

A factor Analysis on Teamwork Performance -an Empirical Study of Inter-instituted Collaboration

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Abstract

Problem Statement: Inter-instituted collaboration has attracted broad attention for educational quality improvement in the last decade. The team performance of these innovative team projects received foremost attention, particularly with knowledge-sharing, emotional intelligence, and team conflicts.

Purpose of Study: The purpose of the study was to empirically investigate the relationships among these three factors. The sample of this study was 178 professors, involving collaboration projects from twenty vocational institutes at the higher-education level.

Methods: The collected data were statistically analyzed using SPSS 17.0 for Windows and LISREL 8.70 for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Also, the study undertook the Maximum Likelihood Estimation to analyze the linear relationships among the three major variables.

Results: The statistical analysis result indicated that knowledge-sharing created a positive effect on team performance. On the other hand, team conflict caused a negative effect on team performance. Emotional intelligence did not have any significant direct effect on team performance but played a moderating role.

Conclusions and Recommendations: This study concluded that vocational institutes are academic organizations where knowledge-sharing is a crucial mission and where strategies are put into place to fulfill that mission; team conflict should be avoided for better team performance.

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This study finally proposed several suggestions for improved team performance.

Keywords: Knowledge-sharing, emotional intelligence, team conflict, team performance, collaboration

Introduction

In this era of knowledge-based economy, it becomes increasingly important for higher-education institutes to create extensive educational resources and reinforce the sharing mechanism for a better quality of education (Pausits & Pellert, 2009). In the last decades especially, the vocational and technical institutes at the higher education level in Taiwan have rapidly grown from 67 institutes in 2001 to 77 institutes in 2010 (Ministry of Education, 2011). This rapid growth in terms of institute and student quantities consequently attenuated educational financial resources and threatened educational quality. This superficially prosperous but truthfully detrimental educational trend instigated the vigilance of university administrators to integrate the existent educational resources for a better educational quality. A series of inter-instituted collaboration policies and projects was proposed among the vocational institutes at the higher-education level to create the greatest benefit for students' learning achievement from the limited resources.

The quality of this inter-instituted collaboration and team performance highly relied on the function of knowledge-sharing in the collaboration team (Louis, 2006; Mohammadi, Yeganeh, & Rad, 2010). The team performance also reflected the collaboration attitude, competence, and culture behind each participant institute and team member. Like any other professional community, team conflicts somehow inevitably exist in participant institutes and even among faculty members with a high social status. These team conflicts, such as competition and varieties, usually have destructive effects on the interaction quality and collaboration achievement (Jehn & Chatman, 2000). In addition, participants' emotional intelligence is an important factor dominating team performance during the growth processes (Birn, Lasala, & Edd, 2011).

However, due to the rise of conflicts, the question is asked whether the emotional intelligence of faculty members, who possess a high social status and well-educated disposition, influences team performance the same as any other group of members. Does a group's emotional intelligence affect team performance through other mediator factors, such as knowledge-sharing and team conflict? What are the relationships among knowledge-sharing, team members' emotional intelligence, team conflict, and team performance? The main purpose of this research was to explore the relationships among the factors of knowledge-sharing, emotional intelligence, and team conflicts concerning team performance during the processes of undertaking inter-instituted collaboration projects.

Literature Review

The inter-instituted and interdisciplinary academic teams have attracted increasing attention in recent years to undertake sophisticated and innovative research for the development of advanced skills. In the processes of team work, the collaboration heavily relied on the effective coordination of participants from various fields and dispositions, as well as cooperative strategies (Hoegl & Gemuenden, 2001). Inter-instituted collaboration mainly integrated institutes with different backgrounds and professional expertise; in this inter-instituted team, conflicts are inevitable, even though the team was established for knowledge-sharing with the major purpose of cooperatively solving mutual problems for better team performance. When any faculty member joins the team, his\her supportive attitude might create a positive emotional atmosphere, whereas an obstructive attitude might create negative emotions. Both types of emotion would influence team performance (Jordan, Field, & Armenakis, 2002).

Knowledge-Sharing

Vocational and technical institutes at the higher-educational level purport to deliver, apply, and create knowledge for youngsters to succeed in the workplace; knowledge-sharing is therefore a major purpose in the institutes as a matter of course and a crucial strategy to improve academic achievement and faculty performances (Senge, 1998). With the current economy being knowledge-based, knowledge-sharing has become increasingly important due to the following: (1) Intangible products, such as inventive ideas, processes, and information are taking a growing share of global trade from the traditional, tangible goods of the manufacturing economy; (2) Increasingly, the only sustainable competitive advantage is continuous innovation; (3) Expertise learnt and applied in one part of the organization should be equivalently utilized in another (Argote & Ingram, 2000; Gurteen, 1999).

In faculty teamwork for educational improvement, each faculty member is encouraged to provide his\her professional expertise to reach the best team achievement. They are recompensed for this collaboration (Nancy, 2000; Wang, 2004). While working on cooperative projects, each participant faculty member reciprocally achieves better competencies from other team members through knowledge-sharing processes. Knowledge-sharing, therefore, is recognized as a crucial factor in benefiting organization learning, knowledge creation, and team performance (Bartol & Srivastava, 2002).

The effectiveness and efficiency of knowledge-sharing is highly dependent on the internal and external culture of the organization team, such as team members' cognition and emotional intelligence, their communication mechanism in team work, and their knowledge application to the organizational mission (Goh, 2002; Gurteen, 1999). The quality and benefits of knowledge-sharing seem to rely on team members' emotional intelligence, collaborative culture, and team conflicts (Cummings, 2002; Wu, Ho, Lin, Chang, & Chen, 2013). A question for research is whether knowledge-sharing in an inter-instituted team, consisting of a well-educated faculty with elite

personalities and socio-economic status, would play a similar role and be affected by similar factors as knowledge-sharing in ordinary teams.

Emotional Intelligence

Emotional Intelligence (EI) is a skill or ability or self-perceived ability to identify, assess, and control the emotions of oneself, others, and groups. Salovey and Mayer (1997) also declaimed EI as the ability to perceive emotion, integrate emotions into the thought process, understand emotions and regulate emotions to promote personal growth. To be more specific, emotional intelligence includes two important components: (1) Regulation of emotions (ROE), which relates to individuals' ability to regulate their emotions, thus enabling a more rapid recovery from an emotional climax or distress; and (2) Use of emotions (UOE), which relates to individuals' ability to make use of their emotions by directing them toward constructive activities and personal performance (Davies, Stankov, & Roberts, 1998). In other words, EI represents the ability to deal with personal emotions for intra-personal and inter-personal relationships. EI is the subset of social intelligence to monitor one's own and others' feelings and emotions, to adjust emotions for favorable interpretation, and to express personal EI with socially acceptable and even respected behaviors.

Emotional intelligence is recognized as an inherent trait to identify, control, and present personal emotions while individuals encounter outside stimuli (Wu & Zheng, 2003). Emotional intelligence reflects the individual personality and affects interpersonal relationships. Several studies declaimed that superior emotional intelligence included some concrete abilities, as follows: (1) to appropriately identify, evaluate, and deliver personal emotions (Salovey & Mayer, 1997); (2) to integrate and manage personal emotions in order to facilitate better-quality thinking skills (Jordan & Troth, 2011); (3) to be aware of others' emotions for better management of personal relationships (Zhang & Wang, 2011); and (4) to exploit various styles of emotions to facilitate problem-solving efficiency (Wu et al., 2003).

In the team activity, members' emotions and potential emotional traits will affect the organization and other members, including the team climate. The relationships among the team members consequently influence team spirit and job performance (Rosete & Ciarrochi, 2005). Synthetically, team members' emotional intelligence usually constructs an organizational culture and influences team performance.

Team conflict

Studies revealed that team performance highly relied on team cohesion, mutual trust, and reciprocal support among team members. These crucial factors ensure team work to reach high performance and ultimate success (Plowman & McDonough, 2010). Team conflict usually results from the inner discord of team members and is expressed in outer disharmony or the underachievement of team performance. Team conflict could be provoked by team members' personal divergence, such as cognition, roles, and ideology, and interpersonal (even inter-group) relationships. That is, there are two major types of team-conflict factors, one resulting from interpersonal relationships within the group and another resulting from tasks developed and/or required by the team. In this study, the team conflicts

include task conflicts and relationship conflicts (Jehn & Chatman, 2000). Both conflicts create unfavorable interaction, information delivery, task cooperation, and substantive supports among team members, as well as a lack of sympathy for team goals. Those indifferent behaviors and attitudes degrade team performance (DeDreu & Weingart, 2003).

The team conflict discussed in this study focused on the hindrance of team cohesion and performance. Plowman and McDonough (2010) concluded that conflicting team members could not trust each other and would tend to limit communication for self-protection. Members only made an effort at self-performance but not toward team goals; minor discussions on initiative ideas would be initiated among team members. Obviously, unconstructive team conflict would limit knowledge-sharing and innovation inspiration for meaningless self-protection, which would certainly diminish team performance.

Team performance

Currently, this society highly values cooperative relationships (both the relationships of competition and cooperation) among institutes for the assurance of educational quality and improvement. Vocational institutes at the higher-educational level are therefore dedicated to inter-instituted collaboration projects for resource sharing and reciprocal supports. These projects place a high regard on team performance in this innovative policy.

Team performance is usually defined as the extent to which a team can reach the predictable goal or completely reach the expected quality of a task (Faraj & Sproull, 2000). Studies revealed several factors regarding team performance, which included the following: (1) role identity and commitment of each member (Senior, 1997), (2) team cohesiveness, (3) communication mechanism and information-sharing quality (Mesmer-Magnus & DeChurch, 2009), (4) homogeneity of members to team goals, and (5) consensus among team members toward goal approaches (Plowman & McDonough, 2010). Therefore, team performance is often improved. In brief, team performances based on the effects of teamwork strongly support the notion that effective information-sharing between team members increases both performance and productivity through interaction (Mesmer-Magnus et al., 2009).

Another factor manipulating team performance is team members' emotional intelligence (Rapisarda, 2002); in the research of Davies, Stankov, and Roberts (1998), it was revealed that individuals with consistent and pleasant emotional intelligence would be beneficial to team cohesion and performance.

Theoretic framework

This study was designed to explore the relationships among the factors of team performance in inter-instituted collaboration projects in Taiwan. The aforementioned literature review seemingly concluded that team performance could be affected by knowledge-sharing (Plowman & McDonough, 2010); that the knowledge-sharing mechanism and quality varied due to team members' emotional intelligence (Mesmer-Magnus et al., 2009); and that team members' EI management and

expression-quality might provoke team conflict and consequently determinate team performance (DeDreu & Weingart, 2003; Jehn & Chatman, 2000). Because of the interactive relationships among these factors, this study proposed the following hypotheses:

- H1: Emotional intelligence would cause a significantly positive effect on knowledge-sharing (H1-1); emotional intelligence would also have a significantly positive effect on team performance through knowledge-sharing as a moderating factor (H1-2).
- H2: Emotional intelligence would create a significantly negative effect on team conflict (H2-1); emotional intelligence would also create a significantly negative effect on team performance through team conflict as a moderating factor (H2-2).
- H3: Emotional intelligence would create a significantly positive effect on team performance.
- H4: Knowledge-sharing would create a significantly positive effect on team performance.
- H5: Team conflict would create a significantly negative effect on team performance.

Methodology

Consistent with the research background and purpose, this study proposed the conceptual framework to examine the linear relationships among the major variables, including knowledge-sharing, emotional intelligence, team conflict, and team performance.

Research population and sample

The population was composed of the faculty members of 22 vocational institutes at the higher-educational level located in Central Taiwan who participated in the inter-instituted collaboration projects (N=250). The survey questionnaires were delivered to all faculty members who participated the collaboration projects. After three follow-up emails to the non-respondents, a total of 196 questionnaires were returned (approximately 71.2% response rate), including 18 incomplete respondents; thus, 178 questionnaires, as a sample of this study, were finally analyzed for this study.

The analysis result indicated a high percent of sampled participants aged between 41 and 50 (N=123, 69.1%) and 55 of faculty members (30.9%) aged 31 to 40 (Table 1). These project participants included 85 Assistant Professors (47.7%), 60 Associate Professors (33.7%), and 33 Full Professors (18.5%). These participants had various periods of experience involving these inter-instituted collaboration projects (Table 1).

Table 1
Backgrounds of Sampled Participants

<i>Variables</i>	<i>Level</i>	<i>N</i>	<i>Percent (%)</i>
Age	30-40	55	30.9
	41-50	67	37.6
	51 above	56	31.5
Gender	Male	97	54.5
	Female	81	45.5
Position	Professor	33	18.5
	Associate Professor	60	33.7
	Assistant Professor	85	47.8
Participating Experiences (years)	1-2	67	37.6
	2-3	60	33.7
	over 3	51	28.7

Research instrument

The questionnaire used in this study consisted of four domains; each domain was surveyed using an adapted questionnaire, revised from previous studies addressing similar issues to this one. This complete questionnaire included the following: (1) a knowledge-sharing domain using six items revised from the questionnaire developed by Van den Hooff and Van Weenen (2004); (2) an emotional-intelligence domain using eight items revised from the questionnaire developed by Mayer & Geher (1996); (3) a team-conflict domain using four items adapted from Jehn and Chatman's research (2000); and (4) a team-performance domain using eight items adapted from the findings of Edmondson (1999). This 26-item questionnaire used a 5-point Likert Scale (5 = strongly agree; 1 = strongly disagree). The reliabilities of this questionnaire were approved by means of the Cronbach's α in emotional intelligence ($\alpha=0.93$), knowledge-sharing ($\alpha=0.87$), team conflict ($\alpha=0.87$), and team performance ($\alpha= 0.93$; Table 2). All Cronbach's α values exceeded the benchmark of 0.70, indicating that the instrument possessed an acceptable internal consistency (Nunnally & Bernstein, 1994).

Data analyses

The collected data were statistically analyzed using SPSS 17.0 for Windows and LISREL 8.70 for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Also, the study undertook the Maximum Likelihood Estimation to analyze the linear relationships among the major four variables. This study also examined each hypothesis for the purpose of research to determine the direction and significance of the relationship structure.

Results

The Results of Measurement Model Analyses

The data were first analyzed to ensure the instrument quality by Convergent validity and Discriminant validity. The four major indices were then identified, including factor loading, parameter estimation, average variance extracted, and composite reliability, proposed by Bagozzi & Yi (1988).

The instrument quality should be ensured by the acceptable factor loadings above 0.50 and the significant t-value (Bagozzi & Yi, 1988; Hair, Black, Babin, & Anderson, 2009). The factor loadings tested in this instrument were between 0.58 and 0.94 with the t-values higher than 1.96 and within a significance level of 5% (Table 2); thus, these values constituted evidence of the convergent validity. This data analysis indicated that this measurement possessed an acceptable convergent validity. The composite reliability in acceptable latent variables must reach 0.6 and above (Fornell & Larcker, 1981). The internal reliabilities of latent variables were also tested to be acceptable (within 0.86 to 0.93), reaching the standard of above 0.60 (Fornell & Larcker, 1981).

Moreover, convergent and discriminant validities were evaluated using the average variance extracted. On the basis of the test's criterion, each value of average variances extracted should exceed 0.50 (Bagozzi & Yi, 1988). All of the average variances extracted for emotional intelligence (0.61), knowledge-sharing (0.54), team conflict (0.61), and team performance (0.61) exceeded the threshold of 0.50, which indicates that this study had adequate levels of convergent and discriminant validity.

The analysis results of Structure Equation Modeling (SEM)

The goodness-of-fit of the structural model can be evaluated using many statistics of the SEM structural model. The Chi-square (χ^2) test, Normed Fit Index (NFI), non-Normed Fit Index (NNFI), Comparative-Fit Index (CFI), Incremental Fit Index (IFI), and Root Mean Square Error of Approximation (RMSEA) have been applied to the evaluated model fitness (Jöreskog & Sörbom, 1996). In this study, except for the χ^2 test ($\chi^2=761.48$, $df=289$, $p<0.001$) and RMSEA (0.09) that could not determine the goodness-of-fit of the structural model ($\chi^2=761.48$, $df=289$, $p<0.001$), other statistics such as χ^2/df (2.63), NFI (0.91), NNFI (0.93), CFI (0.94), and IFI (0.94), all indicated an acceptable model fitness for the structural model. This model, hence, could appropriately explain the linear relationship among the lurking variables in this study, such as emotional intelligence, knowledge-sharing, team conflict, and team performance (Jöreskog & Sörbom, 1996).

Table 2
Factor Loadings, t-Value, AVE, and CR

Latent Variables	Measurement	Factor Loadings	t-Value	AVE*	CR**
Emotion Intelligence (EI)	EI 1	0.88	14.58	0.61	0.93
	EI 2	0.81	12.75		
	EI 3	0.74	11.16		
	EI 4	0.82	13.12		
	EI 5	0.75	11.55		
	EI 6	0.77	11.83		
	EI 7	0.67	9.80		
	EI 8	0.81	12.83		
Knowledge-Sharing (KS)	KS 1	0.60	8.41	0.54	0.87
	KS 2	0.67	9.61		
	KS 3	0.70	10.17		
	KS 4	0.72	10.48		
	KS 5	0.86	13.55		
	KS 6	0.83	12.98		
Team Conflict (TC)	TC 1	0.68	9.98	0.61	0.86
	TC 2	0.94	15.92		
	TC 3	0.88	14.43		
	TC 4	0.58	8.12		
Team Performance (TP)	TP1	0.84	13.77	0.61	0.93
	TP2	0.92	15.98		
	TP3	0.93	16.25		
	TP4	0.91	15.73		
	TP5	0.70	10.51		
	TP6	0.59	8.51		
	TP7	0.64	9.38		
	TP8	0.65	9.59		

*AVE: Average variance extracted= $(\sum\lambda^2) / [\sum\lambda^2 + \sum(\theta)]$

**CR: Composite reliability= $(\sum\lambda)^2 / [(\sum\lambda)^2 + \sum(\theta)]$ (Jöreskog & Sörbom, 1996)

Table 3

Covariance Matrix

	<i>EI</i>	<i>KS</i>	<i>TC</i>	<i>TP</i>
<i>EI</i>	0.78*			
<i>KS</i>	0.28	0.73*		
<i>TC</i>	-0.21	-0.41	0.78*	
<i>TP</i>	0.31	0.64	-0.67	0.78*

*A diagonal line shows the square of average variance extracted.

The causal relationships among variables were constructed and verified through the SEM (Table 4, Figure. 1). The SEM analysis obtained the following results: (1) Emotional intelligence created a significantly positive effect on knowledge-sharing ($\gamma_{11}=0.29$, $t=3.31$, $p<0.001$); emotional intelligence also significantly created an indirect positive effect on team performance through knowledge-sharing ($0.29 \times 0.45=0.13$, $p<0.01$). Hypothesis 1 was thus accepted. Knowledge-sharing was proved to play the mediator between emotional intelligence and team performance. (2) Emotional intelligence created a significantly negative effect on team conflict ($\gamma_{21}= -0.22$, $t= -2.68$, $p<0.01$); emotional intelligence also significantly created a negative but indirect effect, through team conflict, on team performance ($-0.22 \times (-0.52) =0.11$, $p<0.01$). Thus, Hypothesis 2 was confirmed, and it was concluded that team conflict acted as mediator between emotional intelligence and team performance. (3) The effect of emotional intelligence on team performance was not significant ($\gamma_{31}=0.10$, $t=1.55$, $p>0.05$); thus, Hypothesis 3 was rejected. It meant emotional intelligence would not directly affect team performance. (4) The relationship between knowledge-sharing and team performance was significantly and positively related ($\beta_{31}=0.45$, $t=5.60$, $p<0.001$), confirming Hypothesis 4. (5) Team conflict was also proved to possess a negative effect on team performance ($\beta_{32}=-0.52$, $t=-6.77$, $p<0.001$); thus, Hypothesis 5 was confirmed.

Table 4

The Path Coefficients of SEM and t-value

<i>Hypothesis</i>	<i>Route Relationship</i>	<i>Path Coefficient</i>	<i>t-Value</i>	<i>Results</i>
H ₁₋₁	EI→KS	0.29	3.31	confirmed
H ₁₋₂	EI→KS→TP	0.13	2.23	confirmed
H ₂₋₁	EI→TC	-0.22	-2.68	confirmed
H ₂₋₂	EI→TC→TP	0.11	2.03	confirmed
H ₃	EI→TP	0.10	1.55	rejected
H ₄	KS→TP	0.45	5.60	confirmed
H ₅	TC→TP	-0.52	-6.77	confirmed

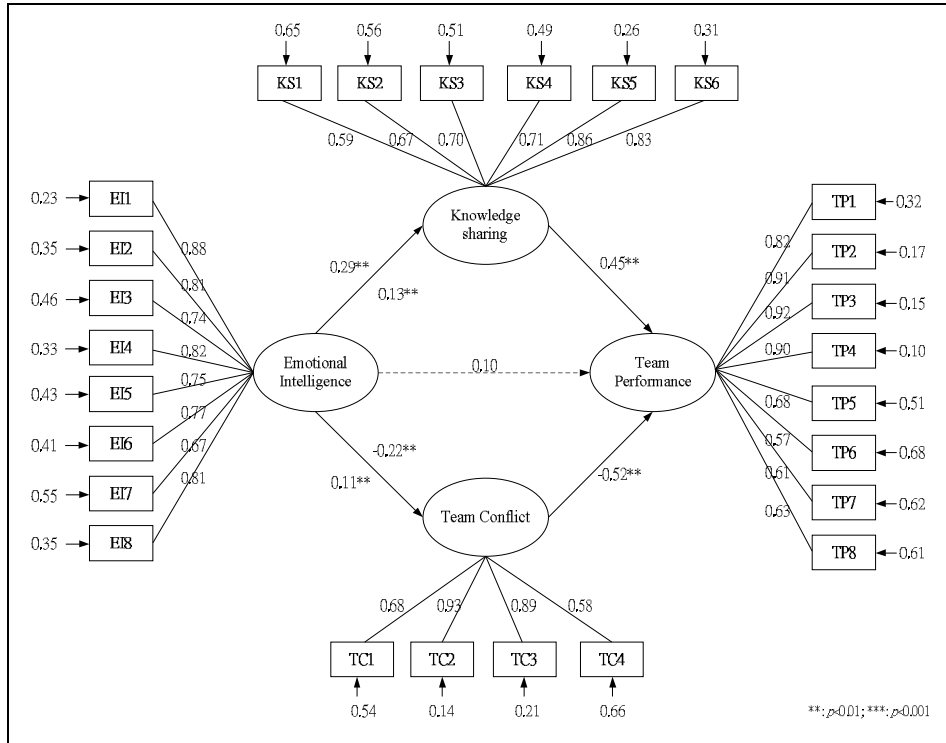


Figure 1. Structure model

Discussion and Conclusion

This study mainly investigated factor effects on the team performance of faculty members while they were conducting inter-instituted collaboration projects. The factors proposed in this higher-education setting included knowledge-sharing, emotional intelligence, and team conflict. The research findings provoked some discussion issues as follows:

- (1) Knowledge-sharing played an important role among faculty members in higher-education settings.

This study verified that knowledge-sharing had a significant effect on team performance in higher-education settings, just like the research findings of Nancy (2000). This finding seemingly reflected that faculty members, even belonging to competitive organizations, graciously appreciated the knowledge-sharing mechanism in collaboration projects for the enhancement of both their personal academic achievement and team performance. Similar to the findings of Hoegl and Gemuenden (2001), this study reconfirmed that faculty members highly appraised both intra- and inter-instituted knowledge-sharing.

- (2) Team conflict in inter-instituted collaboration significantly diminished team performance.

The result of the study revealed that team conflict among participant institutes significantly diminished the team performances, just like the similar conclusion of DeDreu and Weingart's research (2003). This explicit finding confirmed that team conflict had brutal effects on team performance, no matter the team members' educational background and/or socio-economic status. Team members encountering team conflicts easily aroused negative emotions such as distrust, anxiety, and self-protection (Chen & Tjosvold, 2002). These reactions, due to negative emotions, consequently instigated unfavorable information-interpretation, poor communication, anxious interpersonal relationships, and even hostility among team members (Chen et al., 2002; Das, 2006). It is reasonable to predict that people in the midst of team conflict usually conceal their ideas, loose enthusiasm, restrain dedication, and finally demote team performance (Jehn & Chatman, 2000). This study reveals that team conflict among faculty members who possessed a high intention to pursue personal academic achievement and reputation also created a negative effect on the team performance.

- (3) Emotion intelligence acted as an antecedent variable; both knowledge-sharing and team conflict played an important role in moderating factors between knowledge-sharing and team performance.

A. This study verified that team members' emotional intelligence significantly affected team members' intention and dedication to share knowledge for better team performance.

This result was similar to those conclusions of Nancy's (2000) and Cummings' (2002) research projects, which all revealed that team members' recognition and intentions were the dominant factor of promptly delivering immediate information and sharing expertise to team partners for achievement enhancement. As Rosete and Ciarrochi (2005) concluded, sociable team members with a high quality of emotional intelligence usually developed a pleasant team atmosphere, which favorably encouraged members to share their work experience and on-going information, and to achieve comparatively high performance.

- B. Inferior emotional intelligence caused negative team conflicts.

This study obtained similar results as those conclusions of Chen and Tjosvold (2002) and Jordan and Troth (2011), whose studies all revealed that the inferior emotional intelligence of team members potentially caused team conflict. In this inter-instituted collaboration team, participants with inferior emotional intelligence inappropriately adjusted and managed their emotions, and then initiated intra- and inter-instituted conflicts; finally, this conflict instigated brutal destruction to team performances (Jordan, Field, & Armenakis, 2002).

C. The emotional intelligence of university faculty created significant effects on the team performance; their effects differed from that of other group members possibly due to their faculty's highly academic cultivation and socio-economic status.

Attention should be paid to the fact that the faculty's emotional intelligence did not have a significant effect on the team performance of the inter-instituted collaboration. This result was completely different from that of Van den Hooff et al. (2004), who showed that participants' emotional intelligence presented a highly significant relationship to team performance. In this study, faculty members' backgrounds of high academic achievement and elites' socio-economic status--which were approved to promote team identity (Ostrove & Cole, 2003)--might miscarry the direct effects of emotional intelligence on team performance. In other words, the emotional intelligence of university faculty members could only create negative effects on the knowledge-sharing mechanism but not on team performance directly (rather, indirectly). Likewise, the faculty members' emotional intelligence also created a significant negative effect on team conflict, which consequently created a significant negative effect on team performance. This factor--emotional intelligence--created indirect effects on team performance in faculty members' relationship mechanism (Black, Crest, & Volland, 2001; Louis, 2006). This phenomenon might reflect the unique cultural characteristics of university faculty, a type of social elites who could well manage or just suppress emotion and highly valued professional achievement, considering their high socio-economic status and high professional identity (Mohammadi, Yeganeh, & Rad, 2010). However, their thinking styles and behavior, nevertheless, were as inevitably influenced by emotional intelligence as any other human being (Rosete & Ciarrochi, 2005). Knowledge-sharing mechanisms and team conflict were consequently influenced as moderating factors to influence team performance (Clercq, Dimov, & Thongpapanl, 2010; Fleming & Thompson, 2004).

Synthetically, the emotional intelligence of faculty members seemed not to create significant effects on team performance due to the special community culture of higher-educational campuses, such as faculty members' academic achievement and social status (Perry & Marsh, 2003). However, emotional intelligence played the role of antecedent in team conflict, resulting in significant effects on team performance.

Conclusion

This study was conducted to analyze the factors of team performance of inter-instituted collaboration. Particularly, this study emphasized the relationships among several factors to team performance, including faculty members' emotional intelligence, knowledge-sharing, and team conflict. The following four conclusions were drawn on the bases of research findings:

- (1) Knowledge-sharing among faculty members at the higher-education level was proved to be a crucial factor dominating team performance in inter-instituted collaboration. Similar to any other organization, knowledge-sharing in higher-education settings is the major mission of institutes and the major strategy to implementing this mission.
- (2) Team conflict existing within inter-instituted community created direct but negative effects on faculty members' team performance in collaboration projects. As in any other community, team conflict within a faculty

community at a higher-education level significantly destroyed team performance, even among faculty members who possessed high academic backgrounds and highly valued achievement.

- (3) The emotional intelligence of faculty members at higher-education institutes, unlike that of any other type of team member, was proved to not create any significant effect on team performance. This could reflect that these well-educated faculty members with a high socio-economic status and self-identity might well manage and appropriately express their emotion taking the elite's dignity and team privilege into account. This consideration for the sake of the general good could be a part of faculty members' sense of professional morality and benefit to team performance (Porter, 2007).
- (4) Emotion intelligence was proved to play the important role of antecedent to team performance in the relationship structure for inter-instituted faculty collaboration. This antecedent variable (emotional intelligence) drove knowledge-sharing and team conflict, as moderating factors which indirectly influenced the team performance. This fact might reflect a part of faculty cultural traits that classify faculty with achievement. Social elites could easily manage their EQs for team performance, but their inferior EQs still circuitously diminished team performance through knowledge-sharing and team conflict. EQ was nevertheless, in both direct and indirect aspects, a crucial factor in this relationship structure of the faculty community team performance.

Suggestion

The vocational institutes at the higher-education level have been rapidly growing and encountering consequent financial reduction in the last decade. These institutes increasingly carried out inter-instituted collaboration policies to integrate and share educational resources for reciprocal advantages and better achievement. The collaboration policy brought together competing faculty members with various professional expertise and from different institutes to work in an innovative inter-instituted team (Stoll & Louis, 2007). The team performance attracted high attention due to its team members' academic backgrounds and high social status. Based on the aforementioned research conclusions, this study finally proposed the following suggestions for the team performance improvement and long-termed inter-instituted collaboration:

- (1) Faculty members should recognize that emotional intelligence plays an important role in knowledge-sharing and conflict solution and should cultivate positive EQ for both personal achievement and team performance in academic institutes (Bishop & Scott, 2000; Zhang & Wang, 2011).
- (2) In educational settings, the mechanism of knowledge-sharing should be effectively reinforced through both intra-instituted and inter-instituted collaboration to reciprocally utilize educational resources and create innovative knowledge (Argote & Ingram, 2000; Faraj & Sproull, 2000).

- (3) Vocational institutes are suggested to reinforce the integration and collaboration mechanisms among various fields of faculties--and even institutes--in order to diminish possible inner and outer team conflicts for new missions and challenges in this collaboration era (Black, Crest, & Volland, 2001).
- (4) In order to motivate faculty members to share and further develop their expertise for team performance improvement, administrative policies should be designed corresponding with the culture traits of the social-elite community, which are characterized to be academic, highly self-esteemed, independent, and even disparagingly critical (Porter, 2007; Stoll & Louis, 2007; Wu, Lin, Lin, & Chang, 2013).

Finally, in order to further understand the factors and factor relationships regarding inter-instituted team performance, this study suggests that future studies could address the structural mechanism and contextual effects of these three factors. Quality research methods are also suggested to investigate the in-depth and authentic research issues from various resources.

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