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The Impact Mechanism of Charismatic Leadership on Individual's Tacit Knowledge Sharing

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Abstract: Drawing upon charismatic leadership and intrinsic motivation theory, we developed a theoretical model to examine the impact mechanism of charismatic leadership on employees' tacit knowledge sharing intention in a temporary Enterprise Systems learning team. We conducted a survey-based field study to examine the theoretical model and hypotheses. A total of 153 questionnaires were distributed to ERP users of more than 20 subsidiaries of Beidahuang Group in China and 117 valid questionnaires were returned. Results from structural equation modelling analysis suggest that leader charisma has strong influence on psychological safety climate, which in turn has positive impact on individual's intrinsic motivation and their tacit knowledge sharing intention. Our results unpack the impact mechanism of leader charisma on individual's knowledge sharing behaviors, and provide guidelines for the team leader to exhibit appropriate leadership traits in order to promote a psychological safety climate and facilitate an effective knowledge sharing of Enterprise Systems.

Keywords: Charismatic Leadership, Psychological Safety Climate, Intrinsic Motivation, Tacit Knowledge Sharing, Enterprise Systems Learning

1. INTRODUCTION

Enterprise Systems (ES), such as ERP (Enterprise Resource Planning), SCM (Supply Chain Management) and CRM (Customer Relationship Management), are usually associated with complexity and high risk, and improving the chances of ES success has been a focus of research in the past decades^[1]. Extant literatures suggest that individual's knowledge sharing behavior is a significant antecedent of ES success, and a firm's advantages arise from cooperative social contexts that are conducive to the creation, coordination, transfer, and integration of knowledge distributed among its employees^[2]. Drawing on knowledge management research, organizational value of employees' knowledge increases when it is shared, and only when employees are willing to share knowledge with colleagues can organizations begin to manage knowledge resources effectively^[3]. Therefore, determining which factors promote or impede employee tendencies to engage in knowledge sharing behaviors is important for ES success^{[4][5]}.

Leadership has been identified as one of the most critical drivers of ES success across the Enterprise Systems lifecycle^{[1][6][7][8]}. However, by conducting a thorough analysis of the literatures, we found that most of the previous studies pay attention to the impact of senior leadership on organizational level ES success. Yet few studies have explored the impact mechanism of team leadership on individual-level knowledge sharing behaviors, especially in the context of Enterprise Systems learning.

In the context of Enterprise Systems learning, knowledge sharing among individuals is particularly important for them to develop a deep understanding of system functionalities and utilize Enterprise Systems in new and innovative ways beyond routine activities, which is beneficial to organizational performance^{[5][9]}. Knowledge management literatures posit that team leadership plays a significant role in influencing individual's knowledge sharing behaviors by affecting individual's motivation and attitude^{[10][11]}, whereas the specific mediating mechanism between the two constructs remains unexplored.

Our study is a step towards addressing the research gap. Drawing upon charismatic leadership and intrinsic

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motivation theory, we developed a theoretical model to examine the impact mechanism of team leader charisma on individual-level knowledge sharing behaviors in a temporary ERP learning team. Specifically, we focus on employees' tacit knowledge sharing since this type of knowledge is part of an individual's cognitive thought and perception, which is intuitive and more difficult to be shared^[12].

The following section is organized as follows. First, we draw on the extant literatures and develop the theoretical model and hypotheses. We then describe the construct operationalization and data collection procedure, and present the data analysis results. Theoretical and practical implications of these findings are finally discussed.

2. THEORY AND HYPOTHESES DEVELOPMENT

2.1 Charismatic Leadership and Psychological Safety Climate

Charismatic leadership style is identified as among the most critical leadership behaviors influencing individual behaviors^[13]. Charismatic leaders inspire others by talking optimistically about the future and about what needs to be accomplished, and instilling in their followers positive ideals that are related to desired outcomes. Employees are emotionally involved with charismatic leader since they believe in the leader's ability to accomplish organizational mission and objectives^{[6][14]}.

Previous literatures argued that charismatic leaders are good at expressing confidence in follower's ability and communicating high performance expectations by gaining trust, respect from their followers^[6], and this is beneficial to foster a shared belief within a team characterized by interpersonal trust and mutual respect in which people are comfortable being themselves and can trust each other without caring about interpersonal risk, which are significant characteristics of psychological safety climate^[16]. If the team leader is coaching-oriented and can attend to employees' personal needs, members will believe that participating in the open communication such as discussing errors and proposing innovative ideas is encouraged by the team without worrying about the potential risks and embarrassments caused by the unexpected operation errors, and they are more likely to devote more time and efforts in the training team^{[15][16]}. This leads to the following hypothesis:

H1: Charismatic leadership is positively associated with psychological safety climate.

2.2 Psychological Safety Climate and Intrinsic Motivation

Drawing upon motivation theory, intrinsic motivation indicates the inherent self-efficacy and sense of belonging derived from a specific activity. From an intrinsic motivational perspective, behavior is evoked by the need of employees to feel competent and self-determined in dealing with their environment^{[17][18]}.

When perceived high psychological safety climate, team members are more confident to share personal experiences and skills with others with regard to Enterprise Systems, since it alleviates employees' excessive concern about embarrassment and losing face if making mistakes in public when helping solve other's problem^[15]. Extant literatures suggest that Chinese people have a strong consciousness towards face and work out to protect their face from being damaged^{[19][20]}, thus a climate of psychological safety is especially important to stimulate individuals' intrinsic motivation by enhancing a sense of self-efficacy and confidence in their ability to overcome obstacles. This leads to the following hypothesis:

H2: Psychological safety climate is positively associated with intrinsic motivation.

2.3 Charismatic Leadership and Intrinsic Motivation

Charismatic leader exhibits idealized influence to followers by articulating a clear vision and instilling a sense of purpose with regard to positive outcomes, and tend to inspire and stimulate followers by affective commitment^{[13][14]}. This type of leadership is especially important to increase individual's self-efficacy and heighten their intrinsic motivation in the context of Enterprise Systems learning^[15].

The extant literatures have emphasized the positive impact of charismatic leadership on individual's

behaviors from a psychological theoretical perspective^{[7][14]}. Shamir et al. (1993) found that charismatic leadership plays a significant role in causing profound effects on followers' intrinsic motivations^[21]. Wang et al. (2005) suggested that charismatic leaders are more likely to excite follower's activeness by heightening their intrinsic motivation^[6]. While Choi (2006) posited that charismatic leadership is more likely to generate positive individual outcomes by displaying behaviors that stimulate followers' inner needs^[22]. Thus we propose the following hypothesis:

H3: Charismatic leadership is positively associated with intrinsic motivation.

2.4 Psychological Safety Climate and Tacit Knowledge Sharing

Previous studies have discussed the need to create psychological safety for individuals if they are to feel secure and capable of changing, since people tend to act in ways that inhibit their learning and knowledge sharing behaviors when they face the potential for threat^[16]. Extant literatures posit that high psychological safety climate can lead to mutual respect and trust among team members. Team members with higher trust prefer to treat others as friends and family members, and are more likely to work together cooperatively and share personal experiences with each other^{[10][23]}. This is beneficial to facilitate tacit knowledge sharing behaviors, which resides in individual's minds and is often expressed in the informal communication and interactions among team members^[5]. Empirical studies also found that psychological safety culture can make individuals feel they are cared and directed, which is beneficial to enhance individual's behavior intention towards Enterprise Systems learning and knowledge sharing^[15]. This leads to the following hypothesis:

H4: Psychological safety climate is positively associated with tacit knowledge sharing.

2.5 Intrinsic Motivation and Tacit Knowledge Sharing

The positive relationship between intrinsic motivation and tacit knowledge sharing has been largely discussed within the extant literatures. Intrinsic motivation refers to the judgments of individuals' competence and self-efficacy to organize and execute courses of action required to achieve specific levels of performance, which is self-determined and valued for individual's personal sake^[17]. Prior literatures have showed that employees with high confidence in their competence to accomplish specific activities are more likely to participate in group learning and share knowledge with others, since they believe that their personal experiences and skills in using Enterprise Systems can help others to better learn and understand system functionalities^{[3][24]}. Empirical studies also indicated that intrinsic motivation has positive impact on individual's tacit knowledge behavior in organizational and IS context^{[5][18]}. Thus we propose the following hypothesis:

H5: Intrinsic motivation is positively associated with tacit knowledge sharing.

In order to control other factors that may have impact on tacit knowledge sharing, we add individual's education background, use experience of Enterprise Systems and work experience as control variables in the research model. We select these particular variables because of their potential impact on knowledge sharing behaviors as suggested within the extant literature^{[5][6]}. The research model with five hypotheses and control variables is illustrated in Figure 1.

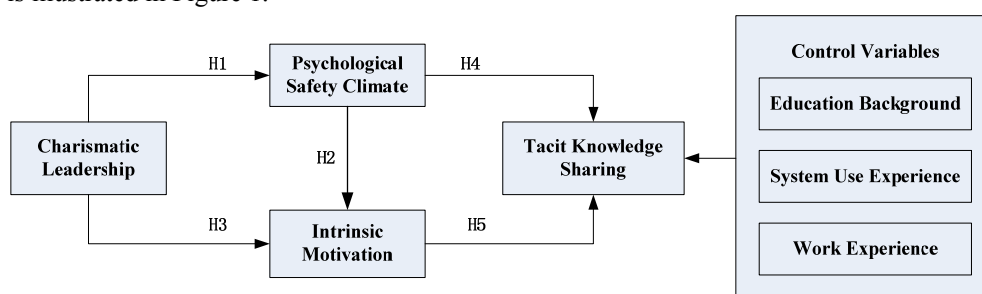


Figure 1. Research Model

3. RESEARCH METHODOLOGY

3.1 Questionnaire Design

We refer to the previous literatures to design measurement items for the four construct, and all of the items were assessed using a seven-Likert scale. The three items (CL1-CL3) of charismatic leadership was refined from the dimension of personal charisma (idealized influence) in the Multiple Leadership Questionnaire (MLQ). The instrument has been widely applied within the extant literatures and verified to have good reliability and validity^{[6][7]}. The construct of psychological safety climate was designed based on Edmondson (1999)'s study^[16], using items of PS1-PS3. We add the words of "I think" and "in the team" to better measure employees' subjective perception of psychological safety climate when learning Enterprise Systems in a temporary learning team. The construct of intrinsic motivation was adapted from Davis et al.(1992)^[25], using items of IM1-IM3. While individual's tacit knowledge-sharing intention was developed from Bock et al.(2005)^[26], using items of TKS1-TKS3. We refine some words of the original items to better reflect the context of Enterprise Systems learning in our study.

We conducted a pretest before the final data collection to examine the content validity of the item. Two professors in our research fields and an IT leader in charge of an ERP project were invited to examine if there is any ambiguity or inaccuracy in the questionnaire. Several revisions were made based on their suggestions.

3.2 Data Collection

The final data collection was conducted in twenty branches in Beidahuang Corporation in Heilongjiang province of China. Beidahuang has established a collaboration with UFIDA, which is the most famous Enterprise Systems software company in China, and has implemented NC (a set of Enterprise Systems management system for large-scale corporations) in the headquarters and each branch. Since NC management system is complicated and difficult to learn by the employees themselves, Beidahuang has arranged a six-month centralized learning of NC functionalities for all the branches in the headquarters. In each branch, 5-8 critical users were selected to participate in the learning team, and a system expert from UFIDA was appointed as the team leader in charge of the centralized training.

Two Ph.D students of our research team has participated in the whole learning process and are responsible to collect data from the users. Questionnaires were sent to the critical users in each branch that have participated in the centralized learning at the end of 2012, when the training project of NC management system has just ended. Totally 153 questionnaires were sent and 135 questionnaires were returned. We deleted the questionnaires that have incomplete or missing data and finally got 117 valid questionnaires, with 5 questionnaire for each branch averagely. All of the respondents have participated in the whole learning process of NC management system organized in the headquarters. The profiles of the respondents are listed in Table 1.

Table 1. Demographics of Individuals

		Category	Percentage
Demographics of Individuals	Sex	Male	31.6%
		Female	68.4%
	Education Background	High school and below	30.8%
		Bachelor's degree	67.5%
		Master's degree and above	1.7%
	Work Experience	Less than 1 year	2.5%
		1-10 years	31.6%
		10-20 years	29.9%
		More than 20 years s	36.0%
	ERP Use Experience	Less than 1 year	4.3%
		1-5 years	41.9%
		5-10 years	22.2%
		More than 10 years	31.6%

4. STRUCTURAL EQUATION MODEL ANALYSIS

Structural equation modeling (SEM) method is employed to examine the research model as it is capable of allowing the incorporation and process of both unobserved(latent) and observed variables in a same model, and it can also handle errors of measurement within exogenous variables in a better manner than the traditional regression analysis method^[27]. We used SmartPLS (Partial Least Squares) as the primary statistical tool to examine the research model since it is appropriate for early stage research models where the emphasis is on theory exploration and prediction. Following the two-step analysis procedure of structural equation modeling, we first examined the measurement model to assess the validity and reliability of the constructs, and then examined the structural model to analyze the path relationship between the constructs.

4.1 Measurement Model

The measurement model is examined to assess the reliability, convergent validity and discriminant validity of the latent variables. Reliability refers to the consistency of the item that measures the same construct, and it is assessed by examining if the composite reliability and factor loadings of the construct is greater than 0.7^[28]. Convergent validity reflects the degree to which the items measuring the same construct correspond, and it is assessed by checking if the average variance extracted (AVE) of each construct from its indicators is greater than 0.5^[29]. Table 2 illustrates the analysis results of factor loadings, composite reliability and AVE of the four constructs in our research model.

Table 2. Analysis Results of the Measurement Model

Construct	Items	Factor Loadings	Composite Reliability	Average Variance Extracted (AVE)
Charismatic Leadership	CL1	0.97	0.97	0.92
	CL2	0.96		
	CL3	0.94		
Psychological Safety Climate	PS1	0.93	0.96	0.88
	PS2	0.96		
	PS3	0.93		
Intrinsic Motivation	IM1	0.94	0.97	0.91
	IM2	0.95		
	IM3	0.96		
Tacit Knowledge Sharing	TKS1	0.94	0.97	0.89
	TKS2	0.95		
	TKS3	0.93		

From Table 2 we can see that all factor loadings have exceeded 0.9, while the composite reliability of each construct are also higher than 0.9, providing an adequate support for reliability of the constructs. As illustrated in Table 3, the average variance extracted of each construct has exceeded 0.85, which is far above the criterion of 0.5, suggesting a good convergent validity of the construct.

Discriminant validity refers to the degree to which items differentiate between constructs. Following Chin(1998)^[28], we examined discriminant validity of the construct by analyzing the correlation between constructs to check whether the square root of the average variance extracted of each construct exceeded the construct's correlation with other constructs. Table 3 illustrates the correlation between constructs. From Table 3 we can find that the square root of the average variance extracted of each construct is higher than the construct's correlation with other constructs, demonstrating a good discriminant validity of the constructs.

Table 3. Correlation between Constructs

	Charismatic Leadership	Psychological Safety Climate	Intrinsic Motivation	Tacit Knowledge Sharing
Charismatic Leadership	0.96			
Psychological Safety Climate	0.37	0.94		
Intrinsic Motivation	0.33	0.79	0.95	
Tacit Knowledge Sharing	0.73	0.39	0.32	0.94

Note: Diagonal italic values are the square roots of AVE of each construct

4.2 Structural Model

We examined the structural model in SmartPLS to analyze the path relationship between constructs. The bootstrapping procedure with re-sampling method was used to estimate the statistical significance of the parameter estimates to derive valid standard errors or t-values. The path analysis result is described in Figure 2.

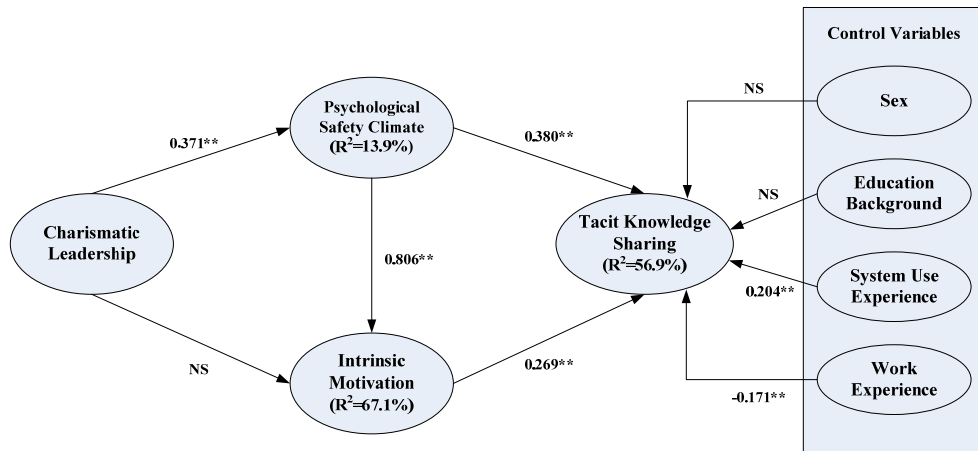


Figure 2. SmartPLS analysis results of the research model II

(Notes: ** represents $p < 0.01$; * represents $p < 0.05$; NS represents Not Significant)

From Figure 2 we can find that charismatic leadership is positively related with psychological safety climate ($\beta = 0.371$, $p < 0.01$). As expected, psychological safety climate has strong influence on intrinsic motivation ($\beta = 0.806$, $p < 0.01$). The above results can provide support for hypothesis H1 and H2. However, the charismatic leadership has no direct effect on intrinsic motivation. Following Baron and Kenny (1986)'s test of mediating effect^[30], we removed the link between psychological safety climate and intrinsic motivation and rerun the model. Interestingly, we find that after removing the link, charismatic leadership is positively associated with intrinsic motivation ($\beta = 0.335$, $p < 0.01$), indicating that psychological safety climate fully mediates the relationship between charismatic leadership and intrinsic motivation. We then examined the relationship between psychological safety climate, intrinsic motivation and tacit knowledge sharing. As illustrated in Figure 2, we can see that both psychological safety climate and intrinsic motivation are positively associated with tacit knowledge sharing ($\beta_1 = 0.380$, $\beta_2 = 0.269$, $p < 0.01$). The above results can provide support for hypothesis H4 and H5.

With regard to the control variables, we can see that employee's use experience of Enterprise Systems is positively associated with tacit knowledge sharing, and employee's work experience is negatively associated with tacit knowledge sharing. While sex and education background are not significantly associated with tacit knowledge sharing. The above results are consistent with the previous empirical studies, suggesting that younger users who are more familiar with Enterprise Systems are more likely to share what they know with others^[5]. In terms of the R^2 values of the endogenous variables explained by the exogenous constructs, Figure 2 shows that charismatic leadership and psychological safety climate explained 67.1% variance of intrinsic motivation and the R^2 value of tacit knowledge sharing is 56.9%, indicating a good explanatory power of the research model^[27].

5. CONCLUSIONS AND CONTRIBUTIONS

In this study, we developed a research model to examine the impact of charismatic leadership on employees' tacit knowledge sharing behaviors in a centralized training team. A field survey was conducted and totally 117 valid questionnaires were collected from Beidahuang Group in Heilongjiang province of China.

Structural equation modelling analysis results suggests that charismatic leadership is positively associated with psychological safety climate, which in turn has positive impact on employee's intrinsic motivation and tacit knowledge sharing intention. Interestingly, we find that psychological safety climate fully mediates the relationship between charismatic leadership and intrinsic motivation.

For theoretical contributions, our study unpacked the impact mechanism of charismatic leadership on tacit knowledge sharing by integrating psychological safety climate and intrinsic motivation in a same model, and examined their joint effect on individual's tacit knowledge sharing behaviors in the context of Enterprise Systems learning. The empirical findings can contribute to the extant IS leadership and knowledge sharing literatures from a psychological motivation theoretical perspective. In terms of practical contributions, this study can provide guidelines to the board of the firm in terms of team leader selection and appointment. The empirical results suggest that leader's personal charisma can facilitate a climate of psychological safety within the team, which is beneficial to foster employees' attitudes and intention towards tacit knowledge sharing. Thus the board should consider charismatic leadership traits as an important factor when selecting and evaluating a leader in charge of the Enterprise Systems learning team, such as the case of Beidahuang Group in our study.

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REFERENCES

- [1] Shao, Z., Feng, Y., & Hu, Q. (2015b). Effectiveness of top management support in enterprise systems success: a contingency perspective of fit between leadership style and system life-cycle. *European Journal of Information Systems*. Advance online publication, July 21, doi:10.1057/ejis.2015.6
- [2] Jones, M. C., Cline, M., & Ryan, S. (2006). Exploring knowledge sharing in ERP implementation: An organizational culture framework. *Decision Support Systems*, 41, 411-434.
- [3] Chou, H.W., Lin, Y.H., Lu, H.S., Chang, H.H. and Chou, S.B. (2014). Knowledge sharing and ERP system usage in post-implementation stage. *Computers in Human Behavior*, 33(2), 16-22.
- [4] Shao, Z., Feng, Y., & Liu, L. (2012). The mediating effect of organizational culture and knowledge sharing on transformational leadership and enterprise resource planning systems success: an empirical study in china. *Computers in Human Behavior*, 28(6), 2400-2413.
- [5] Shao, Z., Wang T. and Feng, Y. (2015a). Impact of organizational culture and computer self-efficacy on knowledge sharing. *Industrial Management & Data Systems*, 115(4), 590- 611.
- [6] Wang, E., Chou, H., & Jiang, J. (2005). The impacts of charismatic leadership style on team cohesiveness and overall performance during ERP implementation. *International Journal of Project Management*, 23(3), 173-180.
- [7] Neufeld, D. J., Dong, L., & Higgins, C. (2007). Charismatic leadership and user acceptance of information technology. *European Journal of Information Systems*, 16(4), 494-510.
- [8] Ke, W. and Wei, K.K. (2008). Organizational culture and leadership in ERP implementation. *Decision Support Systems*, 45(2), 208-218.
- [9] Liu, L., Feng, Y., Hu, Q., & Huang, X. (2011). From transactional user to VIP: how organizational and cognitive factors affect ERP assimilation at individual level. *European Journal of Information Systems*, 20(2), 186-200.
- [10] Xue, Y., Bradley, J., & Liang, H. (2011). Team climate, empowering leadership, and knowledge sharing. *Journal of*

- Knowledge Management. 15(2), 299-312.
- [11] Lee, D. S., Lee, K. C., Seo, Y. W., & Choi, D. Y. (2015). An analysis of shared leadership, diversity, and team creativity in an e-learning environment. *Computers in Human Behavior*, 42, 47–56.
 - [12] Suppiah, V. and Sandhu, M.S. (2011). Organizational culture's influence on tacit knowledge-sharing behaviour. *Journal of Knowledge Management*, 15(3), 462-477.
 - [13] House, R.J., Spangler, W.D. and Woyke, J. (1991). Personality and charisma in the U.S. presidency: a psychological theory of leader effectiveness. *Administrative Science Quarterly*, 36, 364–397.
 - [14] Conger, J.A, Kanungo, R.N. and Menon, S.T. (2000). Charismatic leadership and follower effects. *Journal of Organizational Behavior*, 21(7), 747–761.
 - [15] Shao, Z., Feng, Y. and Hu, Q. (2013). The impact mechanism of transformational leadership style on exploitative and exploratory learning of ERP systems. The 17th Pacific Asia Conference on Information Systems (PACIS), June 18-22, 2013, Jeju, Korea.
 - [16] Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383.
 - [17] Deci, E.L., and Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*, Plenum Press, New York.
 - [18] Lin, H. F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of information science*, 33(2), 135-149.
 - [19] King, A.Y.C. (1988). Face, shame and the analysis of behavior patterns of the Chinese. In: *The Psychology of the Chinese*, Yang, G.S. (ed.), pp. 319–345. Guiguan Press, Taipei, Taiwan.
 - [20] Huang, Q., Davison, R. M., & Gu, J. (2011). The impact of trust, guanxi orientation and face on the intention of chinese employees and managers to engage in peer-to-peer tacit and explicit knowledge sharing. *Information Systems Journal*, 21(6), 557-577.
 - [21] Shamir B, House R.J. and Arthur, M.B. (1993). The motivational effects of charismatic leadership: a self-concept based theory. *Organization Science*, 4(4), 577–594
 - [22] Choi, J. (2006). A motivational theory of charismatic leadership: Envisioning, empathy, and empowerment. *Journal of Leadership & Organizational Studies*, 13(1), 24-43.
 - [23] Te'eni, D. (2001). Review: a cognitive-affective model of organizational communication for designing IT, *MIS Quarterly*, 25(2), 251-312.
 - [24] Bock, G.W. and Kim, Y.G. (2002). Breaking the myths of rewards: an exploratory study of attitudes about knowledge sharing, *Information Resource Management Journal*. 15(2), 14–21.
 - [25] Davis, F.D., Bagozzi, R.P., and Warshaw, P.R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace," *Journal of Applied Social Psychology*. 22(14), 1111-1132.
 - [26] Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS quarterly*, 29(1), 87-111.
 - [27] Gefen, D. and Straub, D. (2005). A practical guide to factorial validity using PLS-graph: tutorial and annotated example. *Communications of the Association for Information Systems*, 16, 91-109.
 - [28] Chin, W.W. (1998). The partial least squares approach to structural equation modeling. G.A. Marcoulides, ed. *Modern Methods for Business Research*. Lawrence Erlbaum Associates, Mahwah, NJ 295–336.
 - [29] Pavlou, P.A. and Fygenonson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, 30(1), 115-141.
 - [30] Baron, R.M. and Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations, *Journal of personality and Social Psychology*, Vol.51 No.6, pp.1173-1182