

# Leveraging Social Media Analytics: Its impact on Organizational Culture

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## **Abstract**

*This research aims to forecast the impact of Social Media Site Usage on Organizational Culture and other work-related outcomes at the workplace. It is huge challenge for organizations to develop an alignment between Social Media Usage and Organizational Culture. This study empirically tests the direct and mediating effects of Workplace Behaviour by studying 3 sub-variables like Communication, Interpersonal Relations, Absenteeism; Job Performance through Job Involvement, Organizational Commitment, Innovative Behaviour; and Job Satisfaction through Employee Engagement, Turnover Intention, and Perceived Organizational Support on the relationship between Social Media analytics and Organizational Culture. 460 IT-Employees from 37 Public Limited IT-companies listed under Software Technology Park of India (STPI), Pune is the sample-size determined using Mean Method. The results of the Cochran's Q-test show that the purpose of use of Social Media Sites significantly differs in frequencies. The Pillai's Trace test shows that the Quality of Work-life depends upon usage of Social Media. To examine the impact of Social Media on Organisation Culture, a 2-group between subjects One-way MANOVA has been performed on aforementioned 9 Dependent Variables. The result shows that Organizational Culture depends upon usage of Social Media Sites. SEM is used to examine the predictive relationship between usage of Social Media and Organizational Culture as well as Organizational Performance.*

*This study advocates that the Decision makers and the Management of organisations should frame policies which allow standardized use of Social media that is beneficial for organizations and employees both for efficient information sharing and operations.*

*Key Words: Social Media Analytics, Social Media Sites, IT employees, Organisational Culture, Quality of Work Life*

## **5.1 Introduction**

Social Media Sites and several new technologies have become a contentious topic in the workplace. Some claim that using social networking sites in the workplace improves workplace culture and efficiency by influencing intermediate variables like morale (AT&T, 2008; Bennett, Owers, Pitt, & Tucker, 2010). Others claim that the greatest issue with the use of Social Media Sites in the workplace is the loss of labour productivity as a result of time not utilized at work. (Shepherd, 2011; Accountemps, 2010; Nucleus, 2009; O'Murchu et. al., 2004). Similarly,

Facebook use is found to decrease productivity by 1.5 percent (Nucleus Research, 2009); which may negatively affect workplace culture. However, another study by AT&T (2008) concluded that the majority of workers believed that using social media improved productivity, resulting in a happier work climate. Various studies also seem to assert that Social Media Sites use make employees happier and highly productive (Li et. al., 2008; AT&T, 2008; Bennett et. al., 2010; Leidner et. al., 2010; Patel & Jasani, 2010) resulting in better organizational culture.

There is considerable research that demonstrates that IT employees are no exception to using Social Media at work and they highly value its usage in their daily lives including their work-life (Shami, Nichols, and Chen, 2014). It can't be unseen that the use of social media has become a part of organizations and organizational culture affecting its various dimensions. Based on the review, it is observed that the studies that claim positive or negative impact of Social Media Sites in organizations, failed to empirically examine and measure its positive or negative effects on Organizational Culture and other work-related outcomes. Hence, in this study the researcher sincerely attempts to empirically test the impact of Social Media Site Usage on Organizational Culture through Workplace Behaviour, Job Performance and Job Satisfaction amongst IT employees.

## 5.2 Research Methodology

Descriptive Research Design is applied to conduct this research. 460 sample IT employees from 37 Public Limited IT companies selected from 230 IT Companies listed on STPI, Pune. Mean Method is adopted to arrive at the sample size. The Variables in this study are measured by using five-point measurement scale; hence the Mean Method is adopted. Following is the Formula used to determine the sample size:

$$N = \frac{z^2 * s^2}{e^2}$$

Where, 'z' is the standard score associated with confidence level (95% in the current case). Hence standard scores equals to 1.96 (borrowed from normal table)

'S' is the variability in the data set, computed as a ratio of range / 6. Range is equal to 5-1 = 4 (the difference between minimum and maximum value in the 5 point scale). 6 refer to  $\pm 3$  standard deviation values on the X axis of the standard normal curve, which takes in all the data set in study.

Hence  $S = 4/6 = 0.66$

E is the tolerable error = 6% (in the current study).

$$\text{Sample size } n = \frac{1.96^2 * 0.66^2}{0.06^2} = 464$$

Hence, the final size of sample is freezed at 460 IT employees.

One of the main goals of this research is to look into the predictive association between social media use, organisational culture and Organizational performance. Since all these three variables are latent constructs; Structural Equation Modelling is used to confirm Dependence Relationship between these constructs.

'SEM' is an advanced Statistical technique used for concurrently studying the Interdependence and Dependence relationship between several constructs. Structural Model involves 6 Latent constructs: Social Media Sites Usage, Social Media Behaviour, Workplace Behaviour, Job Performance, Job Satisfaction, and Organizational Performance. Following Research questions have been answered using SEM:

## Hypothetical Model

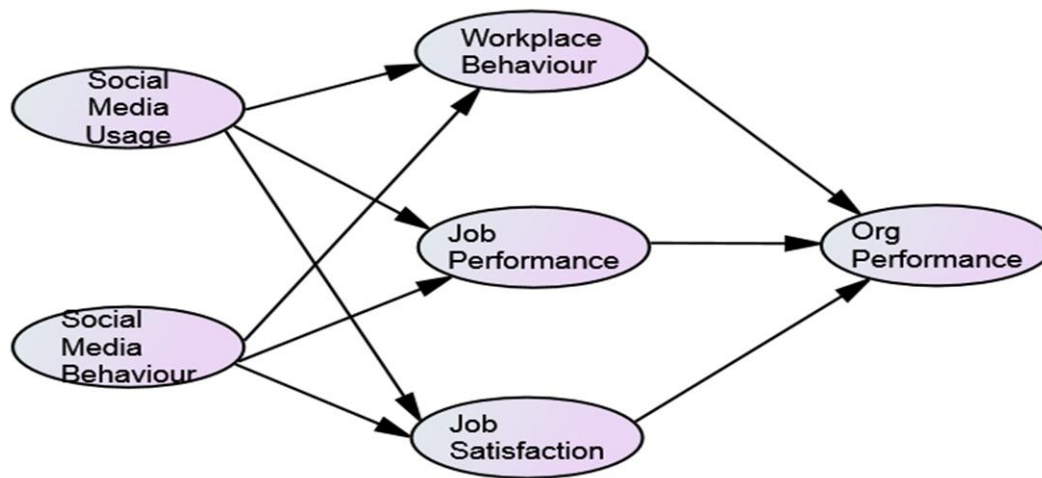


Fig. 1: Hypothetical Model

The proposed Hypothetical Model consists of 6 latent constructs (Social Media Sites Usage, Social Media Behaviour, Workplace Behaviour, Job Satisfaction and Job Performance, Organizational Performance). SEM is used to confirm the following Hypothetical paths in the model.

### 5.2.1 Research Question and Objectives

1. To study the Pattern of Social Media Sites Usage by IT Employees.
2. To study the influence of Social Media Sites Usage on Workplace Behaviour, Job Performance and Job Satisfaction
3. To analyze the impact of Social Media Sites Usage on Organizational Culture.
4. To examine the predictive relationship between usage of Social Media and Organizational Culture and Organizational Performance.
5. Social Media Sites Usage does not influence the relationship between Organizational Culture and Organizational Performance

### 5.3 Literature Review

Several studies have been conducted on influence of social media use on society, youth, adolescents and adults in various countries. Studies have also been undertaken on influence of social media use on behavioural, social and economic aspects considering various dimensions. **Romina Cachia, (2008)** explored and identified the social and economic implications of social networking sites in Europe. The study concluded with relevant social and economic impacts of social networking sites in Europe and their implications for policy. **A. Ferreira and T. du Plessis (2009)** specifically looked at the impact of social networking on productivity of employees and the effects of giving workers free access to social networking sites. **James Bennett, Mark Owers, Michael Pitt, Matthew Tucker, (2010), Emily Oxenford, (2011) Fakhar Shahzad, Rana Adeel Luqman, Ayesha Rashid Khan, Lalarukh Shabbir (2012)** investigated workplace impact of social networking and examined the link between social networking and organizational culture. **Gigi G. S., Dr. P. Umarani, (2013)** found that

empowering employees to be active in social channels can actually improve employee engagement, which is the key to improving employee morale, job satisfaction, and productivity. **Robert E. Ployhart, (2014)** addressed how Social media is revolutionizing the way people connect and share information, it affects the entire organization.

Most existing studies have shown the positive and negative influence of Social Media Sites Usage at workplace on Organisational Culture. This study, however, considered IT employees to measure the effect of Social Media Use in workplace on Organisational Culture through selected variables.

#### **5.4 Result and discussion**

Results show the demographic profile of the respondents where 57.6% are men, 42.4% are women. Majority of respondents of the study are between the Age group 31 to 40 years. Out of 460 respondents, 23.7% are Lower-level, 66.7 are Middle-level and 9.6 are Higher-level IT employees showing majority percentage of respondents are Middle level IT employees. The study also shows that 23.5% have 0 to 3 years of total work experience, 36.1% have 3.1 to 6 years, 18.7% have 6.1 to 9 years, 14.6% have 9.1 to 12 years, 7.2% have 12.1 years and above of total work experience.

It is found that majority i.e. 69.8% of the respondents is using Social Media Sites since 4 to 9 years and has 1 to 10 accounts on different Social Media Sites which they access for 1 to 3 hours daily who preferred Facebook, Whatsapp, LinkedIn, Skype and Instagram as the top 5 Social Media Sites for creating Personal profile. Also, 32.8% respondents daily spend less than 1 hour for using Social Media Sites and 53.7% spend 1 to 3 hours per day.

##### ***5.4.1 Purpose for using Social Media Sites do not differ in frequency***

To measure the pattern of Social Media Sites Usage at workplace, Cochran's Q test is applied to test the difference between the purposes and frequencies of usage. The results show that the Cochran's Q test is significant ( $p < 0.05$ ) that shows Null Hypothesis is rejected. Hence, the purpose for usage of Social Media Sites significantly differs in frequencies.

##### ***5.4.2 Quality of Work-life is independent of Social Media Sites Usage***

The employees whose Social Media Sites Usage is high achieve better work life as compared to those whose Social Media Sites Usage is low. A 2-group between subjects ONE-WAY MANOVA was conducted on 12 Dependent Variables (Workplace Communication, Information and Knowledge Transfer, Inter-Personal Relationship, Work Satisfaction, Engaged at Work, Trusted and Supported, Open Work Environment, Creative and Innovative, Long-Term Work Relationship, Motivated, Job Performance, Enriched Overall Working Experience). The result show the Bartlett's Test of Sphericity is statistically significant: To continue with the analysis, the p-value must be less than 0.001, implying that the dependent variables are corelated. The observed Covariance matrices of the Dependent Variable were unequal among Independent Variable categories, according to the findings. As a result, Pillai's-Trace was used to analyse all Multivariate-effects. The Pillai's Trace was significant at 5% Level of Significance.

Since p-value is less than 0.05, the null hypothesis is rejected. As a result, it can be inferred that the quality of one's work life is influenced by their use of social media sites.

#### ***5.4.3 Social Media Sites Usage has no influence on the organizational Culture***

To measure the influence of Social Media Sites Usage on the Organizational Culture, on 9 dependent variables, a 2-group between subjects ONE-WAY MANOVA was performed (Workplace Communication, Interpersonal Relations, Absenteeism, Job Involvement, Organizational Commitment, Innovative Behavior, Employee Engagement, Perceived Organizational Support, and Turnover Intention). The findings show that the Bartlett's Test of Sphericity is statistically significant: the p-value is less than 0.001, suggesting that the dependent variables are sufficiently related to continue with the analysis.

It indicates that observed Covariance matrices of the Dependent Variable unequal among Independent Variable groups. As a result, Pillai's Trace was used to assess all multivariate impacts. At a 5% Level-of-Significance, the Pillai's-Trace was important. The null hypothesis is rejected since the p-value is less than 0.05. As a result, it can be inferred that organisational culture is affected by the use of social media platforms.

#### ***5.4.4 Structural Equation Modelling:***

- (i) Social Media Sites Usage is not a positive predictor Workplace Behaviour*
- (ii) Social Media Sites Usage is not a positive predictor Job Performance*
- (iii) Social Media Sites Usage is not a positive predictor Job Satisfaction*
- (iv) Social Media Behaviour is not a positive predictor of Workplace Behaviour*
- (v) Social Media Behaviour is not a positive predictor Job Performance*
- (vi) Social Media Behaviour is not a positive predictor Job Satisfaction*
- (vii) Workplace Behaviour is not a positive predictor of Organizational Performance*
- (viii) Job Performance is not a positive predictor of Organizational Performance*
- (ix) Job Satisfaction is not a positive predictor of Organizational Performance*

**Construction Measurement:** A list of Latent Constructs and the corresponding measured indicators are as in the tables below:

Table 1: Latent Constructs

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<b>SMSU1</b>	Surfing my social media accounts are a part of my everyday activity
<b>SMSU2</b>	I do not hesitate to tell colleagues or boss that I'm on Social Media Sites
<b>SMSU3</b>	I feel out of touch when I haven't logged onto Social Media Sites
<b>SMSU4</b>	I am a part of the social media office community
<b>SMSU5</b>	I actively share views, opinions, suggestions, happenings etc. on social media work group
<b>SMB1</b>	Time to be dedicated to SMS use at workplace
<b>SMB4</b>	Reaction-time to check SMS notification
<b>SMB5</b>	Reply to every SMS message
<b>SMB6</b>	Change in Views/ Opinions/Approach due to SMS information
<b>SMB7</b>	Influence on Behaviour due to SMS use
<b>SMB8</b>	Pass on Messages without cross verification
<b>SMB9</b>	Decrease in Stress-Level
<b>SMB10</b>	Disturbance at Workplace
<b>SMB11</b>	Rejuvenated/ Refreshed
<b>WB1</b>	Communication
<b>WB2</b>	Interpersonal Relations
<b>WB3</b>	Absenteeism

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<b>JP1</b>	Job Involvement
<b>JP2</b>	Organizational Commitment
<b>JP3</b>	Innovative Behaviour
<b>JS1</b>	Employee Engagement
<b>JS2</b>	Perceived Organizational Support
<b>JS3</b>	Turnover Intention
<b>OP1</b>	Individual performance is high
<b>OP2</b>	Team performance is high
<b>OP3</b>	Employees are satisfied
<b>OP4</b>	Proportion of Absenteeism is lesser
<b>OP5</b>	Organizational goals are efficiently achieved

The term 'SEM' refers to a two-step procedure. The measurement model is validated in the first step using Confirmatory Factor Analysis, and the structural model is validated in the second step using SEM. Six latent constructs were used in the researcher's hypothesised model (Social Media Sites Usage, Social Media Behaviour, Workplace Behaviour, Job Satisfaction and Job Performance, Organizational Performance).

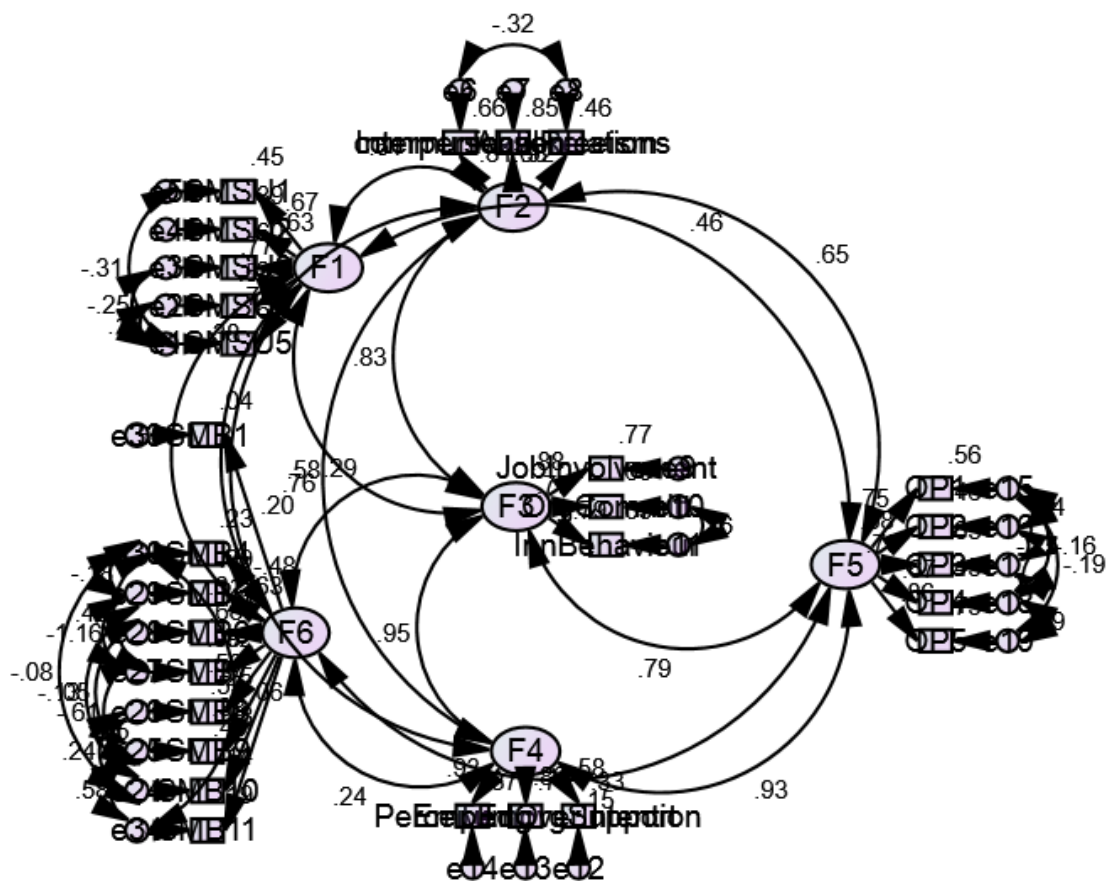


Fig. 2: Assessing the Model Fit of Measurement Model

Table 2:5 Fit Indices have been used to assess the Model Fit

Fit indices	Observed	Criteria for acceptable fit	Result
CMIN/DF (Minimum discrepancy as indexed chi-square)	5.3	Less than 5	Marginally Missed
CFI (Comparative fit index)	0.83	More than 0.9 for good fit, between 0.9 to 0.8 for borderline fit	Acceptable fit
RMR (Root Mean Residual)	0.057	Less than 0.08 for adequate fit, between 0.08 and less than 0.1 for borderline fit	Borderline fit
PNFI (Parsimonious Normal fit)	0.66	More than 0.5	Acceptable fit
RMSEA (Root Mean Square error of approximation)	0.097	Less than 0.08 for adequate fit, between 0.08 and less than 0.1 for borderline fit	Acceptable fit

Except for CMIN/DF, which has a Marginal missed, all of the Fit Indices indicate a good fit between the Hypothetical Model and the sample results.

### 5.5 Construct Reliability and Validity:

Ability of Scale to produce consistent results is known as reliability. Internal consistency among construct items is essential for a Latent construct. Cronbach Alpha ( $\alpha$ ) is used to determine the reliability of the structures under investigation. Alpha scores above 0.7 ( $\alpha > 0.7$ ) indicate Reliability. All the constructs have  $\alpha$ -score above 0.7 and hence Reliability is supported.

The ability of a scale to yield accurate results is referred to as validity. Validity is the degree to which elements of a construct function together to calculate the underlying construct for latent constructs. Validity is assessed using Factor Loadings and Average Variance Extracted (AVE). Validity is indicated by large factor loadings with values greater than 0.5. Validity is indicated by an Average Variance Extracted (AVE) value greater than 0.5.

Table 3: Factor Loadings

Measured Indicators		Construct	Loadings
SMSU5	<---	F1	0.788
SMSU4	<---	F1	0.537
SMSU3	<---	F1	0.773
SMSU2	<---	F1	0.626
SMSU1	<---	F1	0.672
Communication	<---	F2	0.811
InterpersonalRelations	<---	F2	0.922
Absenteeism	<---	F2	0.675
JobInvolvement	<---	F3	0.877

OrgCommitt	<---	F3	0.775
InnBehaviour	<---	F3	0.793
TurnoverIntention	<---	F4	0.578
PerceivedOrgSupport	<---	F4	0.835
EmpEng	<---	F4	0.93
OP1	<---	F5	0.748
OP2	<---	F5	0.679
OP3	<---	F5	0.792
OP4	<---	F5	0.67
OP5	<---	F5	0.865
SMB10	<---	F6	0.38
SMB9	<---	F6	0.526
SMB8	<---	F6	0.499
SMB7	<---	F6	0.958
SMB6	<---	F6	0.682
SMB5	<---	F6	0.628
SMB4	<---	F6	-0.476
SMB1	<---	F6	0.203
SMB11	<---	F6	0.43

All items have Loadings above 0.5 except for SMB1, SMB4 and SMB11 which have marginally missed the threshold point. Hence, Validity is supported.

Table 4: Construct Reliability

Construct	Number of Items	Cronbach- $\alpha$ Value
<b>SMSU</b>	5	0.798
<b>SMB</b>	3	0.814
<b>WB</b>	3	0.86
<b>JP</b>	3	0.816
<b>JS</b>	9	0.72
<b>OP</b>	5	0.68

All Constructs have  $\alpha$ -score above 0.7. Hence, Reliability is supported.

All of the Fit Indices indicate that the Hypothetical Model and the Sample Data are well-matched. Factor Loadings and Average Variance Extracted (AVE) have supported Validity and Cronbach- $\alpha$  has supported Reliability. We move on to the Structural Model now that the Measurement Model is accurate (SM). Five Fit Indices were used to evaluate the Structural Model.

Except for CMIN/DF, which has Slightly Missed the threshold mark, all fit indices indicate a good fit between the Sample data and Hypothetical model when assessing the significance of the path.

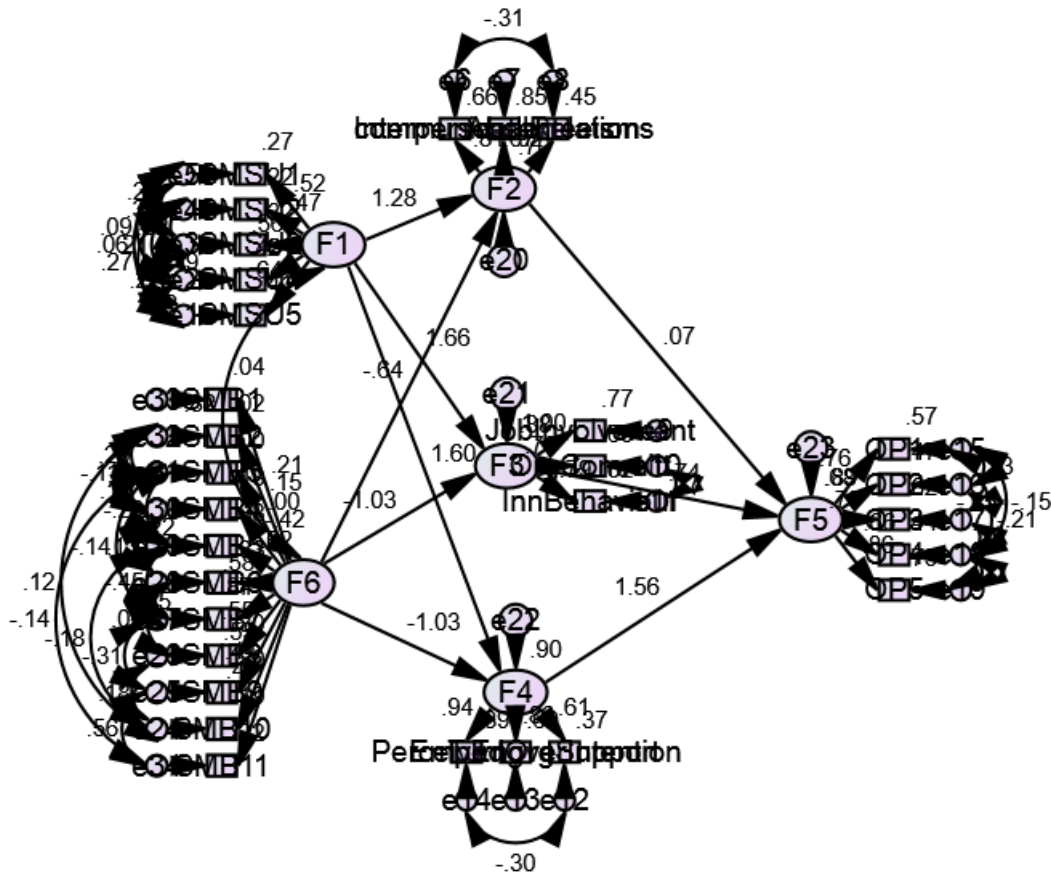


Fig. 3: Structural Model

Using standardised Regression weights and P-values, the paths' strengths and importance were evaluated. The effects of the relationship between exogenous and endogenous variables are shown in the table below:

Table 5: Relationship between exogenous and endogenous variables

Construct		Construct	Estimate
WB	<---	SMSU	1.24***
JP	<---	SMSU	1.61***
JS	<---	SMSU	1.55***
WB	<---	SMB	-0.59***
JP	<---	SMB	-0.98***
JS	<---	SMB	-0.99***
OP	<---	WB	0.065 <sup>ns</sup>
OP	<---	JP	0.76**
OP	<---	JS	1.58**

‘\*\*\*’ significant at 0.1% level of significance, ‘\*\*’ significant at 1% level of significance, ‘ns’ is not significant

SMSU → WB (B=1.24, P<0.001)  
 SMSU → JP (B=1.61, P<0.001)  
 SMSU → JS (B=1.55, P<0.001)  
 SMB → WB (B= -0.59, P<0.001)  
 SMB → JP (B= -0.98, P<0.001)  
 SMB → JS (B= -0.99, P<0.001)  
 WB → OP (B=0.065)  
 JP → OP (B=0.76, P<0.01)  
 JS → OP (B=1.58, P<0.01)

Social Media Sites Usage is the positive predictor of Workplace Behaviour

Social Media Sites Usage is the positive predictor of Job Performance

Social Media Sites Usage is the positive predictor of Job Satisfaction

Social Media Behaviour is the negative predictor of Workplace Behaviour

Social Media Behaviour is the negative predictor of Job Performance

Social Media Behaviour is the negative predictor of Job Satisfaction

Workplace Behaviour is the positive predictor of Organizational Performance

Job Performance is the positive predictor of Organizational Performance

Job Satisfaction is the positive predictor of Organizational Performance

### **5.6 Research implication**

The use of Social Media Sites at workplace helps the employees to rejuvenate and concentrate on their jobs. The use of Social Media Sites positively influences the employee's work life and improves the Organisational Culture. This study focuses on the Organisational Culture; nonetheless, it has been extended to study the effect of Social Media Sites use on the Organisation Performance which provides a scope for further research in various other sectors considering similar and extending it to different work-related outcomes. This study can be of great relevance to the Management and HR Managers for developing Social media related policies and HR Practices.

### **5.7 Theoretical & Managerial Implication**

Social Media Sites Use at workplace creates an open work environment which builds and improves inter-personal relationship amongst IT employees strengthening workplace communication. Social Media Sites Use increases information and knowledge transfer between employees improving their creativity and innovation at work. Employees feel well-engaged at work, trusted, supported and highly motivated to perform which improves their work satisfaction leading to better job performance. Liberal use of Social Media enriches the overall work experience increasing their inclination towards long-term work relationship with the company.

From the study it is concluded that Social Media Sites Usage positively influences organizational culture as high Social Media Sites Usage leads to better quality of Work-Life, stronger workplace communication, healthier inter-personal relationships, higher employee engagement, improved creativity, higher rate of information and knowledge transfer, more innovativeness, higher work satisfaction and better job performance compared to those whose Social Media Sites Usage is low.

The Decision makers and the Management of the organisation should allow employees to use standardized Social media as per the uniform Social Media Policies so that it can be optimally utilized for the best advantage of both the organisation and the employee. Management must

incorporate standardized Social media policy in organization to help regulate the workplace behaviour, enhance employee performance as well as organizational performance by its optimal utilization. Organizations can improve corporate operations and employee communications by providing their own intra-office and inter-branch social networking channels, which can enrich information banks and establish partnerships, thanks to the ease of Internet connectivity and access to SM in the workplace. The management can use Social Media Platforms as a training tool which allows flexibility of time and location to the employees. A provision for Social media break can also be incorporated (which can refresh employees, improve efficiency and productivity).

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