

Social Network Sites in Businesses: Combating Technostress

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Abstract

This survey research examined social networking sites (SNS) internal to the company to determine how SNS use affects attitudes, and ultimately turnover intentions. We hypothesize that due to social capital, emotional dissonance, and conservation of resource theories, work SNS use will decrease work isolation, which will decrease work-related attitudes and increase turnover intentions. Due to social capital theory, we propose that work SNS use will decrease work isolation. Due to emotional dissonance theory, we hypothesize that work isolation will decrease positive emotions and job satisfaction, and increase job tensions, such as work stress. All three of these factors will increase turnover intentions. These findings suggest that technology has the potential of reducing technostress symptoms at work. We found that incorporating internal SNS in businesses improves attitudes and behaviors, which is important for managers to consider as ways to save costs due to employee turnover.

1. Introduction

Prior research has identified stress related to IT work as affecting a variety of attitudes and behaviors, including organizational commitment and turnover intentions [1, 2]. Due to increased competition, businesses are rewarding employees who work long hours [2, 3, 4]. This research explores whether stress (work stress, in particular), due to SNS internal to businesses negatively affects attitudes and behaviors at work – including antisocial behavior (workplace isolation), positive emotions, and turnover intentions. This paper uses social capital theory, emotional dissonance theory [5], and conservation of resources theory [6] as underlying frameworks. Interestingly, we found that SNS use in businesses decreased social isolation, and therefore improved work attitudes and behaviors. We are interested in whether behaviors and attitudes are improved when using SNS that is internal to the company. Prior research found social media use to improve performance [7, 8], although no research to our knowledge has determined whether internal SNS use in businesses decreases turnover intentions. Our

findings may offer insights to managers for determining situations where introducing internal SNS might increase employees' job satisfaction and decrease turnover intentions.

2. Research background and hypotheses

2.1 Social Networking Sites

Social networking sites (SNS), such as Facebook and LinkedIn, are growing increasingly popular [9]. SNS are a web-based service that enable individuals to share profiles and content with each other [9, 10]. Often, SNS are used on a daily basis [9].

SNS have been found to improve personal life behaviors and attitudes [11, 12], including increasing optimism and better coping skills [11]. Prior research has examined how weak and strong social networks play a role at work, determining that weak social networks lead to negative work-related behaviors such as turnover intentions [13]. We are not aware of prior research that has explored how SNS affects work attitudes, such as job satisfaction, positive emotions, and work stressors, ultimately leading to turnover intentions.

2.2 Social Capital Theory and Work Isolation

Social capital leverages resources gained through a network, that could be virtual or actual [10, 14]. Resources gained from social capital include a “network of ties of goodwill, mutual support, shared language, shared norms, social trust, and a sense of mutual obligation that people can derive value from,” [10, 15]. A variety of disciplines have used social capital in prior research [10, 16].

Three general dimensions of social capital includes structural, cognitive, and relational [17]. The structural dimension includes patterns of connections, such as social ties and network structure [17]. The cognitive dimension are generally the resources that are obtained through shared interpretations [17]. The relational dimension are assets gained due to social connections [17]. Some public benefits obtained through social capital include facilitating collective action [18]. Private benefits involve increased access to resources and relationships [10, 19, 20, 21]. Our

paper is primarily interested in determining private benefits associated with work SNS use.

We believe that employees' use of SNS will naturally increase their access to social capital, including increased access to resources and relationships. This increased social capital gained through internal SNS use will result in the employee feeling more of a part of the work community, especially due to greater social ties [17] and social support [22, 23, 24]. Increased social capital through internal SNS use will naturally decrease an employee's feelings of isolation. Thus, we hypothesize that due to increased social capital experienced by employees from using SNS, work isolation will decrease.

H1: *Work-Related SNS Use decreases work isolation.*

2.3 Emotional Dissonance and the Work Environment

Emotional dissonance is a conflict between the work experience and a person's emotional state of mind [5]. This potential clash between a person's emotions and organizational norms [5, 25] can create a person-role conflict [5, 26]. Employees who comply with the organization will experience conflicting feelings [5] in the situation where they do not want to comply. Thus, emotional dissonance has been found to decrease job satisfaction [5]. Typically, a person who experiences any type of emotional or cognitive dissonance prefers to resolve this dissonance so they can return to a more harmonious state [27].

Work isolation involves two components: 1) perceptions of isolation from colleagues and 2) perceptions of isolation from a business' support network [28], which could both result in negative perceptions towards work [29]. We are interested in the perceptions of work isolation from a business' support network, which could be due to working extended hours at home and therefore away from the business' support network.

Due to emotional dissonance, we believe that a person desires to keep similar mindsets of either harmony or disharmony between their organizational experience and emotional state [5], which will result in both their emotional and organizational experience in being either positive or negative based on which mindset dominates. Because work isolation often leads to negative attitudes towards work [29] due to perceived isolation from a business' support network, we believe that employees' emotions towards the work environment will become more negative in order to resolve emotional dissonance experiences. Thus, work isolation will decrease positive emotions.

H2: *Work isolation decreases positive emotions.*

Similarly, emotional dissonance has been identified when employees are dissatisfied with their job [5]. The disconnect between an employee's emotional state based on potential compromised values at work or the inability of the business to meet expectations are some examples that could cause emotional dissonance [5, 30]. In this research, we believe that work isolation may cause an employee to be in conflict with any positive emotions he/she may be experiencing towards work, especially since this has also been found in prior research [29]. Because of a person's preference to minimize dissonant experiences, we believe that work isolation will result in a person's emotions towards the organization to be negatively affected (H2), and thus due to emotional dissonance of keeping in similar states of mind, work isolation experiences will decrease employees' experience of work satisfaction.

H3: *Work isolation decreases work satisfaction.*

2.4 Work Stress, Work Isolation, and Emotions

Work stress involves perceptions that situations in a business environment are difficult or challenging, which threatens a person's wellbeing [31]. Work stress has been found to cause organizational issues, including increased burnout and turnover intentions [31].

As discussed in the prior hypothesis, emotional dissonance may be experienced at work due to a conflict in employees' emotional state and their work experiences [5, 30]. It therefore follows that if employees experience work isolation where they feel disconnected from their support network, their experiences towards work will become more negative in their attempt to remain in harmony between their emotional state and work experiences. As a result, employees' perceptions of having a more challenging work environment will increase. Thus, we believe that work isolation will increase work stress.

H4: *Work isolation positively affects work stress.*

Since emotional dissonance can be experienced when there is a disconnect between the feelings towards the organization and an employee's personal emotions, we believe that positive emotions will cause an employee's experience towards an organization to be more positive, thereby lessening perceptions of potentially difficult work situations. Again, this is due to a person desiring to minimize dissonant experiences/feelings [27]. Thus, employees' positive emotions will decrease their work stress.

H5: *Positive emotions decreases work stress.*

Similar to H5, emotional dissonance is the disconnect between the person's positive emotions and their organizational experiences. A person prefers to remedy this dissonance in order to experience more harmonious situations [27]. Thus, employees' positive emotions will increase their positive organizational attitudes, such as job satisfaction.

H6: *Positive emotions increases job satisfaction.*

2.5 Conservation of Resources and Work Stress

Conservation of Resources theory involves people working towards their values, or resources, such as money, work-life-balance, and a successful career [6]. When these resources are lost, or threatened, then stress results and physical and emotional exhaustion ensues [6], which has been found to increase turnover intentions [1]. We similarly hypothesize that due to the Conservation of Resources theory, work stress, which often involves a challenging work environment [31], causes resources to be lost – such as resources supporting an optimal work-life balance. We hypothesize that these lost resources will increase turnover intentions due to employees choosing to leave their current challenging situation for a better work environment where their lost resources can be gained.

H7: *Work stress increases turnover intentions.*

2.6 Job Dis/satisfaction, Positive Emotions and Turnover Intentions

Job dissatisfaction involves a negative emotional state due to compromised personal values compared to the organization [5, 30]. Job satisfaction and job stress have been identified as having an inverse relationship [32, 33, 34]. According to models from prior research, job dissatisfaction conjures thoughts of termination [5, 35]. Prior research has found job satisfaction to be an antecedent of turnover intentions [5, 36, 37, 38, 39]. To resolve feelings of emotional dissonance towards the organization, we believe that a positive mindset associated with job satisfaction will lessen the more negative mindset of desiring to leave a job, thereby decreasing turnover intentions.

H8: *Job satisfaction decreases turnover intentions.*

Conversely, due to emotional dissonance, positive emotions encourage employees' perspective of an

organization to be more favorable. This is due to employees preferring to minimize conflicting dissonant feelings [27] that may be associated with turnover intentions. Thus, we believe that positive emotions will decrease negative organizational attitudes, such as turnover intentions.

H9: *Positive emotions decreases turnover intentions.*

3. Research Methodology

To examine our research model and hypotheses, we undertook an online survey at an information technology corporation in the Midwest region of the U.S. which has more than 22,000 employees and serves more than 18,000 organizations around the world.

The ESM software platform consists of a suite of applications including social networking, wikis, blogs, document management, discussion forums, and search capabilities to find experts – capabilities that allow employees communicate, collaborate, innovate, and learn from one another.

3.1 Respondents

Of the 10,000 ones sent out, 320 surveys were obtained, of which 276 were fully completed, yielding an effective response rate of 3.2%. The low response rate was comparable to similar studies [40]. To mitigate non-response bias, we took a priori measures to reduce non-responses including offering a drawing for participation, stressing anonymity, and emphasizing academia sponsorship, as recommended in the literature. None response bias was also assessed post hoc by comparing the first third of responses and the third portion of responses finding no significant differences between the two groups. Therefore, nonresponse bias was ruled out as an issue in this study.

The average participant's age was 35.6 with 11.5 standard deviation. Females constituted 51.8% (n = 143) of the respondents. Participants' average tenure was 5.9 years. Of the participants, 4% had high school diplomas, 7% had associate degrees, 62% had bachelor degrees, 26% had master's degrees, and 1.5% had doctoral degrees. ESM platform was used on average for approximately 1 hour and 43 minutes per day.

3.2 Measures

All the measures in this study are based on previously validated measures. The measure of ESM

use was adopted from [41]. Work isolation was measured with items used by [28] and [29]. Positive emotions were measured with items from [42] and [43]. Work stress was measured with items from [44] and [45]. Job satisfaction measure was adapted from [46] and [47]. Turnover intentions measure was adopted from [47]. Age, exercise, gender, education level, race and tenure were included as control variables.

We undertook a PLS-based structural equation modeling (SEM) data analysis approach [48, 49] to assess the psychometric properties of the measurement instrument. All constructs in this study were assessed in terms of reliability, convergent validity, and discriminant validity using the software WarpPLS 5.0 [50]. Reliability was assessed using composite reliability in which all values exceeded the suggested threshold of 0.7 [48] and therefore met this criterion. For convergent validity, all item loadings exceeded the suggested threshold of 0.6 [51], indicating acceptable convergent validity. Table 1 shows that all measures have good reliability and validity.

Table 1. Construct Reliability and Validity

Constructs	Item	Loading	CR	CA	FVIF	Nor
SNS Work Use	SNSUse1	(0.798)	0.88	0.83	1.23	No
	SNSUse2	(0.669)				
	SNSUse3	(0.814)				
	SNSUse4	(0.722)				
	SNSUse5	(0.828)				
Workplace Isolation	Wlso1	(0.805)	0.86	0.77	1.41	No
	Wlso2	(0.834)				
	Wlso3	(0.833)				
Job Satisfaction	JobSat1	(0.956)	0.98	0.96	1.73	No
	JobSat2	(0.974)				
	JobSat3	(0.964)				
Positive emotions	PosEmo1	(0.822)	0.94	0.92	1.25	Yes
	PosEmo2	(0.899)				
	PosEmo3	(0.787)				
	PosEmo4	(0.734)				
	PosEmo5	(0.854)				
	PosEmo6	(0.815)				
	PosEmo7	(0.850)				
Work Stress	Stress1	(0.700)	0.89	0.85	1.25	No
	Stress2	(0.862)				
	Stress3	(0.812)				
	Stress4	(0.832)				
	Stress5	(0.737)				

Notes: All loadings significant at the $p < 0.001$; CR = composite reliability; CA = Cronbach's alpha; FVIF = full collinearity variance information factor; Nor = normal (robust Jarque-Bera). SNSUse = social networking work use; Wlso = workplace isolation with the company; JobSat = job satisfaction; PosEmo = positive emotions; Stress = work stress.

Discriminant validity was examined employing criteria suggested by [52] in which the square root of the average variance extracted (AVE) should be

greater than the inter-construct correlations. Table 2 shows that the AVEs are greater than the inter-construct correlations providing evidence of discriminant validity.

Table 2. Inter-construct Correlation Matrix

	SNSUse	Wlso	JobSat	PosEmo	Stress
SNSUse	(0.769)				
Wlso	-0.324	(0.824)			
JobSat	0.155	-0.351	(0.965)		
PosEmo	-0.002	-0.146	0.325	(0.824)	
Stress	0.039	0.129	-0.231	-0.044	(0.791)

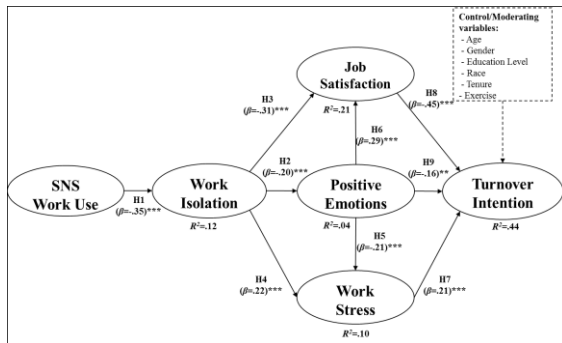
Notes: Square roots of average variances extracted (AVE) shown on the diagonal within parentheses; SNSUse = social networking work use; Wlso = workplace isolation with the company; JobSat = job satisfaction; PosEmo = positive emotions; Stress = work stress.

Multicollinearity was evaluated by calculating the variance inflation factor (VIF). Table 1 shows that VIFs are all less than the recommended threshold of 5 [53], ruling out multi-collinearity as a concern in this study. We also assessed multivariate normality as suggested by [54] and [55] in Table 1 which shows that a few of the constructs did not meet the normal criteria justifying the use of PLS-based SEM.

4. Results

To test our structural model, standardized path coefficients were reports along with the explanatory power – R^2 . Figure 1 shows that all nine hypotheses were supported. The proposed model explains 44% of the variance in turnover intentions, 21% in job satisfaction, 4% in positive emotions, 10% in work stress, and 12% in work isolation.

SNS work use had significant impact on work isolation (H1) ($\beta = .35, p < .001$). Work Isolation had significant effects on positive emotions (H2) ($\beta = -.20, p < .001$), job satisfaction (H3) ($\beta = -.31, p < .001$), and work stress (H4) ($\beta = .22, p < .001$). Positive emotions had significant effects on work stress (H5) ($\beta = -.21, p < .001$) and job satisfaction (H6) ($\beta = .29, p < .001$). Work stress (H7) ($\beta = .21, p < .001$), job satisfaction (H8) ($\beta = -.45, p < .001$), and positive emotions (H9) ($\beta = -.16, p < .01$) had significant effects on turnover intentions. Only exercise and age of all control variables were significant indicating that older employees ($\beta = .11, p < .05$) intend to leave while those who exercise ($\beta = -.14, p < .01$) tend to want to stay.



Notes: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Figure 1: Hypotheses with related coefficients

5. Discussions and Conclusions

This research examined how SNS used for business purposes diminished antisocial behaviors, such as work isolation, which, in turn, decreased positive emotions, increased work stress, job dissatisfaction, and increased turnover intentions. We believe that technostress may be the underlying culprit for these negative work attitudes and behaviors, and we believe that, unlike other ICT, SNS helps to overcome technostress.

Technostress explains a person's inability to healthily interact with ICTs [58]. In today's modern society, work-life balance problems are abundant due to undue stress and its consequences [2, 56, 57], which is often due to ICT use [58]. Interestingly, more physical risks due to ICT use have been expressed than psychosocial risks [2]. ICTs have increased expectations to extend work life beyond the typical 9am-5pm work day [2, 59], increasing technostress symptoms [2]. It is a misperception that since ICT use in businesses helps productivity, then all is well [2]. There are many unintended consequences to ICT use that inhibit work performance [2]. In particular, having ubiquitous access to email on mobile devices have been found to cause stress and antisocial behavior [2, [60, 61].

SNS had been found in prior research to cultivate positive personal life attitudes and behaviors [11], [12]. Similarly, our research found that when SNS is used for work-related tasks, technostress antisocial behaviors [2, 60, 61], such as work isolation, decreases. Work isolation should be minimized in businesses, because this was found to negatively affect a person's positive emotions, work satisfaction, and increased work stress, ultimately leading to turnover intentions.

We found positive emotions to decrease work stress and increase job satisfaction, due to emotional dissonance. Because people prefer their emotional state to match their organizational experience, positive

emotions improved work stress and job satisfaction. Job satisfaction was found to decrease turnover intentions, similarly due to emotional dissonance. However, work stress increased turnover intentions due to the conservation of resources theory. People possess limited resources and if they lose a particular resource, such as free time due to work stress, this may cause other resources to disappear, such work-life-balance. As a result, employees may seek employment elsewhere.

5.1 Managerial Implications

According to the findings in this research, managers should proactively find ways to increase positive emotions and job satisfaction at work, since these decrease work stress and turnover intentions. Our research found that using SNS for work-related purposes decreased work isolation, and therefore increased positive emotions, work satisfaction, and decreased work stress – leading to increased turnover intentions. Thus, internal SNS in businesses may be a preferred technology for managers to consider incorporating. Since technostress is a common issue with ICT use [58], it is possible that overuse of work SNS could trigger this, so managers should consider limiting SNS use to business hours. Both managers and businesses should consider introducing SNS as a way to improve employee satisfaction. This may also save businesses money down the road by reducing healthcare costs that may result from unhappy employees, as well as reduce costs involved in training a new employee due to reduced turnover intentions. If employees stay longer, hopefully this will reduce the costs involved in hiring and training new employees over time.

5.2 Further Research and Limitation

Further research is needed to determine the ideal amount of time sufficient for work SNS to have a positive impact on employees. Also, further research would be helpful to determine the degree that non-work related SNS activities improve business performance. This may include having users choose different affinity groups, not based on work specialties but based on hobbies or other non-work-related tasks. Although we have employed a priori and post hoc measures to mitigate non-response bias, low response bias is one of the limitations in this study. Therefore, future research should try other measures to improve response bias. In addition, it would be interesting to explore how different technology components within the software package may affect business outcomes. Prior research has found social-related SNS to improve personal attitudes and behaviors [11, 12], and

thus it would be interesting to determine if similar attitudes and behaviors would take place in businesses.

6. Conclusion

Internal social networking sites (SNS) provided by businesses were found to improve attitudes and behaviors and decreased turnover intentions. Social capital theory, emotional dissonance, and conservation of resource were underlying theories used to support our hypotheses. Internal SNS in businesses decreased work isolation. Work isolation decreased positive emotions and job satisfaction, and increased work stress. Positive emotions and job satisfaction decreased turnover intentions while work stress increased it. These findings were important for determining whether it is beneficial to incorporate internal SNS in businesses.

7. References

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Appendix A: Measurement Instrument

Construct	Items	Source
SNS work use	I use the [SNS Name] system to post updates on work projects	[41]
	I use [SNS Name] to arrange meetings with colleagues about work projects	
	I use [SNS Name] to share information with colleagues about organizational objectives, policies and procedures	
	I use [SNS Name] to gain access to others with expertise in a particular area	
	I use [SNS Name] to share my expertise in a particular area	
Positive emotions	During the past week, how frequently did you feel each of the following emotions?	[42], [43]
	Joy	
	Happiness	
	Contentment	
	Pride	
	Affection	
	Love	
Caring		
Work isolation	I am well integrated with the department/company where I work	[35], [36]
	I am kept in the loop regarding company social events/functions	
	I am part of the company network	
Job Satisfaction	All in all, I am satisfied with my job	[46], [47]
	I am pleased with my current job	
	I am happy with my current job	
Turnover	How often have you seriously considered quitting your present job?	[47]
Stress	Please indicate the extent to which the following words describe your job:	[44], [45]
	Demanding	
	Pressured	
	Hectic	
	Many things stressful	
	Pushed	