009).

Despite concerted efforts of the academic community and corporate sector, most available studies have been largely conceptual or notional in nature (Lund Dean, 2004). It is also disconcerting to note that not much work in workplace spirituality has taken place in India, which is thought to be seat of ancient spiritualism and have attracted many business stalwarts like Jobs, Zuckerberg, etc. Jobs is said to have acquired the insight to found Apple only after he visited India in search of connect with mission in life. Similarly, Zuckerberg, after being stimulated by Jobs's experience with India; travelled for almost a month, took inspiration on how to connect people, and made Facebook, a hugely successful venture. It thus makes sense to examine how workplace spirituality may help Indian corporate world come out in the open and outshine by creating superior workplace environment.

It is important to note that any scientific systemic inquiry of any construct is not complete unless it is defined and measured accurately. However, spirituality is perhaps still one of the least understood and underutilized stream of study till today as it invokes different meanings for different people. Some scholars believe in addressing personal spirituality as a part of religion (Sheep, 2006) and therefore concede significant correlations between the two constructs (Bryant, 2007).

Garcia-Zamor (2003) reasoned although the beliefs in spirituality and religious beliefs have similar connotations yet they are not identical; also they may or may not coexist in an office setting. Whatever may be the case, it is important to comprehend the differences between the two. Furthermore, the problems faced by academicians in conceptualizing workplace spirituality construct has in turn opened up a bigger challenge in finding out suitable ways to measure it. Lack of a reliable, valid and universally acceptable instrument of workplace spirituality having cross-cultural generalizability has made it difficult for the researchers to examine the theoretical propositions empirically.

There have been a few attempts of developing measures for examining workplace spirituality (Ashmos and Duchon, 2000; Sheep, 2004; Kinjerski & Skrypnek, 2006) but they have been primarily done with western samples. Petchasawang & Duchon, (2012) developed a scale in Buddhist cultural settings that was tested in Thailand, which is more oriented towards practicing mindful meditation at workplace and the spiritual orientation of such employees is assumed to be at a very advanced level. Since not many empirical studies on workplace spirituality have been conducted in India, the present study attempts to provide an Indian cultural context to test the generalizability of "individual spirituality at work" scale conceptualizing workplace spirituality as an individual perception as given by Kinjerski & Skrypnek (2006). This scale was preferred in the current study as Kinjerski & Skypnek (2006a) highlighted the need for further psychometric analysis of their scale by testing it on different samples from different cultural settings, and there had been evidences of it to work adequately in the Asian context (Tevichapong et al, 2010).

Theoretical Foundation

Many scholars like Ashmos & Duchon (2000), Pawar (2008) and Roof (2015) have underlined that theory development in workplace spirituality is at a seminal stage, although the concept is not new (Driscoll and Wiebe, 2007) and its perspective is grounded in organization and management theory. The term "spirituality" has different meanings to different people, as it is a complex concept to comprehend; so its not surprising to see that there is no consensus on the definition of spirituality (Markow & Klenke, 2005). Acknowledged as an extremely personal and philosophical construct, a majority of definitions found in literature recognize workplace spirituality as a sense of connectedness at work, a feeling of completeness and deeper values (Gibbons, 2000).

Ashmos & Duchon (2000) have described spirituality at work as the acknowledgment that individual employees have an inner life that gets promoted and sustained by meaningful work done in the context of community. Mitroff and Denton (1999) illustrated workplace spirituality as the effort to explore the ultimate purpose in life, to have a strong sense of association with other co-workers at work and most importantly to have an alignment of one's core values with that of the their organization.

Milliman et al. (2003) based their research on the work done by Ashmos & Duchon (2000). They incorporated only three of the seven identified dimensions of spirituality at individual level, i.e., inner life, meaning at work and community. Houston and Cartright (2007) advocated presence of the following four common elements of definitions of workplace spirituality, viz., transcendence, interconnectedness, compassion and finding meaning and purpose in life which can lead to a profound sense of belongingness and inspiration to serve common good.

It is clear that the literature empahsizes the significance of the alignment between the individual's beliefs and needs to the values and mission of the organization (s)he is associated with as a valuable element of a spiritual organization. Scholars accept that workplace spirituality is a multi-dimensional construct, yet each of them have identified different dimensions to describe workplace spirituality. It is fairly evident from literature that definitions of spirituality in the workplace often include the link to an individuals' and company's values. According to Kolodinsky et al .(2008), the individual viewpoint of spirituality at workplace includes the extent to which the individuals exhibit their spiritual values in the workplace, organizational spirituality on the other hand includes the individuals' perceptions of the presence of spiritual values at their workplace. The importance of the alignment between an employee's beliefs, needs and values and the mission of the organization was strongly emphasized as a determinant of a spiritual organization. In other words, personal spiritual values that an individual carry to the workplace have effect on interpretations of and responses to various organizational activities and reflects the perceptions that individual has about the spiritual values at workplace. However, Pawar (2009) believed that there is a difference between individual spirituality and organizational spirituality and these are in fact two different constructs altogether.

The qualitative study conducted on 14 professionals by Kinjerski & Skrypnek (2004) consisted of in-depth interviews, and written surveys on understanding individual experience of spirit at work. This work resulted in repositioning of workplace spirituality as a personal experience of individuals at workplace in contrast to the other scholars (Mitroff & Denton, 1999; Ashmos & Duchon, 2000; Milliman et al., 2003) who have focused on both the individual as well as community level experiences, represented by the involvement of individual at workplace.

Kinjerski & Skrypnek (2006) defined spirit at work as a multidimensional construct comprising of the following dimensions:

(i) engaging work characterized by feeling of wellbeing, a belief that one is engaged in work which is meaningful, an awareness of alignment of organizational and personal values;
(ii) spiritual connection which is characterized by a sense of connection to something larger than self;
(iii) sense of community, characterized by a feeling of connectedness to a common purpose and others; and
(iv) Mystical experience characterized by a sense of transcendence, a feeling of contentment and positivity. This definition of workplace spirituality given by Kinjerski & Skrypnek (2006) is closer to the definition we have selected for our study. As most of the definitions have an element of alignment of self-beliefs and organizational values, we have incorporated it in our study as well.

The present study adopts the definition of spirituality as given by (Kinjerski & Skrypnek, 2006) as it specifically addresses the spiritual dimension of work and more clearly exhibits the quality of the individual experience of spirit at work (i-SAW). However, we have also attempted to include organizational spirituality as defined by the extent to which an employee perceives of having an aligned relationship with their organization by considering how well their own goals and values are akin to their organization.

II. Research Design & Methods

This is a descriptive study with a cross-sectional research design. The scope of this study includes professionals working in the IT and ITES organizations based in Delhi-NCR. These sectors have been selected primarily because most of the prior research in workplace spirituality have been in the health and hospitality sector and secondly Delhi NCR has many such companies in close vicinity for ease of access. Besides, as per the latest report released by government of India in 2016-17, these sectors have shown one of the highest growth amongst all the service sectors and has become a promising engine for India's growth story. So, it would be prudent for us to analyze what works best for the employees in these sectors so that its benefits can be leveraged for the economy at large.

The final list of sample respondents was prepared using multistage sampling. In the first stage, CMIE Prowess database was used to prepare an exhaustive list of companies from these two sectors in Delhi-NCR. The list of companies was obtained applying the criteria of annual turnover >100 crores and employee strength >500. The choice of the companies based on these criteria was done based on assumption that such companies would have robust HR practices, including the possibility of workplace spirituality as its important component as well as the acknowledgment of employee as a spiritual being.

Thereafter, top five organizations each in both IT as well as ITES sectors were shortlisted based on the above-mentioned criteria. Delhi-NCR was a conscious choice for conducting this research as it has diverse concentrations of individuals from all parts of the country and includes a wide range of geographical spread. In the final stage, purposive sampling was used to create a sample of 80 respondents from each of these companies, with whom we shared the survey questionnaire and collected their responses.

Data was collected through primary sources using a survey-based questionnaire. The questionnaires were administered individually both through hard copies and by creating weblink on google docs. Before administering the survey, appointment was sought and the purpose of the study and other relevant instructions were given to the respondents. Anonymity and confidentiality was ensured to the participants to get their unbiased response.

The study was conducted in two phases. During the first phase or the pilot phase of the study, the collected data was subjected to reliability and consistency analysis. The questionnaire was found to be appropriate on all the subjected parameters. Thereafter, the second phase of data collection was conducted with the purpose to confirm and validate the questionnaire items in the study. Out of 800 responses solicited, 556 only were received, yielding a response of 69.37 percent. Some of these questionnaires had to be discarded due to missing responses and other issues. The final sample consisting of 536 usable responses was taken for conducting CFA. The analyses of the tool consisted of examining and confirming the factorial structure, reliability and convergent validity. The detailed procedure of examining the factorial validity and reliability of the construct has been discussed in following sections.

Measures

The survey questionnaire for this study consisted of two parts – general information on the respondents and the survey instrument. The initial section of the questionnaire consisted of demographic variables like age, gender, education level, etc. The second section of the questionnaire included the standardized instrument of workplace spirituality. The participants were asked to indicate their responses on a five-point Likert scale ranging from 1 to 5 with 5 being the highest level of response (strongly agree) and 1 being the lowest (strongly disagree) and 3 being neutral (neither agree nor disagree).

The measurement of spirituality has always been a matter of great concern for the researchers owing to the ethereal nature of the concept. Laabs (1995) stated that encapsulating the concept of workplace spirituality is like netting an angel, which is ethereal and beautiful yet enigmatic and intricate. Since it has been described as a unique, multidimensional, intangible concept, it makes it absolutely a very difficult construct to measure. The current study involves a much precise and comprehensive theorization of workplace spirituality (individual and organizational spirituality); commending a multi-dimensional conceptualization and measurement of the concept.

The survey instrument used for workplace spirituality included 18 items from Kinjerski & Skrypnek (2006) individual spirituality at work (i-SAW) scale measuring four dimensions – engaging work (EW), mystical experience (ME), spiritual connection (SpC) and sense of community (SoC). Since these dimensions measured the individual aspect of workplace spirituality, we strived to measure organizational spirituality to make it a holistic study. Alignment of organization values scale (adapted from Ashmos and Duchon, 2000; Milliman et al., 2003) which depicts the match between workers' spiritual values and the values of their organization was utilized for this purpose.

III. Results and Discussion

Demographic Profile of the Respondents

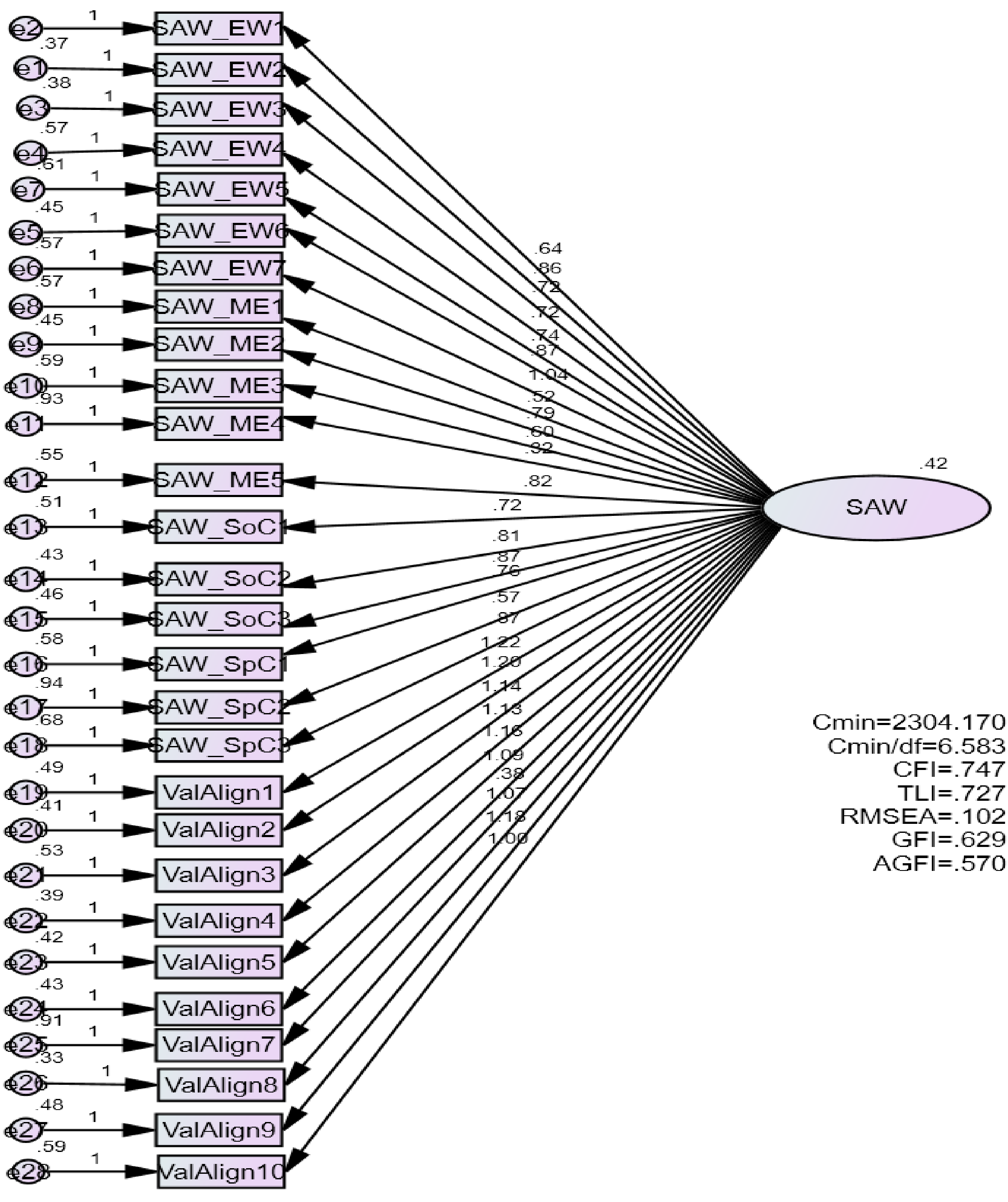
The study sample included 63.1% male respondents having an overall average of total work experience of 6.87 years, average years spent with the current organization as 1.9 years. About 60% participants of this survey had a Master's degree as the qualifying degree and the average age of was 29 years. The respondents of this survey belonged to various functions like Finance & Accounting, HR, Marketing & Sales, operations and information technology departments.

Dimensionality of the Scale

To assess the dimensionality of the scale used, confirmatory factor analysis using AMOS version 20.0 was applied to the data. The model fit was assessed by specifying a measurement model. The analysis helped in comparing the fit of the five-factor model (figure 2) to a one-factor model (figure 1) in which all 28 items were related to one SAW factor as a unidimensional construct. These models were compared by evaluating the χ^2 difference test and then the best fitting model was examined for overall model fit using the available fit indices i.e., GFI, AGFI, TLI, RFI.

Model 1 (one factor model): In the first model, we have conceptualized SAW as a single factor construct (figure 1)

Figure 1: Unidimensional Model of SAW.



***Model 2 (five-correlated factors model)*:** In the second model, SAW is conceptualized as a construct having five dimensions. Each individual factor represents a distinctive dimension of workplace spirituality and each item as a distinctive reflective of only one dimension, with correlations existing amongst the five factors.

Table I represents the summarized indicators for these models. The first model did not demonstrate good results for goodness of fit. As the current study uses self-report data, there may be possible bias due to common method variance. Harman's single factor test (Podaskoff et al., 2003) was conducted. Since the results of single factor model produced a poor fit to data, common method variance is not a concern in our study.

Table I: Comparison of the models of SAW.

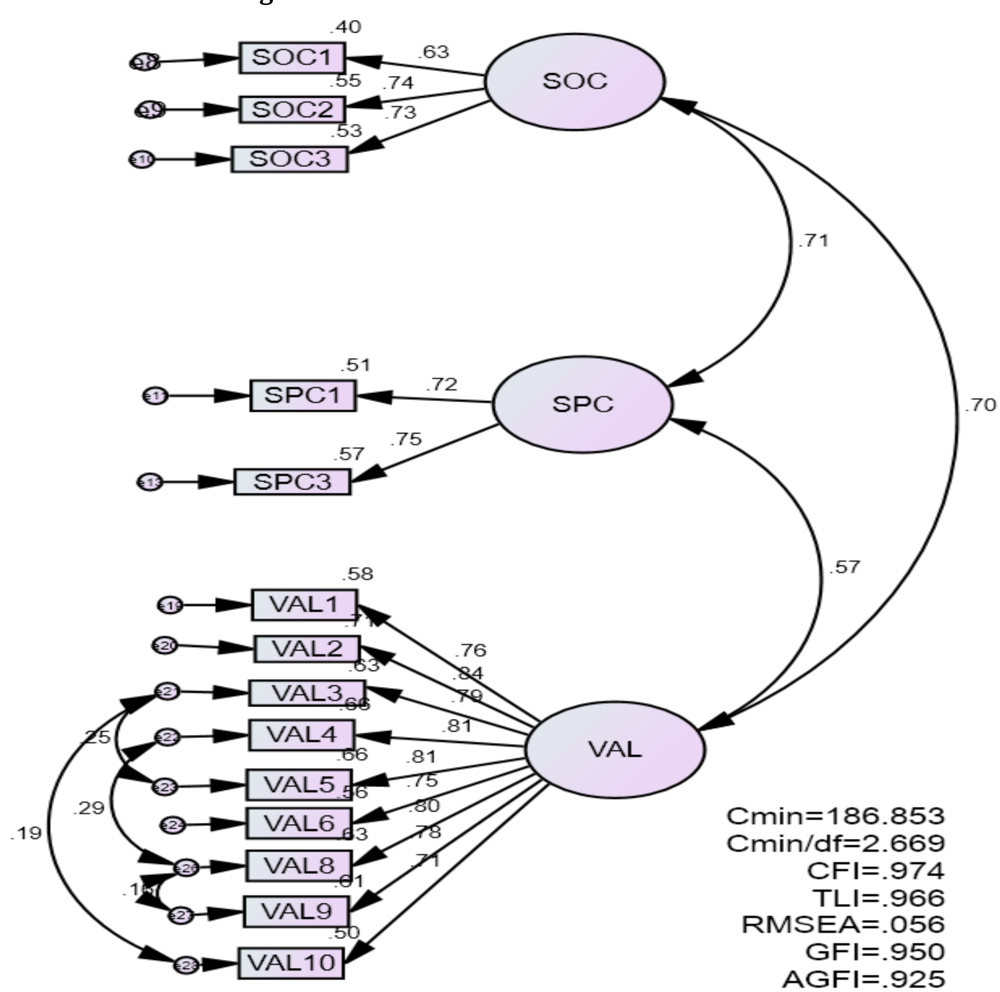
	Model 1:one general factor	Model 2: five correlated factors	Model 2A: three correlated factors
Absolute Measures χ^2 statistics	2304.17	991.222	186.853
p-value	0.000	0.000	0.000
df	350	340	70
GFI	0.629	0.876	0.950
RMSEA	0.102	0.060	0.056*
Incremental fit measures			
CFI	0.747	0.916	0.974
TLI	0.727	0.906	0.966
Parsimonious fit measures			
AGFI	0.570	0.852	0.925
NC (χ^2/df)	6.583	2.915	2.669

*p close – ns (non-significant)

The second model with the original five-factor structure displayed adequate measures of goodness of fit. Model 2 was definitely better in performance on measurement indices.

We went ahead deleting items that did not display sufficient factor loadings (<0.3) onto the factors they were supposed to. In addition, items having large modification indices (cross loadings) were also deleted. Applying the aforementioned criteria, the total number of items representing SAW was reduced to 14 items only. Measurement errors having high modification indices (>15) were identified and the pairs of errors within the same component were modified (e21 <-> e26; e22 ←> e26; e21 ←> e28; e26 ←> e27) to improve the measurement model. The range for standardized root mean square residual must be between .00 to 1.00, and a value of less than .08 indicates a good model fit (Hu & Bentler, 1998). SRMR for this model was 0.336 which is acceptable. The result of this analysis suggests that the SAW in our sample is a construct consisting of three dimensions (see figure 2).

Figure 2: First order Factor model.



Reliability Assessment

The reliabilities of the three subscales of SAW was checked by computing the reliability coefficients using Cronbach alpha. The coefficient of reliability of these subscales ranged from 0.699 to 0.937, which is within the range of >0.7 as suggested by Nunnally (1978). The composite reliabilities of all the dimensions was found to be greater than 0.7 which is acceptable.

Construct Validity

Peter (1981) describes construct validity as "the degree to which a measure assesses the construct is purported to assess". It can be done by assessing convergent and discriminant validity.

Convergent Validity: Convergent validity is proven if the value of AVE (average variance extracted) is greater than 0.50 for a factor (Fornell & Larcker, 1981). The CFA results of our study showed AVE ranging from 0.498 to 0.626.

Furthermore, all items of the dimensions of SAW loaded significantly positive on their specified factor (see figure 2) which indicates that the scales for these SAW dimensions possesses convergent validity.

Table II: Regression Weights.

			Estimate	S.E.	C.R.	P	Label
SAW_SoC1	<---	SOC	.839	.066	12.625	***	
SAW_SoC3	<---	SOC	1.000				
SAW_SoC2	<---	SOC	.974	.068	14.331	***	
SAW_SpC1	<---	SPC	.873	.076	11.535	***	
SAW_SpC3	<---	SPC	1.000				
ValAlign1	<---	VAL	1.000				
ValAlign3	<---	VAL	1.071	.055	19.592	***	
ValAlign2	<---	VAL	1.068	.053	20.278	***	
ValAlign4	<---	VAL	1.012	.050	20.051	***	
ValAlign5	<---	VAL	1.031	.052	19.741	***	
ValAlign6	<---	VAL	.904	.052	17.534	***	
ValAlign8	<---	VAL	.933	.047	19.719	***	
ValAlign9	<---	VAL	1.019	.054	18.732	***	
ValAlign10	<---	VAL	.912	.054	16.940	***	

Discriminant Validity: Discriminant validity specifies as to how much the different factors of the construct differ from each other (Fornell & Lacker, 1981). Discriminant validity is established when average variance extracted is greater than the maximum shared variance i.e., square of the correlation between the factors making up each pair.

To determine the significance of factor loadings, t-values were considered, all the t-values ranged from 11.5 to 20.2 and were found significant at the $p<.01$ level which indicates the significant relation of each item to its specific construct (Table III).

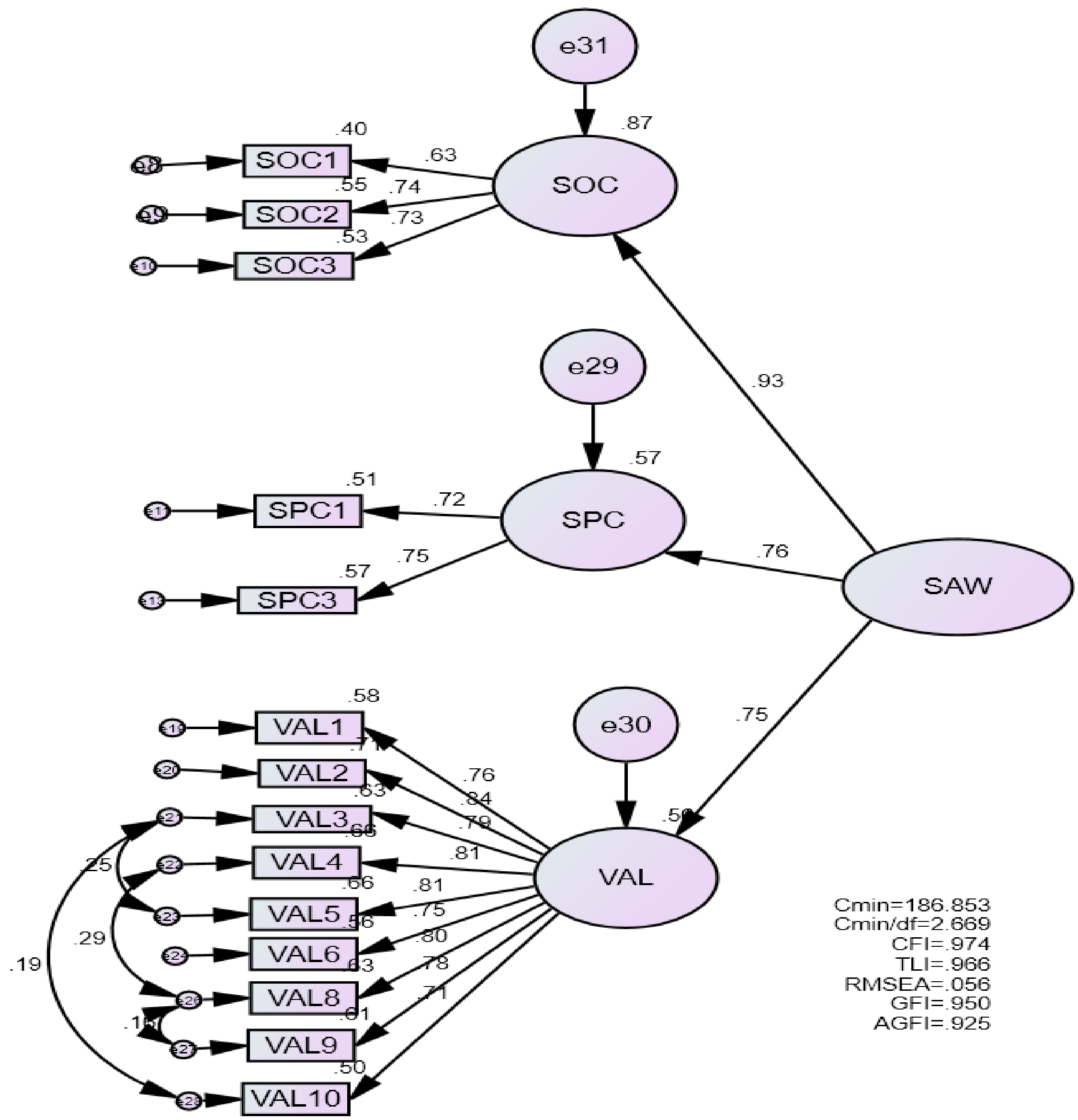
Table III: Regression Weights.

Items		Subscale	SRW	S.E.	C.R.	Sig.
I experience a real sense of trust and personal connection with my coworkers	<---	SOC	0.632	0.066	12.625	p<0.05
I feel like I am part of "a community" at work	<---	SOC	0.726			
I share a strong sense of purpose and meaning with my co-workers about our work	<---	SOC	0.743	0.068	14.331	p<0.05
I experience a connection with a greater source that has a positive effect on my work	<---	SPC	0.719	0.076	11.535	p<0.05
I receive inspiration or guidance from a Higher Power about my work	<---	SPC	0.75			
This organization cares about all its employees	<---	VAL	0.814	0.055	19.592	p<0.05
I feel positive about the values of this organization	<---	VAL	0.839	0.053	20.278	p<0.05
I feel connected with this organization's goals	<---	VAL	0.831	0.05	20.051	p<0.05

The organization I work for cares about whether my spirit is energized by my work	<---	VAL	0.748			
This organization has a conscience	<---	VAL	0.82	0.052	19.741	p<0.05
The organization I work for makes it easy for me to use my gifts and talents at work.	<---	VAL	0.738	0.052	17.534	p<0.05
I feel connected with the mission of this organization	<---	VAL	0.819	0.047	19.719	p<0.05
I feel positive about my future with this organization	<---	VAL	0.783	0.054	18.732	p<0.05
This organization is concerned about the health of its employees	<---	VAL	0.716	0.054	16.94	p<0.05

The outcomes of the first-order factor model are encouraging in terms of fit to our sample data. The 14- item modified SAW scale tested in this study was found to have adequate reliability and validity. A second-order CFA was run to see how the latent first-order factors contributed to a second-order factor of spirituality at workplace. Figure 3 shows the second order model of workplace spirituality.

Figure 3: Second order factor model.



All the fit indices of the second-order model are acceptable which indicates that this model is acceptable. All the beta loadings of the factors on the construct shows highly significant loadings ranging from 0.755 to 0.937. The correlations between the subscales were found highly significant (Table IV).

Table IV: Means, Standard Deviations, Correlations, Reliability & Validity Estimates.

Scales	Mean	SD	1	2	3	4
Total Scale	3.584	0.662	(0.906) 0.853[a] 0.662[b]			
SpC	3.625	0.838	0.651**	(0.699) 0.701[a] 0.540[b]		
SoC	3.697	0.736	0.694**	0.706**	(0.742) 0.744[a] 0.498[b]	
Val	3.471	0.811	0.940**	0.557 **	0.689**	(0.927) 0.937[a] 0.626[b]

Note: Reliability estimates, CR (a) and AVE (b) are in parentheses; **p<0.01

It may be noted that the fit statistics for the second order factors are the same as the first factor model with correlated factors. This means that the data fit both the first and the second-order models equally well, however the CFA second-order model had no greater (or lesser) ability to reproduce the measure variables than the first-factor model used here (Arnau, 1998). Another reason for this is that there are only three dimensions of the construct so the model is just identified, so the model fit indices are the same (Hoffman, 2015). Finding evidence from all the findings reported in this article, this version of Spirituality at Work scale appears to be a reliable and valid measure of workplace spirituality. It is thus convincing that not only can the SAW scale be useful to measure workplace spirituality in Indian IT/ITES industries, but its generalizability can also be extended to a variety of industries, ranging from manufacturing to financial sectors.

IV. Conclusion

The current research tested the dimensionality, validity & generalizability of the spirituality at work scale developed by Kinjerski & Skrypnek (2006). It also confirmed that the scale, although developed in western cultural context and tested in various cultural settings including that of an Asian country, Thailand (Tevichapong et al., 2010), is generalizable to Indian cultural settings. The confirmatory factor analysis of workplace spirituality scale, in general, demonstrated good discriminant validity, convergent validity and acceptable internal consistency. This study provides empirical evidence for the conceptualization of SAW as a higher order latent construct; which is important since acceptability of workplace spirituality in academics and practice will only come with its demonstrative effects (Giacalone & Jurkiewicz, 2003). Furthermore, SAWS (Kinjerski & Skrypnek, 2006) was validated with conceptual and statistical success. Although, only partial scale was found to be appropriate for this sample along with an additional measurement of organizational spirituality, the scale demonstrated adequate statistical reliability and validity, producing excellent fit for the overall SAW measurement model. The confirmatory factor analysis (CFA) tests with three-factor solution suggested a good model fit indices, showing that the instrument is a valid instrument for measuring workplace spirituality in Indian context. Similar findings of a three-factor solution of the SAW scale was observed by Stevison, Dent & White (2010) on a study conducted on 322 aerospace professionals from US. The original four-factor model of SAW did not find empirical support in their study as it was found not positive definite indicating a linear dependency among the observed indicators.

Workplace spirituality has been largely established in organizational sciences as a panacea to today's unsettling surroundings with so many apparent as well as hidden social, economic and environmental problems. Past researches have exhibited successfully that workplace spirituality has significant positive as well as inverse relationship with many attitudinal/ behavioral outcomes. Kolodinsky et al. (2003) recommended the leadership to take upon the responsibility to extend the benefits of spirituality to individuals within the organizations and asserted that various disruptive activities in an organization hamper smooth functioning but workplace spirituality was found to be uniting, it is therefore necessary to accommodate spirituality at work. Kinjerski & Skrypnek (2006) asserted that a spiritually energized organization requires a balancing factor like 'inspirational and enabling leadership' to unblock the negative influences of various organizational outcomes. Ebrahimi et al. (2011) found that workplace spirituality has immense potential to reduce negative outcomes of presence of divisive and disintegrating forces in the organization.

The workplace spirituality is a complex construct involving human's search for meaning and purpose in life, seeking expression beyond the sensory experiences, a connection that transcends; yet is connected to the core essence of human existence. It was thus, an extremely difficult task to capture the construct in its right form. Strong and statistically significant relationships confirmed in the current study not only substantiated the existent research in the filed but also expand knowledge by the utilization of a sample not previously explored. In this context, the current empirical work is important given Hill and Pargament's (2018) contention that research in religion and spirituality as a whole is getting hampered mostly due to usage of convenience sampling of typically students. This study definitely establishes workplace spirituality as an effort to derive a consistency between one personal beliefs and organizational values, leading to spiritual synergy and feeling of wellness in the employees.

Implications

Workplace Spirituality is an emerging discipline and its effective measurement is very essential for further advancements of the concept (Krahnke et al., 2003). Most of the scholars who have developed and tested their own workplace spirituality scale have emphasized upon the prerequisite for validation and refinement of existing scales of workplace spirituality, so that the area can be further built upon. This study explored the validity/ reliability of an existing scale developed and tested in western cultural setting and found that it is a reliable and valid scale to be used in Indian scenario as well. These findings can have major implications in further researches as the scholars using this scale for their own sample can be assured about their own findings as consistency and accuracy of the scale in capturing the essence of workplace spirituality has been secured through this study.

Limitations and Recommendations for Future Research

This present research work examined discriminant and convergent validity of a scale which had been developed and tested in different cultural settings. However, it would be an interesting study to see the efficacy of scales by examining correlations of scores obtained by using a variety of scales measuring the same concept of spirituality utilising the same sample (Sekaran & Bougie, 2011). Future studies may be conducted utilizing some other validity tests or using some other advances analyses for further authentication of the scale used. As the sample was collected from Delhi-NCR based organizations, further studies should be undertaken to check the generalizability and validity of the instruments in tier 2 & tier 3 cities of India and also across other industries such as manufacturing, banking, telecom, etc. Future researches are also required to test the construct of workplace spirituality the moderators, mediators and other organizational variables.

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IMPACT OF SERVICE QUALITY DIMENSIONS ON PATIENT SATISFACTION AND BEHAVIORAL INTENTIONS: A STUDY OF INDIAN PUBLIC HOSPITALS

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Purpose *- The purpose of this research is to examine the relationship between perceived service quality (PSQ) dimensions, patient satisfaction (PS), and behavioral intention (BI) of patients admitted in Indian government hospitals.*

Design/methodology/approach *- Data from 480 respondents was collected via structured questionnaires on a 5-point scale from six government hospitals. Convenience sampling method was used in the study. The patient responses were analyzed through reliability, correlation, and regression analysis using Statistical Package for Social Sciences (SPSS).*

Findings *– Infrastructure, process of clinical care, trustworthiness, and social responsibility dimensions of PSQ significantly influenced patient satisfaction. Behavioral intention dimension was significantly impacted by infrastructure, personnel quality and social responsibility dimensions. A direct and positive relationship was found between satisfaction and behavioral intention of patients. Overall patients reported low satisfaction levels in government hospitals, with administrative procedures dimension reporting the poorest performance due to the high waiting time in various service procedures.*

Originality/value *– There is a dearth of research that evaluates SERVPERF in multi-specialty government hospitals. This empirical study attempts to evaluate the effect of infrastructure, personnel quality, process of clinical care, administrative procedures, safety procedures, hospital image, social responsibility and trustworthiness dimensions on satisfaction and behavioral intentions of patients.*

Keywords: Government hospitals, perceived service quality, behavioral intention, patient satisfaction.

JEL Classification: I12, I18, I19, M31

In recent years, the demand for good quality medical services has increased with the rising standard of living and better lifestyles. The primary concern for patients is receiving high-quality medical care. Hospitals have shifted their focus on improving medical services to satisfy and retain the patients (Arasli et al., 2008). The impact of the healthcare sector on people's lives is more than any other sector (Parasuraman et al., 1988, Padma et al., 2010). A Patient undergoing a health care treatment holds high stakes and risks life during the procedure. A small error by the health care provider can have irreparable consequences. This makes the choice of healthcare services essential for the patients (Singh and Dixit, 2020). Patients choose a health care provider whom they can trust and believe. When patient expectations are met, they are likely to continue seeking treatment at the same hospital. However, a discontented patient is not likely to return to the hospital. Therefore, it is essential to grasp patient expectations to provide better service to them (Ramsaran- Fowdar, 2005). In this context, customer satisfaction plays a significant role in maintaining long-term relationships with customers. The higher the customer satisfaction, the greater the customer's willingness to return (Jandavath and Byram, 2016). Understanding patient needs, continuous improvement in health services based on customer feedback, and strengthening the patient-provider interpersonal relationship attains patient satisfaction (Talib et al., 2015).

Traditionally health care quality was analyzed from the healthcare providers' perspective, and the opinions of the patients were often neglected. However, with time, the perceptions of patients become important in health care quality evaluation even when they differed from the quality opinions maintained by the health care personnel (Calnan, 1988). The user and provider evaluation helped maintain a balance between the service offering and user expectations (Haddad et al., 1998). Nowadays, people are more aware, well-informed, and take health care decisions after extensive service evaluation. Patients are more conscious of the services delivered by the hospitals (Zineldin,2006). Therefore, healthcare consumers have high expectations and demand reliability, empathy, accuracy, and responsiveness from service providers (Parasuraman et al., 1985). Customer satisfaction is

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a fundamental aspect of building and maintaining associations in medical care services (Aagja and Grag, 2010). Therefore, this study investigates hospital perceived service quality and examines its effects on patient satisfaction and behavioral intention. Thus, the outcome of the study would enable hospitals to better understand the performance of the hospital on service quality dimensions, and learn how far they influence patient satisfaction and their behavioural intentions. In terms of service providers, public hospitals serve a considerable population in developing countries. However, it has been observed that the number of people relying on public healthcare in India has seen a decreasing trend. Even though the cost of treatment at a public hospital is meager, people still have been increasingly using private health care by paying extra costs ("Household social consumption in India: Health NSS 75th round (July, 2017 – June, 2018)", 2018). Further, regarding medical care quality, there is proof from developing countries, including India, that shows that private healthcare institutions more often lose focus on evidence-based practice, have lower medical outcomes, and tend to provide unnecessary treatment and testing(Almeida et al., 2017). Despite the risks involved and high patient out-pocket expenditure in private hospitals, patients are increasingly choosing them over low-cost care in public hospitals. Thus, to increase public hospitals' utilization, it is imperative to understand the patients' perception of quality towards pubic hospitals. Measuring service quality as perceived by the users, which in case of hospitals are the patients, is an effort to improve the quality of services in public hospitals. The study adopts the instrument developed by Padma et al. (2010) to measure perceived service quality using eight quality dimensions. The study objective is to measure the impact of healthcare service quality dimensions on patient satisfaction and behavioral intentions in the Multi-specialty public hospitals attached to Government Medical Colleges.

I. Review of Literature

Healthcare service quality

Healthcare services are intangible in nature. Unlike manufactured goods that can be touched and felt for quality inspections, the quality of services depends on the interactions between patients and providers and the method of health service delivery (Mosadeghrad, 2013). The healthcare quality evaluation is a complex process due to ethical considerations involved and the presence of many stakeholders with different interests involved (Pai & Chary, 2013). Intangibility, unclear guidelines, heterogeneity, subjectivity, and difficulty in measuring the output, are characteristics that make the service delivery process complex (Ghobadian et al., 1994).

Researchers have developed service quality concepts like the American view (Parasuraman et al., 1988) and the Nordic view (Gronroos, 1984). According to the Nordic service, quality has two parts: functional quality and technical quality. The American view defines service quality using five dimensions – empathy, tangibility, responsiveness, assurance, and reliability. The SERVQUAL scale developed by Parasuraman et al. (1985) has been extensively used to measure health care quality (Butt and Run,2010; Kansra and Jha,2016; Mahapatra,2013; Papanikolaou and Zygiaris,2012; Prabhu A. and Iyer,2018; Shafiq et al.,2017; Ramez,2012). Though this scale has been widely to measure health care quality, it does not include dimensions like care outcome, clinical procedure, information availability, admission, discharge, follow up, billing, information dissemination, patient safety, food and social image or responsibility (Swain and Kar,2018).

Owing to these shortcomings, many researchers have developed new scales to measure healthcare quality or have modified the existing SERVQUAL scale. Arasli et al. (2008) used a modified SERVQUAL scale to compare the quality of services provided in private and public hospitals. Zineldin (2006) developed a model with quality as a function of five dimensions: quality of interaction, quality of the atmosphere, quality of infrastructure, quality of object, and quality of process. Dagger et al. (2007) tested and validated a multidimensional hierarchical scale to capture hospital service quality. The four dimensions of hospital service quality were: technical quality, interpersonal quality, administrative quality, environmental quality.

Amin and Nasharuddin (2013) empirically tested five dimensions of quality: medical service, admission, discharge, overall health service, and social responsibility to determine the quality of medical care in private and public hospitals. Rose et al. (2004) conducted a study in Malaysia for evaluating hospital service quality using dimensions such as interpersonal, technical, social support, physical amenities, access, outcomes, cost, time, and patient education.

Abuosi (2015) developed a model with six dimensions (fairness of care process, financial access, adequacy of resources, professional clinical care, the effectiveness of treatment, and interpersonal care) to assess the health care services. Le and Fitzgerald (2014) examined the service quality of public hospitals in Vietnam using dimensions of quality like administrative procedures, tangibility, responsiveness, assurance, empathy, and administrative procedures were the six dimensions used to gather patients' perceptions.

Ritu Narang (2010) evaluated medical care quality based on service access, delivery of services, resource adequacy, and healthcare personnel. Haddad et al. (1998) empirically tested three quality dimensions such as physical facilities, health care delivery process, and personnel to measure patients' perceptions of visiting primary health care facilities in Guinea.

Patient Satisfaction

Consumer satisfaction provides a detailed understanding of the consumers' needs and expectations. Careful evaluation and management of customer satisfaction provide a competitive advantage to the organisations (Prahalad and Krishnan, 1999). Customer satisfaction is evaluated by comparing the perceived performance with the customer expectations. If the customer expectations and their perceived performance match, it results into happy and satisfied clients. The satisfaction construct can be defined as the consumers' emotional feelings that arise after a service experience (Oliver, 1997). The importance of satisfaction has grown exponentially, and it is now a fundamental constituent of health care services. Satisfaction is positively related to health care quality and is indispensable to its assessment (Donabedian,1980). The outcomes of satisfaction help in resource allocation based on patient priorities and is an essential yardstick to measure the utilization of healthcare services (Rajguru 2018).

Leiter et al. (1998) found information availability and the performance of doctors and nurses as the major factors that influenced patient satisfaction in Canadian hospitals. Zinn et al. (2016) empirically established that nursing care, doctor services, facilities, and support were the determinants of inpatient satisfaction in Germany. Chahal et al. (2004) used technical and non-technical aspects to measure patient satisfaction with government health services. The significant areas of improvement were the hospital atmosphere, grievance handling, behavior of staff, administration, and waiting time. In Bangladesh, Andaleeb (2001) investigated satisfaction in private and public hospitals using five dimensions: assurance, discipline, responsiveness, baksheesh, and communication.

Behavioral Intentions

A loyal customer is the one who buys service from the same firm multiple times. Customer loyalty is not the opposite of customer defection and vice versa for reasons like lack of choices (Choi et al., 2004). Behavior intentions predict whether or not customers will engage in long-term relationships with service providers. Favorable and unfavorable intentions are the two dimensions of behavioral intentions. Favorable intentions are formed when customers show loyalty, repurchase intentions, and spread positive word of mouth. At the same time, unfavorable behavioral intentions are formed with negative word of mouth and the intention to switch providers (Zeithaml et al., 1996). The commonly applied theory for behavioral intention states that when patients are satisfied with a hospital, they continue taking services from the hospital and spread positive words about the treatment to other people (Jandavath and Byram, 2016). Cronin et al. (2000) used positive word of mouth; repurchase intentions, and willingness to recommend the three indicators of customer intentions. Wu et al. (2008) measured behavioral intentions using repurchase intentions, willingness to recommend, and compliance with healthcare providers' instructions.

Hypothesis

Perceived service quality and patient satisfaction

Perceived service quality is a service assessment where the customers compare their expectations with actual service observations (Grönroos, 1984). Hospital service quality concerns the difference between patients' prior assumptions about the hospital service and their final perceptions (Aagja and Garg, 2010). Patients are the essential assets of a hospital, and in order to satisfy them, healthcare service quality is an important measure (Arasli et al., 2008). Literature has confirmed a direct and positive relationship between patient satisfaction and perceived service quality; the better the healthcare service quality, the more the patient satisfaction (Bakan et al., 2014; Shafiq et al.,2017). Cronin and Taylor (1992) found a strong causal relationship between general service quality and satisfaction.

Additionally, Badri et al. (2009) concluded that quality and satisfaction form the basis of planning, organizing, and service improvements in health care services. Delivering high-quality services is quintessential in driving patient satisfaction, and the hospitals which fail to acknowledge patient satisfaction might face possible extinction (Padma et al., 2010). In hospitals, patient satisfaction is widely used to predict service quality. Shabbir et al. (2016) demonstrated a positive association between service quality and patient satisfaction. Chahal and Kumari (2010) confirmed that the higher the quality of services higher is the satisfaction of patients. Similarly, Jandavath and Byram (2016) empirically verified a positive relationship between the quality and satisfaction constructs. Based on the literature, the study hypothesized that:

H1 Perceived service quality dimensions are significantly related with patient satisfaction.

H1a Infrastructure is significantly related with patient satisfaction

H1b Personnel quality is significantly related with patient satisfaction

H1c Process of clinical care is significantly related with patient satisfaction

H1d Administrative procedures quality is significantly related with patient satisfaction

H1e Safety indicators is significantly related with patient satisfaction

H1f Hospital image is significantly related with patient satisfaction

H1g Social responsibility is significantly related with patient satisfaction

H1h Trustworthiness is significantly related with patient satisfaction

Patient satisfaction and Behavioural intentions
Several studies have established that satisfied patients are inclined to revisit the health care centre and spread positive words. Chahal and Mehta (2013) noted that the inclination to revisit the hospital and advising it to others reflects the behavioral intentions. Cronin et al. (2000) empirically examined that consumer satisfaction exerts a potential impact on customer loyalty. Chahal and Mehta (2013) established that patients satisfied with the hospital services form the hospital's loyal customer base. Similarly, Naidu (2009) conceptually showed a close relationship between patient satisfaction and patient loyalty.

Consequently, Gaur et al. (2011) found a significant link between patient satisfaction and their loyalty to hospitals, which implies that high patient satisfaction considerably increases the patient's chances of returning to the hospital for treatment. Shabbir et al. (2016) and Mohamed and Azizan (2015) demonstrated that patients' behavioral intentions are dependent on their satisfaction levels. Customer loyalty (e.g., repurchase intentions, willingness to spread the positive word) is classified as a determinant of consumer satisfaction (Kessler and Maylod, 2011). Thus, based on the literature, the study hypothesized:

H2: Patient satisfaction is positively related with behavioural intentions

Perceived service quality and behavioural intentions
There can be two forms of association between service quality and loyalty; a direct relationship between the two constructs suggests that good service quality results in loyal customers, while an indirect effect suggests that satisfaction has a mediating effect between quality and loyalty constructs (Amin and Nasharuddin, 2013). Studies have proven an indirect relationship between perceived service quality and behavioral intentions with satisfaction as a mediating variable (Dabholkar et al., 2000; Fatima et al., 2018; Murti et al., 2013; Olorunniwo and Hsu, 2006). Researchers found a direct relationship between service quality and behavioral intentions (Olorunniwo et al., 2006; Papanikolaou and Ntani, 2008; Wu et al., 2008). Cronin and Taylor (1992) also established the direct links of service quality and customer satisfaction to behavioral intentions. The direct link between service quality and behavioral intentions was established by Cronin et al., 2000 across six industries. The link was also confirmed by Zeithaml et al. (1996) when they provided empirical evidence for the positive link between service quality and behavioral intentions. Even though there are other antecedents to customer satisfaction, namely, price, situation, the personality of the buyer (Natalisa and Subroto 1998), service quality receives special attention from the service marketers because it is within the control of the service provider; and by improving service quality its consequence, customer satisfaction could be improved which may in turn influence the buyer's intention to purchase the service. Based on the literature, it is hypothesized:

H3: Perceived service quality dimensions are positively related with behavioral intentions
H3a Infrastructure is significantly related with behavioral intentions
H3b Personnel quality is significantly related with behavioral intentions
H3c Process of clinical care is significantly related with behavioral intentions
H3d Administrative procedures quality is significantly related with behavioral intentions
H3e Safety indicators is significantly related with behavioral intentions
H3f Hospital image is significantly related with behavioral intentions
H3g Social responsibility is significantly related with behavioral intentions
H3h Trustworthiness is significantly related with behavioral intentions

II. Research Design & Methods

Data collection and sample
The study population constituted the patients admitted in six Government hospitals in Rajasthan. The multi-specialty hospitals were purposively selected based on the number of beds and annual patient admissions. Patients were contacted based on the convenience sampling method. The sample size was determined based on the guidelines given by Krejcie and Morgan (1970). The researchers collected the maximum sample size to ensure generalizability. Six hundred patients were approached (100 from each Government hospital), out of which 550 patients agreed to participate in the survey. The questionnaire was administered in Hindi and English languages. Several studies have prepared questionnaires in the languages specific to a region, e.g., English, Kannada, and Malayalam (Pai et al.,2018); English and Gujarati (Aagja and Garg,2010); English and Turkish (Kara et al., 2005). Before administering the questionnaire, the purpose of the research was clearly explained to the patients. Initially, the patients perceived the survey as feedback conducted by the hospital. However, their doubts were solved by ensuring the patients that the study was for academic purposes and the patient anonymity would be maintained. They were asked to indicate their responses on each of the scale items. In case the patient found it difficult to answer a few questions, the attendant was asked to respond. Few patients perceived the questionnaire as too long and refused to answer all the questions. 480 was the total usable sample of the study after removing incomplete and improper questionnaires.

Measures

The first part of the questionnaire was used to gather the patients' demographic information like their gender, age, income, occupation, education, marital status, and residence. The second part contained items measuring service quality dimensions, patient satisfaction and behavioral intentions. The study used the SERVPERF scale to capture the perception of inpatients. SERVPERF is a 22-item performance-based scale developed by Cronin and Taylor (1992). The instrument developed by Padma et al. (2010) was adopted for the study to measure health care quality using eight dimensions: infrastructure (physical facilities), personnel quality (quality of health care personnel involved in service delivery), process of clinical care (technical quality of service), administrative procedures (includes the admission, discharge and stay procedures), safety indicators (concerns the secure environment at the hospital), hospital image(reputation of the hospital), social responsibility(concern for the society), and trustworthiness(sense of well-being felt by patients). Satisfaction was measured using five items adopted from Dagger et al. (2007). Behavioral intentions, which is the dependent variable, is measured using three items adopted from the study Choi et al. (2004). All the questionnaire items were measured using a five-point Likert scale with 1=strongly disagree, and 5 =strongly agree.

III. Results & Discussion

Demographics profile

Table I outlines the demographic details of 511 respondents. 70.4% respondents were males. The patients under the age group 18-30 years totalled 8.4%; between 31-40 years,31%; between 41-50 years,36.9%; 51-60 years,18.4%; and patients above 60 years,5.3%. Majority (75.5%) of the respondents were married. Almost equal number of respondents were from urban (41.6%) and rural (41.8%) areas and 16.7% were from semi-urban areas. 49.4% participants were private employees,20.6%, self-employed,11.2% unemployed,11% students, and 7.8% government employees. Education profile of respondents demonstrates that 8.2 % respondents received no education, 16.9 % had education below SSC,22.9% had cleared SSC,29.4% had higher secondary, and 22.5% were graduates and above. The monthly income of 27.3% patients was below Rs10,000, between 10,001-20,000 for 45.5%,20,001-30,000 for 17.6%, and above 30,000 for 9.6% of respondents.

Table I. Demographic details.

Description	Frequency	Percentage
Gender		
Male	359	70.4
Female	151	29.6
Age Group		
18-30 years	43	8.4
31-40 years	158	31
41-50 years	188	36.9
51-60 years	94	18.4
Above 60 years	27	5.3
Marital status		
Single	125	24.5
Married	385	75.5
Place of stay		
Urban	212	41.6
Rural	213	41.8
Semi-urban	85	16.7
Occupation		
Government employee	40	7.8
Private employee	252	49.4
Self-employed	105	20.6
Unemployed	57	11.2
Student	56	11
Monthly income		
Below 10,000	139	27.3
10,001-20,000	232	45.5
20,001-30,000	90	17.6
Above 30,000	49	9.6
Education level		
Uneducated	42	8.2
Below 10th standard	86	16.9
SSC	117	22.9
Higher secondary	150	29.4
Graduate and above	115	22.5

Reliability results

Reliability addresses the consistency and stability with which the research instrument measures the dimensions (Sekaran and Bougie, 2010). It is an assessment of the extent to which the responses on the items in the research instrument yield similar results when repeatedly administered to the respondents. (Nunnaly,1978). The internal consistency method is most commonly used to measure reliability. Cronbach’s alpha is used to measure the internal consistency of a research instrument. The Cronbach alpha value for the individual variables range from 0.750 to 0.868. The values >0.70 indicate strong reliability (Bland & Altaman, 1997). The values for the variables are as follows: Infrastructure(0.921), Personnel quality(0.916), Clinical care(0.870), Administrative procedures(0.876), Safety(0.739), Hospital image(0.864), Social responsibility(0.869), Trustworthiness(0.869), Patient satisfaction(0.867),and Behavioural intentions(0.825).

Correlation results

Table II. Correlation analysis.

	Variables	1	2	3	4	5	6	7	8	9	10
1	Infrastructure	1									
2	Personnel quality	0.831*	1								
3	Process of clinical care	0.789*	0.798*	1							
4	Administrative procedures	0.714*	0.692*	0.725*	1						
5	Safety indicators	0.572*	0.602*	0.613*	0.590*	1					
6	Hospital image	0.736*	0.734*	0.751*	0.706*	0.633*	1				
7	Social responsibility	0.738*	0.745*	0.756*	0.670*	0.547*	0.728*	1			
8	Trustworthiness of hospital	0.757*	0.754*	0.772*	0.660*	0.580*	0.792*	0.771*	1		
9	Patient satisfaction	0.828*	0.773*	0.826*	0.708*	0.559*	0.760*	0.799*	0.807*	1	
10	Behavioural intentions	0.675*	0.646*	0.604*	0.541*	0.484*	0.614*	0.616*	0.616*	0.709*	1
	Mean	3.052	3.126	3.184	2.839	3.042	3.130	3.190	3.086	2.983	3.147
	Standard deviation	0.639	0.675	0.623	0.594	0.705	0.585	0.732	0.647	0.531	0.582
Note: *Correlation is significant at the 0.01 level(two-tailed)											

Bivariate correlation analysis was performed to explore the relationship between perceived service quality dimensions, patient satisfaction, and behavioral intentions. Correlation coefficient results are shown in Table II. The correlation between all the ten variables is strong and positive at 0.01 significance level. This suggests that the perceived service quality dimensions, satisfaction, and behavioral intentions form a holistic philosophy and are closely related. All the eight dimensions of perceived service quality had significant correlations with patient satisfaction; the infrastructure dimension showed the highest correlation and the safety dimension the least. The behavioral intentions dimension had a significant correlation with all the service quality dimensions; the highest correlation with the infrastructure dimension and the least with the safety dimension. Thus, patient-perceived health care service quality dimensions play a substantial role in maintaining patient satisfaction and subsequently behavioral intention.

Multiple regression analysis

Multi-collinearity

Variables were tested for multicollinearity before performing the regression analysis. The level of multicollinearity is indicated by the Variance Inflation Factor values and the tolerance values. The VIF values indicate whether the predictor variable has a strong linear relationship with other predictor variables, while the tolerance values are the reciprocal of the variance inflation factor. The tolerance values should be greater than 0.1, and the VIF values should be less than 10 (Ho,2006). From the VIF and tolerance values are shown in Table III, multicollinearity does not exist in the independent variables.

Table III: Multi-collinearity results.

Variables	Tolerance	VIF
Infrastructure	.213	4.697
Personnel quality	.234	4.279
Process of clinical care	.225	4.449
Administrative procedures	.374	2.673
Safety indicators	.529	1.889
Hospitals image	.274	3.652
Social responsibility	.288	3.470
Trustworthiness	.245	4.089
Satisfaction	.189	5.303

Table IV: Regression analysis.

	Model I (PSQ-BI)			Model II (PSQ-PS)			Model III (PS-BI)		
Variables	B		t-value	B		t-value	B		t-value
Infrastructure	0.292*	0.000	4.829	.249*	0.000	7.287			
Personnel quality	0.117*	0.043	2.028	-.023	0.471	-.722			
Process of clinical care	-.024	0.691	-.398	.217*	0.000	6.292			
Administrative procedures	-.020	0.697	-.389	.041	0.160	1.407			
Safety indicators	.044	0.234	1.191	-.031	0.135	-1.495			
Hospital image	.121	0.050	1.969	.055	0.115	1.580			
Social responsibility	.113*	0.016	2.429	.151*	0.000	5.778			
Trustworthiness of hospital	.062	0.280	1.081	.157*	0.000	4.839			
Patient satisfaction							0.777*	0.000	21.966
F		60.575			253.336			482.492	
R2		0.507			0.811			0.502	
Adjusted R2		0.499			0.808			0.501	
Durbin-Watson		1.602			1.702			1.650	
Notes: Behavioural Intentions (BI), Patient Satisfaction (PS),Perceived service quality(PSQ) *p<0.05									

Multiple regression analysis was applied to explore the possible relationship between dimensions of quality, satisfaction and behavioral intentions. The results are shown in Table IV. Model I is significant at p<.001, F(60.575), and the perceived service quality dimensions explain 50.7% variation in the dependent variable behavioral intentions. Service quality dimensions like infrastructure, personnel quality and social responsibility have a significant and positive relationship with behavioural intentions. Infrastructure followed by personnel quality and social responsibility exerts the highest impact on revisit intentions and recommendations of patients. Thus, based on the results, the hypothesis H1a, H1b, and H1g are accepted. Model II is significant at P<.001, F(253.336), and the dimensions of service quality explain 81.1% variation in the dependent variable patient satisfaction. The dimensions infrastructure, process of clinical care, social responsibility, and trustworthiness have a significant relationship with satisfaction. The standardized betas values indicate that the variable exerting the most significant impact on patient satisfaction is infrastructure followed by process of clinical care, trustworthiness, and social responsibility. Thus, the results suggest that hypothesis H1a, H1b, H1h are accepted. Model 3, shows a positive and significant relationship between patient satisfaction and behavioral intentions (β= 0.777, t=21.966, p<0.001). Hence, the mentioned results provide support for the hypothesis H2.

Perception scores on the service quality dimensions

The mean scores of perceived service quality dimensions and individual items are given in table V and table VI. The lowest mean score was obtained on the administrative procedures dimension, which suggests that patients perceive the waiting time during admission, discharge, and other internal processes as very high. The highest mean score is of the social responsibility dimension indicating that patients perceive the hospital performance on this dimension better than the other dimensions. Government hospitals are perceived as offering economical services to the patients. The item "There is a provision of medical services with nominal cost to the needy patients" of social responsibility dimension got the highest mean (3.30) followed by "The doctors are competent and skillful" (3.256, dimension: personal quality)," The doctor correctly assesses the patient health condition" (3.254, dimension: process of clinical care)," The medical treatment received by the patient is fruitful (3.247, dimension: process of clinical care", The hospital enjoys a good reputation" (3.235, dimension: hospital image)," The image of health care service providers in these hospitals is better as compared with the healthcare providers of other hospitals" (3.208, dimension: hospital image)," The nurses are caring and responsiveness to your needs" (3.189, dimension: personal quality)," The nurses are attentive towards you" (3.179, dimension: personnel quality)," PQ 4: The doctors are punctual while conducting ward rounds" (3.177, dimension: personnel quality).

The items which scored the lowest were "Proper assistance is provided to the patient by the staff in arranging for additional care or services" (2.772, dimension: administrative procedures) followed by" It is easy to get diagnostic tests done in the hospital" (2.806, dimension: administrative procedures)," Timely admission/surgery of patients is done" (2.808, dimension: administrative procedures," There are simplified administrative procedures concerning bill payment and discharge" (2.847, dimension: administrative procedures)," Clear information and instructions are provided by the hospital administration to the patient about hospital rules and procedures" (2.870, dimension: administrative procedures)," There is enforcement of visiting policy in the hospital" (2.883, dimension: administrative procedures)," The hospital maintains privacy and confidentiality of patients" (2.95, dimension: trustworthiness)," The cleanliness of the toilets is maintained" (2.975, dimension: infrastructure). The results show that patients are dissatisfied with the administrative procedures, cleanliness of toilets, quality of food supplied, and the hospital's innovative practices.

Table Mean scores of service quality dimensions

INFRA	PQ	PCC	AP	SAF	Hi	SR	TW
3.052	3.126	3.184	2.838	3.042	3.131	3.190	3.086

Table VI. Ranking of healthcare services.

Descending order	M	M	Ascending order
There is provision of medical services with nominal cost to the needy patients	3.304	2.772	Proper assistance is provided to the patient by the staff in arranging for additional care or services (e.g. physiotherapy)
The doctors are competent and skillful	3.256	2.806	It is easy to get diagnostic tests done in the hospital
The doctor correctly assesses the patient health condition	3.254	2.808	Timely admission/surgery of patients is done
The medical treatment received by the patient is fruitful	3.247	2.847	There are simplified administrative procedures with respect to bill payment and discharge
The medical treatment received by the patient is fruitful	3.235	2.870	There is prompt, simple and clear admission processes and procedures
There is better image of the health care service provider in this hospital as compared with the healthcare providers of other hospital	3.208	2.883	Clear information and instructions are provided by the hospital administration to the patient about hospital rules and procedures
The nurses are caring and responsiveness to your needs	3.189	2.95	The hospital maintains privacy and confidentiality of patients
The nurses are attentive towards you	3.179	2.975	Timely and hygienic food is supplied to wards and rooms
The doctors are punctual while conducting ward rounds	3.177	2.979	The cleanliness of the toilets is maintained
The hospital follows ethical principles while delivering medical care to patients among different segments in the society	3.172	2.983	The hospital invests in new technologies and innovative practices

Authors' own

IV. Conclusion

A comprehensive model of service quality dimensions, patient satisfaction and behavioral intentions provides several inputs in regard to developing standards, identifying patient needs, designing processes, establishing enhancing staff training, delivering good quality of services. The study analyzes the relationship between perceived healthcare service quality dimensions, patient satisfaction, and behavioral intentions in Government multi-specialty hospitals. Infrastructure, safety, hospital image, personnel quality, trustworthiness, social responsibility, administrative procedures, and clinical care process are the eight dimensions used to measure patients' perceptions about the hospital service quality.

The study is descriptive in nature. The mean score on behavioral intentions is above the midpoint of 3.0 on a five-point scale and has a positive valence, whereas the mean score of satisfaction for the sample is 2.98 is below the midpoint of 3.0 and has a negative valence. This implies that the patients reported low satisfaction levels with the service quality offered at the six Government hospitals. The administrative procedures received the lowest score out of the eight service quality dimensions. The waiting time for admissions, diagnostic tests, and discharge was too long. The scores on infrastructure items like food quality and cleanliness were deficient, suggesting improper hygiene and lack of clean surroundings in the hospital. The patients perceived the hospitals as unwilling to adopt new investments and technology. This can be attributed to less focus of the hospital on marketing. Unlike private hospitals, public hospitals do not focus on creating awareness among patients about the hospital's achievements.

The overall explanatory power of the research model with PSQ dimensions as independent variable and BI as the dependent variable is 50.7%; with PSQ dimensions as independent variable and satisfaction as the dependent variable is 81.1%; with PSQ dimensions and PS as independent variables and BI as the dependent variable is 54.4%. The relationship between healthcare service quality dimensions and behavioral intentions demonstrates that infrastructure, personnel quality, and social responsibility significantly influence patients' desire to return to the hospital and spread positive words about the treatment. The staff's quality in terms of their responsiveness, reliability, caring attitude, and adeptness play a major in influencing the future intentions of the patients. Infrastructure and social responsibility dimensions were found to be significant predictors of both patient satisfaction and behavioral intentions. This means that patients are looking for hospital services that are economical and fair. The hospital must focus on providing equal and ethical treatment to the patients. Often the physical facilities, availability of resources, and equipment in Government hospitals are not up to the mark. Patients usually complain about the cleanliness and hygiene standards followed in public hospitals. In times of the Covid pandemic, people have become more concerned about the hygiene of their surroundings and consider good hospital infrastructure as essential. Thus, it is imperative that the hospital administration focuses on maintaining cleanliness, keeping the equipment in order, and providing timely and adequate resources. Patient satisfaction was significantly influenced by clinical care, which constitutes care procedures, explanation of the treatment procedure, the effectiveness of treatment, and hospital personnel's performance during the treatment. The trustworthiness dimension emerged as a significant predictor of satisfaction, suggesting that the sense of well-being and confidence in the hospital services enhances patient satisfaction. These outcomes are consistent with earlier studies that healthcare perceived service quality dimensions influence behavioral intentions (Wu et al.,2008; Murti et al.,2013); healthcare service quality dimensions influence patient satisfaction (Akhtar et al.,2019; Chahal and Kumari, 2010; Fatima et al.,2018). The hypothesis that patient satisfaction has a significant relationship with behavioral intention is supported. The results obtained are consistent with studies that established that the role of satisfaction in positive behavioral intentions is significant (Gaur et al.,2011; Jandavath and Byram,2016). Behavioral intention determined the patients' willingness to recommend the hospital and intimate about the hospital advantages and visiting the same hospital for future medical treatment.

Practical implication

This study has analyzed the relationship among dimensions of healthcare service quality, satisfaction, and behavioral intentions. Consequently, this study provides a valuable contribution in understanding the importance that patients lay on the service quality dimensions and how these dimensions affect satisfaction and patients' willingness to consider the hospital in the future. Identifying the dimensions which have a high impact on satisfaction and behavioral intentions would help the service providers to prioritize their focus on those quality parameters. This analysis would guide the health administrators on effectively allocating and mobilizing the resources. The hospital could probe the low scores on specific dimensions to identify reasons for customer dissatisfaction. The hospitals can use patient quality perceptions to compare their performances with other hospitals.

Properly designed quality management practices surely help build patients' satisfaction and loyalty. This study will help hospital managers rely on healthcare service strategies that can help enhance satisfaction and loyalty intentions. Continuous monitoring of the patient feedback helps the service providers to manage their quality effectively.

Limitations and scope for future work

There are certain limitations associated with this work. The present study is concentrated on public hospitals; however, future studies can be extended to private hospitals and hospitals with public-private partnerships using the same or other healthcare service quality dimensions. The effect of factors like cost and trust on satisfaction and behavioral intentions can also be explored. The study uses the perceptions of inpatients to evaluate the quality of services; however, perceptions of health care providers like doctors, nurses, paramedical staff can also be included. In this study, data collection was permitted in limited wards; patients' perceptions can vary from one ward to another. Hence, in the future, more wards can be included. The study can also be extended to capture the perceptions of outdoor patients.

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REVISITING RELATIONSHIP BETWEEN WORKPLACE SPIRITUALITY AND EMPLOYEE'S PERFORMANCE- REVIEW AND RECONCEPTUALIZATION

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Purpose: *This review has two purposes: (1) to analyse the literature on workplace spirituality and employee performance and (2) to offer an outline of various factors in the subject field, making it possible to develop a roadmap for future researchers.*
Design/methodology/approach: *The authors have covered over two decades of research articles published in Scopus and Web of Science indexed journals between 2000 and 2020. The factors of workplace spirituality are synthesized. The authors have also provided directions for future research. This article review about 45 research papers and measure the effects of spirituality on the employee level outcomes.*
Findings: *This review article provides us an overview on different dimensions and findings of workplace spirituality with its employees' level outcomes i.e. job satisfaction, job performance and employee well-being. Based on extensive coverage of research articles published over the last two decades. This paper identifies some identify theories which helps to rationalize our research queries. Some dimensions of the above research remain unfamiliar and it may provide directions for further research.*
Originality/value: *The authors recommend three different potential propositions formed on the basis of explored literature. There has been no comprehensive review in this area exploring the relationship between workplace spirituality and employee level outcomes until now. Thus, this review article offers deep insights into the topic and also provides an integrated image of the subject field investigated.*

Keywords: Workplace spiritualty, employee level-outcomes, employee performance, employee well-being, job satisfaction.

JEL Classification: I31, M59, M50

Without caring about materialistic things when an individual search for inner peace and harmony it brings spirituality. Stress of the workplace and unethical code of conduct takes us very far from the spirituality and its end result always comes in negative. Now, the new learning organisations adapting the accelerating trends of workplace spirituality. A work place which is spiritual having an ethical climate, offers productive outcomes. Giacalone and Jurkiewicz (2003, p.13) defined workplace spirituality as "a framework of organisational values evidenced in the culture that promotes employees' experience of transcendence through the work process, facilitating their sense of being connected to others in a way that provides feelings of completeness and joy". Most of the researches in the past have focused on the positive impact of workplace spirituality on employees' outcomes like job satisfaction, employee well-being (Walt and Klerk, 2014). Fry and Matherly (2006), examined impact of workplace spirituality on organisational outcomes such as organisational productivity and organisational commitment.

I. Review of Literature

Workplace Spirituality and Job Satisfaction

According to Dawis and Lofquist (1984) "Job satisfaction defined as people's overall positive attitude towards work and extent to which their current position meets their needs, values and expectations". Spirituality at workplace is multidimensional and directly related with individual wellbeing and employees work attitude (Milliman et.al. 2003). Spirituality dimension directly effects on employee's behaviour at their workplace, (Walt and Klerk 2014), employees higher order spiritual needs always fulfilled by an ethical workplace (Fry 2003, Fry 2005, Ashmos and Duchon 2000). Here, should be a positive relationship between job satisfaction and workplace spirituality (chawla and Guda 2016, Pawar 2009). On the basis of the above statements, it's easy to established a relationship between job satisfaction and workplace spirituality. Employees positive work attitude always helps to enhance the productivity of an organisation, (Pawar 2009). Wrzesneiwski 2003, introduced "calling orientation", which means job satisfaction directly linked with the work performance and employees performs in the best way to lookout their work. Further in the light of fragmentary,

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Duchon and Plowman (2005) states that workplace seems like a place, where employees searched for the connectedness and sense of wholeness. Work unit performance directly associated with the workplace spirituality and helps to crate ethical climate. Employees nourished their inner life and able to find out meaning at work, (Ashmos and Duchon, 2003). Noor and Arif (2011) explored the consequences of workplace spirituality and proved that spirituality has a significant role to infuse employees job satisfaction level. Consistent with the above posited relationship Moore and Casper 2006, Milliman et.al (2003) discussed intrinsic job satisfaction (in terms of achievement, personal reward and growth) were used to measure work place spirituality. Fry (2003) stated that positive organizational purpose gestates employees with a sense of creating a positive change in workplace climate, which establishes an aspect of "calling". Gupta, Kumar and Singh (2014) suggested that spirituality should be used as a tool, which could be used to develop positive climate in the organisation, which in turn would lead to cultural transformation. Interestingly, spirituality has a different meaning from the perspective of employees (Van Tonder and Ramdass, 2009). Cavanagh and Bandsuch (2002) placed emphasis on spirituality and described it as an enhancer of integrity, motivation and job satisfaction. Well-being of individual employee is also reflected through adoption of spiritual practices at workplace (Clark et. al 2007).

Proposition 1: Workplace spirituality positively influence/related to job satisfaction in employees.

Workplace Spirituality and Job Performance

When an organisational environment become spiritual and employees satisfied with their jobs that directly contributes in their better job performance, (Shinde et.al 2010, Campbell and Hwa 2014). According to Murphy 1989 p.no. 218 and Campbell 1990 p.no. 313 defined "job performance refers to scalable actions, behaviour and outcomes that employees engage in or bring about that are linked with and contribute to organisational goals". Karakas (2009) reviewed around 140 articles and then stated that "workplace spirituality provides employees a sense of purpose and meaning at work which enhances employee well-being and quality of life". So that employees can be more productive and focused towards their performance. Jurkiewicz and Giacalone (2004) measured the impact of workplace spirituality on the overall organisational performance. Nowadays workplace spirituality become ineluctable part for an organisation and it improves organisational overall performance and productivity, (Dent et. al 2005). In the piece of research Ke, Xiao & Jiang (2015) suggested that workplace spirituality can be a mediator to achieve organisational commitment and better job performance of an employees. Spiritual workplace climate always emotionally motivates employees for their intrinsic value of work. Milliman (1994), stated that workplace spirituality positively related with the employee well-being and their job performance. Campbell (2014), explored the area of organisational commitment and job performance with workplace spirituality and after research it was revealed that spirituality at workplace plays very significant role when organisational commitment and well-being was measured. Spiritual climate provided more meaningful and sustainable environment for employees. Workplace spirituality increases the employee productivity and employee commitment, (Fry and slocum 2008).

Proposition 2: Workplace spirituality positively related to job performance among employees.

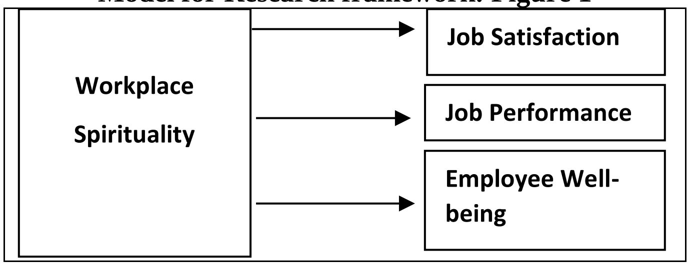
Workplace Spirituality and Employee Well-being

Pawar (2016), found potentially strong relationship between individual organisations and societies. The author harmonizing with (Ashmos and Duchon, 2000) and (Sheep, 2006) suggested that employee well-being is influenced by workplace spirituality. Pawar (2016) considered workplace spirituality as an antecedent to employee well-being. Karakas (2010 p. 89), put an argument on the basis review of literature that spiritual practices enhanced employee's general well-being and reduced the level of work stress. Pawar (2016), further extended the research of (Ashmos and Duchon, 2000); (Sheep, 2006) and (Karakas 2010), empirically examined on samples of various of different organisations employees and as result it was found that there was positive relationship between workplace spirituality and employees well-being (in four forms i.e. emotional well-being, psychological well-being, social well-being and spiritual well-being). Pawar, (2016) further suggested that if organisation inculcates workplace spirituality, it simultaneously enhances all four forms of employee well-being.

Garg (2017 p. 129), stated "spiritual employees were always more productive to organisation, spiritual employees add more meaning to work by their optimism behaviour and gained experience". Kumar and Neck (2002), asserted that promoting workplace spirituality in an organisation results in employee well-being, and it positively affected on individual level of outcomes. Pandey et.al. (2016) discussed that employees received higher level of satisfaction and fulfil their needs and desire by doing meaningful work at workplace. Through the research conducted on managers of multinational companies located in metro cities of India established a relationship between employee well-being where examined job satisfaction, employee commitment and work life balance with workplace spirituality. As result it was confirmed that workplace spirituality as a 'necessary' condition for employee well-being. Research analysis done by the help of NCA (Necessary Condition Analysis).

Proposition 3: Workplace spirituality positively influence/related to employee well-being.

Model for Research framework: Figure 1



In this above research framework workplace spirituality was an antecedent and employee well-being, job satisfaction and job performance became outcomes (). Spiritual environment always enhances the level of productivity and performance of an individual, organisation and society (Petchsawang & Duchon, 2009). Three propositions framed for this review article where all outcomes- employee well-being, job satisfaction and job performance are positively related to workplace spirituality (antecedent).

Key Studies

Few of the empirical and distinguished theoretical researches studies on workplace spirituality published during the last two decades with a basis on their recent contribution have been summarized on Table 1. Here all proposed studies: objectives, research methodology and their findings were highlighted, and were in order to provide recent updates and latest information. As per Fry et. al (2005 p. 835), "a leader should be spiritual, created workplace spiritual, always works for follower's need and contributed in organisational growth". The past literature has focused on the various outcomes of workplace spirituality like organisational citizenship behaviour, organisational commitment, well-being of an employee, job satisfaction, employee's productivity and so on. (Ashmos and Ducon 2000, Fry and Matherly 2006, Walt and Klerk 2014, Fry et. al. 2005, Karakas 2010, Sass 2000, Campbell 2014, Fry and Slocum 2008).

Notable papers on Workplace Spirituality in relation of Employee Well-being, Job Satisfaction and Job Performance during the last two decades are mentioned in table 1.

Table 1: Notable Contributions.

S.N.	Authors	Type of article	Method	Major findings/contributions
1	Kinjerski and Skrypnek (2004)	Empirical (Antecedents and outcomes)	Interviews and written surveys with professionals	Explore personal and work/organisational outcomes related to workplace spirituality. Developed instrument used to measure workplace spirituality.
2	Kolodinsky et. al. (2008)	Empirical (Antecedents and outcomes)	Correlation and regression analysis	Organisational spirituality had the strongest and consistent effects on the workplace outcomes.
3	Kumar and Neck (2002)	Theoretical (outcomes)	Literature Review	If managers can encourage the employees to follow their own spirituality path and relate that path to the organisational objectives. Spiritual freedom will make its employees fully potential developed. That would lead to better work performance.
4	Garg (2017)	Empirical (Antecedents and outcomes)	Correlation and regression analysis and NCA (necessary condition analysis)	Ancient Karma theory has been also one of the dimensions of Indian spirituality and became of the basic factor of workplace spirituality.
5	De Klerk (2005)	Theoretical (outcomes)	Literature Review (based on 13 propositions)	Meaning in life playing very significant role in the overall growth of an employee well-being.
6	Karakas (2010)	Theoretical (outcomes)	Literature Review	Implementation of spirituality at work should be done in a proper guidance, because it has its own caveats. Author provides suggestions to eradicate all those caveats and improve organisation performance and productivity.
7	Pawar (2016)	Empirical (Antecedents and outcomes)	Factor analysis and regression analysis	Workplace spirituality having s potential to improve organisational health.
8	Pawar (2012)	Theoretical (Antecedents and outcomes)	Comprehensive Review of the literature	Ethical dilemmas existed in an organisation. If workplace spirituality implemented then how it will effects on employees' experiences. An employee organisation relationship enhances goodness of employees' well-being.
9	Milliman et. al. (2003)	Empirical (Antecedents and outcomes)	Confirmatory Factor Analysis (CFA), Structured Equation Modelling	Workplace spirituality became a tool by which organisation increases productivity. Workplace spirituality improved job

				satisfaction and performance and also reduced the level of absenteeism and intention to quit.
10	Gupta et.al. (2013)	Empirical (Antecedents and outcomes)	Correlation and Regression analysis	Every human being having inner and outer life satisfaction, if a person having inner satisfaction it will automatically reflects on their outer life. Work place spirituality always helps to bring inner life satisfaction.
11	Chawla and Guda (2010)	Empirical (Antecedents and outcomes)	Correlation Analysis	Inner life satisfied by meaningful work and belongingness in the community. A spiritual workplace expresses their outcomes in the form of job satisfaction, commitment towards their job and less propensity to leave.
12	Altaf and Awan (2011)	Empirical (Antecedents and outcomes)	Correlation Analysis	Make workplace spiritual reduces the level of stress of employees work overload. Workplace spirituality improves employee's creativity, innovation and communication which results satisfaction in their life.
13	Pawar (2009)	Empirical (Antecedents and outcomes)	Correlation and Hierarchical Regression analysis	Workplace spirituality positively reflects in the employees work attitude. Individual spirituality helps to flourish spirituality on workplace.
14	Walt and Klerk (2014)	Empirical (Antecedents and outcomes)	Correlation, Principal factor analysis and ANOVA	Organisational business plans and employees plan easily influenced by the spiritual values of an organisation. Spiritual transformation of an organisation always helped to enhance performance and satisfaction of an employee.
15	Wrzesniewski (2003)*	Theoretical (Antecedents)	Survey based result	Finding deeper meaning in work for organisations, employees and peer groups. "Work as a calling" related with higher job satisfaction.
16	Giacalone and Jurkiewicz (2004)	Theoretical (Antecedents and Outcomes)	Review of Literature	Workplace spirituality became a new exploring area of research. In this piece of research author analysed workplace spirituality on the basis of past research work. As result a value frame work for spirituality created.
17	Chinomona (2012)	Empirical (Antecedents and outcomes)	Confirmatory Factor Analysis and Structural Equation Modelling	Extended Social Exchange Theory concepts in aspect of organisational support on workplace spirituality. In small medium scale enterprises workplace spirituality and organisational citizenship behaviour strongly influenced employees job performance.
18	Campbell and Hwa (2014)	Empirical (Antecedents and outcomes)	Factor Analysis and Multiple Regression Analysis	Spirituality is a holistic approach which directly influence job performance in an organisation. As spirituality at workplace an intangible dimension but it can be measured for sustainable development of an organisation.
19	Ke et.al (2015)	Empirical (Antecedents and outcomes)	Regression Analysis	Workplace spirituality mediates the relationship between corporate philanthropy and job performance. Spirituality is an emotional experience and such experiences effects on the level of performance of an employee.
20	Shinde et.al. (2010)	Theoretical (outcomes)	Literature Review (based on model and 07 propositions)	Trying to measure the impact of spirituality between spiritual committed organisation or spiritually neutral organisations. Organisational spirituality always has positive employee outcomes which makes organisation more productive.
21	Tayebiniya and Khorasgani (2018)	Empirical (Antecedents and outcomes)	Correlation and Multi-Regression Tests	Spirituality in an individual brings self-confidence and new insights towards their work and make them to perform better. Workplace spirituality became an antecedent of job performance.
22	Rastgar et. al. (2012)	Empirical (Antecedents and outcomes)	Structural Equation Modelling	Workplace spirituality creates extra role behaviour attitude in their employees which positively enhances their job performance.

Discussions

Employee well-being, job satisfaction and job performance are the three essential components of individual outcomes in an organisation. This present research study pointed out the association of workplace spirituality and these three individual level outcomes. This paper has reviewed to find the potential relationship between workplace spirituality with employee well-being, job satisfaction and job performance. First proposition suggested that there is positive relationship existed between workplace spirituality and job satisfaction. Workplace spirituality became a tool, which reduces the stress level, absenteeism and intention to quit and effectively increases their satisfaction level (Milliman et. al. 2003, altaf and awan 2011 and pawar 2009). Workplace spirituality always open up inner satisfaction, which directly influenced the outer performance of an employee (Chawla and Guda 2010 and Gupta et. al. 2013). “Work as a calling” (Wrzesniewski 2003) employee finding the deeper meaning of work in an organisation which connected to the higher job satisfaction (De clark 2005).

Second proposition framed that there is positive relationship between workplace spirituality and job performance. For the sustainable development of an organisation, spirituality adopted as a holistic approach, which enhances the job performance level of an employees (campbell and hwa, 2014). Workplace spirituality became an antecedent of job performance (Tayebiniya and Khorasgani 2018). Spiritual committed organisations were made their employees more productive and improves performance as well (shinde et. al.). Last proposition stated for the positive relationship between workplace spirituality and employee well-being.

The relationship between employee well-being and workplace spirituality were empirically tested by several times and both effecting positively on each other, (Kinjerski and Skrypnek 2004; Kolodinsky et. al. 2008, Pawar 2016 and Garg 2017). Meaning in life plays a very significant role in the employee well-being (De Klerk 2005). Workplace spirituality becomes a key factor connecting an individual’s soul to the others i.e. creating the sense of community, which they deemed necessary for survival (Ashmos and Duchon 2000). Spirituality as moderator with employee outcomes. Workplace spirituality moderated workplace aggression and employee outcome (Sprung et.al. 2012). The quality of work life would be managed by an individual when work done is in a stress-free manner.

Suggestions and Limitations

Today’s organisational goal is to provide employees positive meaning in work and it increases their productivity (Wrzesniewski 2003, Ashmos and Duchon 2000). Nowadays it’s a challenge to incorporate spirituality in an organisation successfully. After reviewing 140 articles on workplace spirituality Karakas (2010) find out four harmful results-proselytism, compatibility, it treated as a tool to manipulate employees and legitimacy problems, if spirituality did not bring correctly organisation would face all the above problems. On the other hand, in the same review article Karakas (2010) also suggested solutions to all above problems like respect for diversity, accommodation of spiritual requests, openness and freedom of expression and acceptance of individual as a whole. When individual follow spirituality and simultaneously organisation would also follow than after workplace became a spiritual workplace, (Kinjerski and Skrypnek, 2004).

A major limitation of this research article is dearth of empirical studies in between job satisfaction and workplace spirituality. So, this research provides a very comprehensive review of literature on the relationship of workplace spirituality and job satisfaction. It will provide a significant scope for research in future. Still there is scope for investing the effects of workplace spirituality with the organisational level outcomes. The notable theories on job satisfaction, job performance and employee well-being in relation with workplace spirituality area of research were included, apart of these many other individual level variables missed out which were also able to effect on the outcomes.

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A Book Review On "Statistical Analysis in Simple Steps Using R"

Author: Kiran Pandya, Prashant Joshi, Smruti Bulsari

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Parikshit Joshi *

Industrial revolution 4.0 is changing the world at a fast pace and the right decision at right time has become the need of the hour. Requirement of instant information has upsurge the need of proper knowledge and hands-on experience of statistical analysis. Gone are the days of manual computation, the requirement of quick relevant information has increased dependency on advanced computing software. We are living in a world where the amalgamation of statistics and computing software is becoming unparalleled.

Industry 4.0 generated the requirement of industry-ready candidate; making the knowledge of statistical analysis essential for the students (of UG, PG), research scholars, and of course for faculty members. Today a number of software are available for statistical analysis; however, since its inception, R has carved its niche and gained popularity increasing its adoption exponentially. Although there are several books and online resources available on R and statistical analysis, however, there is a gap of literature explaining the concepts systematically through user-friendly approach. The book *Statistical Analysis in Simple Steps Using R* is an attempt of filling this void. The contents are not only for academicians but a for practitioners as well. The essence of the book is its R programming and the soul of the book is statistical analysis.

This well-articulated draft of 370 pages has been distributed into 17 chapters. The first two chapters are dedicated to the basics of R and in the remaining 15 chapters, all essential tools of statistics through R have been explained. I take the opportunity to congratulate the authors for preparing the draft, keeping in mind the beginners having no prior knowledge; hence they have started with the basic steps for installing the R. In the first two chapters they have discussed all possible ways of entering data into R, updating R, installing and loading useful packages into the R. followed by discussion of data management in R in the second chapter.

Third chapter onwards, statistical analysis has become the epicenter of the book. As a reader and faculty of decision sciences, I feel that the remaining chapters are distributed according to descriptive and inferential statistics. The descriptive statistics explained in chapter 3 and 4 covers all essential charts, graphs, and frequency tables. In inferential statistics, the authors have discussed the application of parametric and non-parametric tests through R. The multivariate data analysis techniques have also been discussed using R in great detail.

I strongly recommend this book to novice researchers and students of the Business Management course. Overall the book is well written, and deserves 4.5 rating out of 5; however, the book can be useful to a reader who already possesses elementary knowledge of statistics.

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