## 行政院國家科學委員會專題研究計畫 成果報告

# 情緒智商影響團隊績效之多層次研究:以轉換型領導及員工 創造力為中介變數

研究成果報告(精簡版)

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- 中 文 摘 要: 本計畫以保險業務團隊為抽樣對象來探討團隊主管之情緒智 商如何透過轉換型領導風格、員工創造力、與整體團隊情緒 智商來影響團隊績效。發出 1000 份配對問卷,回收 125 份主 管問卷及 260 份員工問卷,扣除無配對的問卷及廢卷,總共 有 111 份有效問卷,有效問卷回收率為 11.1%。經由結構方 程模式分析,得出研究結果,發現團隊主管之情緒智商將會 透過轉換型領導風格之展現提高團隊成員之創造力,進而提 升團隊之績效。而主管之情緒智商也會影響整體團隊之情緒 智商,但並不會透過團隊之情緒智商影響團隊績效。藉由整 合眾多因素於同一模型中,本計畫將能對於情緒智商在團隊 績效之應用研究有更豐富的了解。
- 中文關鍵詞: 情緒智商、團隊創造力、轉換型領導、團隊績效、多層次分 析
- 英文摘要: In this research, we investigate the effects of team leader emotional intelligence on team performance through the mediation effects of transformational leadership and team member creativity. Using evidence from a sample of 111 teams in insurance companies in Taiwan, this research examines the relationships among all variables, based on questionnaires distributed in two versions to each firm: one for a leader, and the other for followers. After analyzing the data by confirmatory factor analysis and structural equation modeling, we find emotional intelligence would have that: the leaders' statistically positive effects on team performance through transformational leadership and team creativity, rather through team emotional intelligence; therefore, we concluded that transformational leadership and team creativity functioned as mediators in this model. By integrating these various dimensions into one model, this research is expected to contribute to extend the knowledge base about emotions in groups. 英文 關鍵詞: Emotional Intelligence, team creativity,
- 英文關鍵詞: Emotional Intelligence, team creativity, transformational leadership, team performance, multilevel analysis

## A Multi-level Examination of the Impact of Emotional Intelligence on Team Performance: The Mediating Role of Transformational Leadership and Employee Creativity

## Abstract

In this research, we investigate the effects of team leader emotional intelligence on team performance through the mediation effects of transformational leadership and team member creativity. Therefore, the purpose of this research is: (1) to examine the relationships among team leader emotional intelligence competencies, transformational leadership, team member creativity, team level emotional intelligence, and team performance, and (2) to better understand the way how team leader emotional intelligence influences team performance. By integrating these various dimensions into one model, this research is expected to contribute to extend the knowledge base about emotions in groups.

Key Terms: Emotional Intelligence; Transformational Leadership; Team Creativity; Multi-level Analysis

## Introduction

Goleman (1995) introduced the concept of emotional intelligence (EI) to a popular audience, successfully taking academia's growing understanding of how the human brain regulates emotion and captured people's interest all over the world. One of Goleman's aims was to shift some of the great value we have traditionally placed on intellectual ability onto emotional intelligence, or the ability to identify and regulate emotions in ourselves and in others. Goleman (1995) thought that being able to deal with people effectively is central to the social success of anyone. Even the business world is affected by Goleman's claims. People begin to see that managers who are aware of their own emotions as well as those of others are better able to challenge, motivate and inspire teams into productive work than the more traditional manager who has tried to divorce emotion from the workplace.

Over the next ten years much further research tried to quantify EI and its relation to business success. Investigating the potential link between EI and career paths, various studies have shown that superior EI is very likely to lead to career success and promotion. Especially, when it comes to promoting middle and senior executives, EI is now a more important screening criterion than intellect and other managerial skills. So for those managers who still feel a little unsure about EI, what exactly do we now know about it and how can we increase its presence in the workplace?

Kunnannatt (2008) has brought up a model of EI that HR managers can seek to develop rather than an abstract concept investigated by academics. He explains that in emotionally intelligent people the mind is trained to detect and control the brain's natural tendency to over-ride reason with emotion. This skill includes two sub-competencies: self-awareness and self-regulation. The former enables an individual to link what they feel with what they think and do in real time. The latter is the ability to regulate the rational and emotional operations of the mind in balanced ways. So in a business situation like negotiation or dealing with a stressful problem, the emotionally intelligent person will be able to notice stress or fear rising and take control of it, just as they will be able to accurately read the emotions of people around them. This ability has come to be known as the ''meta-regulation of mood'' and is now commonly recognized as a centrally important skill in a good leader. Based on the importance of emotional intelligence in leadership, this research would like to focus on it, and examine if emotionally intelligent leaders are also transformational leaders who often link to better effectiveness through motivating and inspiring employees.

Emotional Intelligence has been shown to be significantly related to individual performance (Boyatzis, 1982). Furthermore, at the team level, the study of emotions and the effects of emotions on team performance is a relatively new avenue of research. Since teamwork is an inherently social activity, emotions play an important role in team effectiveness. Druskat and Wolff (2001b) proposed a model of emotional intelligence at the group level. Groups develop a set of behavioral norms labeled emotionally competent group norms (ECGN) that guide the emotional experience in the group. The degree to which a group develops these norms has been linked to team performance (Druskat et al., 2003). Understanding the factors that lead to the development of ECGNs would be beneficial for team development. Though Koman and Wolff (2008) ever examined the concept of ECGNs, they took a military organization for example, which is non-profit. To make results more generalized, this study would like to take insurance companies for example to study more about the concept of EI at the individual and team level.

As employee creativity is an important source of organizational innovation and competitive advantage (Amabile, 1996; Oldham & Cummings, 1996; Zhou, 2003), organizations are increasingly seeking to foster individual creativity (Oldham, 2003). Some researchers believe that when a supervisor displays transformational leadership, employee creativity will prosper (Jaussi & Dionne, 2003; Shin & Zhou, 2003). Results linking transformational leadership to creativity have been inconclusive. Shin and Zhou (2003) found empirical support for the positive relationships between transformational leadership and creativity in a laboratory study with student subjects. However, Jaussi and Dionne (2003) reported that the two were not related.

Based on the background described above, this research would like to investigate the effects of team leader emotional intelligence on team performance through the mediation effects of transformational leadership and team member creativity. Therefore, the purpose of this research is: (1) to examine the relationships among team leader emotional intelligence competencies, transformational leadership, team member creativity, team level emotional intelligence, and team performance, and (2) to better understand the way how team leader emotional intelligence influences team performance. By integrating these various dimensions into one model, this research is expected to contribute to extend the knowledge base

about emotions in groups.

## **Literature Review and Hypotheses**

#### **Relationship Between Leader Emotional Intelligence and Group Emotional Intelligence**

While there are various definitions of EI, there is agreement in the literature that EI includes an individual having an awareness of and an ability to regulate their emotions. The theory brought up by Boyatzis et al. (2000) and Goleman (2001) has evolved into four clusters of EI skills: self-awareness, self-management, social awareness, and relationship management. The four clusters represent a recognition and regulation cluster for both the individual (self) and social competencies (other). To examine the relationship between a team leader's emotional intelligence and the development of group-level emotional intelligence, we use the above mentioned EI competencies in this research.

Emotionally competent group norms (ECGNs) was identified by Druskat and Wolff (1999) "that influence and manage the emotional process in a way that builds emotional capacity and develops social capital and leads to effectiveness". These group norms are an indication of the group's emotional intelligence and can help to determine if a group of individuals functions as a high-performing team (Goleman et al., 2002). In this study, we use the following definition for group-level emotional intelligence, same with that of Koman and Wolff (2008): The ability of a team to generate operating norms that increase awareness of emotion and management of behavior in ways that have positive emotional consequences.

Team leaders are responsible for the success of the teams they lead. Not only for their own emotions, but also for the emotions of the team they lead are they responsible (Rafaeli and Worline, 2001). To influence and move people, one must possess the knowledge and skills of emotional competencies (Boyatzis et al., 2002). Boyatzis (1982) defines such competencies as "the underlying characteristics of a person that lead to or cause effective and outstanding performance". With teams being social in nature, it is logical that emotional intelligence would be an important factor in team leader effectiveness; and it has been shown to be important for the success of managers and leaders (George, 2000; George and Bettenhausen, 1990; Gardner and Stough, 2002).

Though scholars have argued and shown that team leaders influence the processes, behaviors, norms, and climate of the team they lead (Dickson et al., 2001; Druskat and Wheeler, 2001), there has been a limited amount of research linking team leadership to performance. The empirical work that has been conducted has

found that leadership has effects on team motivation, efficacy, and performance (Sivasubramaniam et al., 2002; George, 2000; Dickson et al., 2001); primarily through the development of the team's climate. Goleman (2001) and Williams (1994) suggested that emotionally intelligent leaders are essential to developing a climate where employees are encouraged to perform to their best. When the leader help the team develop its norms, the climate that is developed maintains a consonance with the team leader's individual personality (Dickson et al., 2001). If the norms developed reflect the team leader's personality, it could be argued that the emotional intelligence norms developed on the team would reflect the emotional intelligence (GEI), and the effect of GEI on team performance do exist.

H1. The level of team leader EI is positively related to the presence of team emotional intelligence.

#### **Relationship Between Leader Emotional Intelligence and Transformational Leadership**

The connection between Transformational leadership (TL) and emotions has been already asserted by Bass (1999), who claimed that "leadership is as much emotional and subjective as rational and objective in effect". However, very little is known about the process by which individuals become energized and how and under what circumstances a transformational leader will be most effective (Avolio and Bass, 1988). Some studies have found the linkage between TL and emotions. For example, Roush and Atwater (1992) showed that TL was associated with a "feeling" as opposed to a "thinking" style. Transformational leaders tend to be more nurturing than other types of leaders, and less dominant, aggressive, and critical (Ross and Offerman, 1990). Compared to transactional leadership, TL is more emotion-oriented and involves heightened emotional levels of awareness (Yammarino and Dubinsky, 1994). Besides, Shamir et al. (1993) have found that by building followers' self-confidence, self-efficacy and self-esteem, such leaders are expected to have a strong emotional influence on the followers' levels of identification, motivation and goal achievement, which are the behaviors of transformational leaders. Accordingly, TL can be interpreted as a process by which leaders attract strong feelings of identity and excitement (Bass et al., 1987) and act to improve their followers' emotional understanding of and dealing with situations. For this, transformational leaders are recognized as using emotion to communicate a vision, to elicit responses from their subordinates (Ashkanasy and Tse, 2000; Lewis, 2000) to and to be emotionally motivated to perform tasks beyond their own expectations (Bass, 1985).

Recently TL has been linked to the concept of EI. What various studies (e.g. Sivanathan and Fekken, 2002; Leban and Zulauf, 2004; Rosete and Ciarrochi, 2005) have shown is that TL seems inherently associated with emotions and EI. Ashkanasy and Tse (2000) have proposed that transformational leaders may need to be high on EI, and suggested that this provides additional insight into the leadership-performance link. Therefore, in this study we expect that:

H2. The more emotionally intelligent a leader is, the more transformational leadership he displays.

#### **Relationship Between Transformational Leadership and Employee Creativity**

Leadership is an important aspect of the work environment for employees (e.g., Oldham & Cummings, 1996; Scott & Bruce, 1994). Transformational leaders often enact behaviors mainly composed of four dimensions: intellectual stimulation, charisma or idealized influence, inspirational motivation, and individualized consideration (Bass, 1985). Social cognitive theory brought up by Bandura (1986, 1997) indicates that transformational leadership represents a critical external factor in employee learning. Transformational leaders, by engaging in intellectual stimulation, set the expectation for creativity and serve as creative role models for employees. Because transformational leaders are charismatic and inspirational, employees are likely to attend to and learn from such leaders. Through the influence of behavioral modeling, transformational leaders enhance followers' ability to develop new ideas and question outmoded operating rules (Bass & Avolio, 1990). Through individualized consideration, transformational leaders are empathetic, considerable, and supportive for employees, which should help overcome the fear of challenging the status quo, leading to higher creativity. Finally, transformational leaders delegate and encourage follower autonomy (Avolio & Gibbons, 1988; Bass, 1985). Such a developmental orientation should enhance employee learning, and thus creativity. As research has shown the four dimensions of transformational leadership to be highly correlated and to thereby reflect a higher order construct of leadership (e.g., Avolio, Bass, & Jung, 1999), we expect all dimensions to work together as whole to impact employee creativity (Shin & Zhou, 2003). Therefore, we infer that:

H3. Transformational leadership is positively related to team creativity.

#### **Relationship Between Employee Creativity and Team Performance**

Research on the link between creativity and performance is diversified and has been constrained to academic settings. For example, Chamorro-Premuzic (2006) found a positive relationship between creative

thinking and final dissertation grades in a sample of students. Similarly, in the business world, we expect a positive relationship between employee creativity and job performance. Specifically, when employees show their creativity at work, they generate novel responses that are useful in dealing with the tasks at hand (Amabile, 1996). Creative responses may include new procedures, processes, identifying products or services to better meet customer needs (Zhou, 1998; Zhou & Shalley, 2003). Creative responses may also take the form of refinements of existing procedures or processes to enhance efficiency, or the discovery of alternative procedures or processes that are more effective. These kinds of innovative solutions may enable employees to improve their personal job performance. Besides, other employees may take up a novel, useful idea and apply and develop it in their own work (Shalley et al., 2004). As a result, the performance of a whole unit or organization may improve. Furthermore, although such benefits of employees' own creativity may not contribute directly to their actual work effectiveness or efficiency, supervisors may factor in such contributions when rating their employees' job performance (Gong, Huang, and Farh, 2009). Preliminary evidence suggests that employee creativity enhances job performance (Oldham and Cummings, 1996). Therefore, we predict:

H4. Employees who are more rather than less creative will generally have higher levels of job performance.

#### **Relationship Between Group Emotional Intelligence and Team Performance**

Although there is substantive literature on individual emotion and on emotional intelligence, there is mixed evidence regarding the effects of emotional intelligence on teams and work groups (Feyerherm and Rice, 2002; Jordan and Troth, 2004). Feyerherm and Rice (2002) found that there was negative relationship between team leader's emotional intelligence and the team performance. However, they did find a positive correlation between the team leader's ability to understand emotion and the performance on the customer service metric. Whereas Jordan and Troth (2004) and Offerman et al. (2004) found that teams with higher levels of EI performed better than teams with lower levels of EI. When assessing the team's EI, all three research teams (Feyerherm and Rice, 2002; Jordan and Troth, 2004; Offermann et al., 2004) used measures that assessed each individual team member's emotional intelligence. However, same with Koman and Wolff (2008), this research uses a team-level measure to assess the team's overall emotional intelligence. Previous studies have shown that group emotional intelligence has been shown to be significantly related to performance (Stubbs and Messer, 2002; Druskat et al., 2003), therefore, we infer that:

H5. There is a positive relationship between team emotional intelligence and team performance.

H6. There is a positive relationship between leader emotional intelligence and team performance.

### **Research Methods**

#### **Conceptual Model**

After reviewing substantial literature, we propose our hypotheses and the framework, as shown in Figure 1, to present the relationships among all dimensions in this research.



FIGURE 1 CONCEPTUAL MODEL

#### Sample

We choosed work teams in insurance companies in Taiwan as our target sample. To ensure that the nature of the jobs will be comparable, only insurance agents were included. That is, administrative staff in insurance companies will be excluded. Although people typically associate creative work with scientists and artists, creative work is not defined or tied to a particular occupation (Mumford, Whetzel, & Reiter-Palmon, 1997). Rather, creativity is important in a wide variety of jobs and organizations (Perry-Smith, 2006; Shalley, Gilson, & Blum, 2000). It is thus appropriate to study creativity among insurance agents because their marketing and sales function "provides a real-world' illustration of creative performance" (Redmond et al., 1993: 125). Besides, insurance agents often interact with people, so emotional intelligence becomes one of their key successful factors. Therefore, it's proper to take insurance agents as our sample.

### **Data Collection**

Questionnaire protocol serves as the primary means for data collection. The questionnaire is developed and refined on the basis of the original instruments used in other studies. Within each team, we collected (1) detailed team leader questionnaires to measure these dimensions, such as team leader emotional intelligence, team performance, employee creativity, and (2) detailed subordinates questionnaires to measure group emotional intelligence and transformational leadership. This data collection strategy eliminated the possibilities of percept-percept bias because the data for some variables will be collected from different sources.

The data was collected from June, 2012 to August, 2012. Questionnaire was issued a pair each firm (one is for leader, and the other is for subordinate). We sent out 1000 pairs questionnaires and a total of 110 pairs usable questionnaires were returned (excluding those having more than 10% incomplete responses). The overall response rate was 11%. This low response rate was because team data was difficult to collect, and most of the questionnaire were unusable owing to no pairs returned.

#### Variables and Measures

#### Team leader emotional intelligence.

We used the Emotional Intelligence Questionnaire (EIQ) (Tsaousis, 2003) to assess team leader emotional intelligence. This self-report questionnaire comprises of 91 self-referencing statements and requires individuals to rate the extent to which each statement is representative to them on a 5-point scale (1 = Not representative at all, 5 = Very representative).

#### Group emotional intelligence.

We will use the Group Emotional Intelligence measure to evaluate Team level emotional intelligence, which is developed by Druskat and Wolff and later refined based on work by Hamme (2003). We will ask each team member participants to self rate their team's behavior according to each of the nine ECG norms measured by the instrument. The ECGN scales are comprised of 57 questions, representing nine team norms. The nine scales are comprised of 5-8 questions, with one to three items in each scale reversed scored. Respondents will rate each item on a one-to-seven Likert scale ranging from very inaccurate (1) to very accurate (7).

#### Creativity.

We will measure employees' creativity using the seven-item scale reported by Gong, Huang, and Farh (2009), which is adapted from the three-item measure of Oldham and Cummings (1996), and they conducted a focus group interview to develop four creativity items for insurance sales jobs in the company. These four items covered (1) custom-made product/service packages, (2) acquiring new clients, (3) increasing the sales force,

and (4) developing methods for promotion and sales. This adaptation approach is consistent with the recommendation by Farh, Cannella, and Lee (2006) on developing valid instruments for research in the Chinese context. Team leaders will rate employees' creativity on a 5-point scale ranging from 1, "not at all correct," to 5, "completely correct." A sample item is "This person often uses creativity to develop new clients through different means and channels."

#### Transformational Leadership.

Some items adapted from the Multifactor Leadership Questionnaire (MLQ) Form 5X (Bass & Avolio, 1997) will be used to measure transformational leadership. Items are rated on a Likert 7-point scale, from 1 "strongly disagree" to 7 "strongly agree". Transformational leadership will be measured with some items, such as "My leader seeks different perspectives when solving problems."

#### Team performance.

Both objective and subjective measures will be used to assess this construct. Subjective measures are particularly useful for assessing the broader, non-financial dimensions of performance, are generally more accessible than objective indicators, and have been shown to exhibit strong reliability and validity (Dess & Robinson, 1984; Stam & Elfring, 2008). Objective performance measures, on the other hand, are less prone to common method bias and are especially helpful in assessing a venture's financial performance. A potential disadvantage is that objective indicators are often hard to obtain (Chandler & Hanks, 1993). Given the unique strengths and weaknesses of these two types of measures, both kinds of measures will be used in this study. We will use "quota completion rate" and "renewable rate of insurance contract" to assess objective performance. As for subject performance, it will be gathered from each team leader. Participants will be asked to evaluate each of the teams under their management using a 7-point Likert scale. The subjective performance measure consists of a 5-item questionnaire developed and tested by Druskat et al. (2003). The following criteria will be evaluated: efficiency in getting things done, quality of work, ability to be self-directed, performance against other teams that perform similar work, and ability to continue working together in the future. The responses to each question will be totaled to produce a subjective rating of each team's effectiveness.

Previous research suggests that subjective measures of performance can accurately reflect objective measures, thus enhancing validity and reliability (Dess and Robinson 1984; Venkatraman and Ramanujam 1987).

Subjective and objective performance scores will be standardized within team type to minimize variations in reporting. The combined performance score was used for hypothesis testing.

## Analysis

In order to test the validity and reliability of data, we used cronbach alphas to analyze it and unreliable questions was dropped from the scales before further analysis. Furthermore, we used correlation analysis and structural equation modeling (SEM) analysis to measure the relationships among team leader emotional intelligence competencies, transformational leadership, team member creativity, team level emotional intelligence, and team performance.

The reason we use SEM to test our model's hypotheses is that it allows estimation of multiple associations, simultaneously incorporates observed and latent constructs in these associations, and accounts for the biasing effects of random measurement error in the latent constructs (Shook, Ketchen, Hult, & Kacmar, 2004). We adopt the two-step approach to SEM outlined in Anderson and Gerbing (1988). The first phase of this approach involves using a confirmatory factor analysis (CFA) model to fit to the observed data. The second phase involves comparing a sequence of nested structural models to gain information concerning the structural model that best accounts for the covariances observed between the exogenous and endogenous constructs.

## Results

### **Descriptive Statistics and Correlations**

Table 1 shows the detailed demographic information of our respondents. Means, standard deviations, and correlations among the study variables are in Table 2. All significant correlations were in the expected direction.

Table 1 Sample Descriptions							
	Leader (n=115)	Subordinate(n=260)					
Age	42.08	3 39.87					
Tenure in company	11.87	8.61					
Tenure in industry	12.23	3 7.71					
Education							
Senior high school	40	) 94					
College/university	67	7 150					
Graduate school	(	6 2					
Missing data		2 6					

## Job title

Representative	4	206
Supervisor	31	25
Junior manager	24	7
Manager	43	7
Director	7	1
Assistant manager	2	0
Vice president	4	0
Other (adviser, vice manager)	0	10
Missing data	0	9
Group Des	scription	
Size (number of persons)	11.37	
Age (months)	49.3	

#### TABLE 2 Correlations, Means, and Standard Deviations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Leader Emotional Intelligence (LEI)														
1.Self Emotion Appraisal (SEA)	1.00													
2.Other Emotion Appraisal (OEA)	.514**	1.00												
3.Use of Emotion (UOE)	.684**	.636**	1.00											
4.Regulation of Emotion (ROE)	.566**	.437**	.669**	1.00										
Transformational Leadership (TL)														
5.Articulate a Vision	.140	.125	.277**	.148	1.00									
6.Foster Accepting Goals	.218*	.071	.278**	.132	.871**	1.00								
7.Expect High Performance	.159	.159	.374**	.211*	.635**	.634**	1.00							
8.Stimulate Intelligence	.215*	.041	.228*	.154	.841**	.887**	.520**	1.00						
Team Emotional Intelligence (TEI)														
9. Team Self Emotion Appraisal (TSEA)	.340**	.106	.273**	.231*	.368**	.492**	.174	.481**	1.00					
10.Team Other Emotion Appraisal (TOEA)	.151	.175	.179	.251**	.376**	.414**	.278**	.408**	.444**	1.00				
11.Team Use of Emotion (TUOE)	.226*	.479**	.407**	.279**	.492**	.448**	.453**	.471**	.382**	.470**	1.00			
12.Team Regulation of Emotion (TROE)	.086	.350**	.192*	.203*	.312**	.325**	.301**	.330**	.273**	.402**	.698**	1.00		
Team Creativity (TC)														
13.Team Creativity	.531**	.558**	.745**	.575**	.252**	.246**	.242*	.238*	.128	.158	.306	.206*	1.00	
Team Performance (TP)														
14.Team Performance	.551**	.466**	.553**	.497**	.201*	.267**	.208*	.202*	.184	.123	.263	.255**	.662**	1.00
Mean	5.73	5.43	5.64	5.34	5.27	5.36	4.95	5.28	5.44	5.18	5.24	4.91	5.34	5.24
S.D	.76	.88	.83	.86	1.02	.96	.90	1.03	.63	.78	.87	.92	.83	.95

N=111. (Casewise deletion of missing data) \*p<0.5 \*\* p<0.01

### **Measurement Model**

We used CFA to assess the validity and reliability of the questionnaire. Content validity was established through personal interviews with managers and one professor. The objective was to ensure that the selection of scale items included theoretical and practical considerations (Hair *et al.*, 1998). Then, we used CFA to assess discriminant validity, convergence validty, and construct reliability. According to Anderson and Gerbing (1988), we evaluated discriminant validity by constraining the correlation between each pair of

constructs to be 1, which gave a new chi-square value for the model. The difference between the new model and the original model also had a chi-square distribution, with one degree of freedom. If the difference exceeded 3.84 for each pair of constructs tested, then discriminant validity was achieved. Table 3 shows most chi-square differences were above 3.84, except for the sub-dimensions of transformational leadership.

Pairs of	Unconstraine	d Model	Constraine	d Model		
Construct						
		$\chi^2$	Freedom	$\chi^2$	Freedom	$ riangle \chi^2$
SEA	OEA	20.7	19	54.9	20	34.2
	UOE	15.7	19	43.1	20	27.4
	ROE	11.2	19	46.4	20	35.2
OEA	UOE	48.8	19	71.6	20	22.8
	ROE	28.3	19	63.5	20	35.2
UOE	ROE	44.5	19	69	20	24.5
GSEA	GOEA	16.4	8	68.1	9	51.7
	GUOE	10.8	19	58.7	20	47.9
	GROE	7.8	13	58.3	14	50.5
GOEA	GUOE	5.7	8	24.3	9	18.6
	GROE	9.5	4	30.5	5	21.0
GUOE	GROE	23.1	13	31.7	14	8.6
VISION	GOAL	0.5	4	1.6	5	1.1
	EXPECT	4.7	1	7.5	2	2.8
	STIMULATE	0.9	1	1.9	2	1.0
GOAL	EXPECT	1.9	4	4.5	5	2.6
	STIMULATE	7.0	4	7.4	5	0.4
EXPECT	STIMULATE	3.0	1	7.3	2	4.3

 TABLE 3
 Discriminant Validity between Pairs of Constructs

NOTE: The shadowed value mans  $\[theta]\chi^2 < 3.84\]$ 

After several rounds of CFA, we eliminated those indicators whose loadings were under 0.7. Thus, all factor loadings of remaining items were above 0.7, showing adequate convergence validity (Anderson and Gerbing, 1988). Besides, all measures have construct reliability greater than the recommended level of 0.7 (Hair *et al.*, 1998). The Cronbach's alpha of the subscales ranged from 76.4% to 95.1%, achieving acceptable values. As for the variance extracted, all exceeds 0.5, showing good reliability (Hair *et al.*, 1998). See Table 4 for details.

Caratan	t Indianatan	UNSTD.	СE	CD	Р	ST.	Construct	Variance	Cronbach	
Construc	t Indicator	Estimate	5.E.	C.K.	Value	Estimate	Reliability	Extracted	Alpha	
	SEA	1				0.895				
IEI	OEA	1.126	0.075	15.093	***	0.921	042	90 <b>5</b>	.847	
LEI	UOE	1.043	0.072	14.446	***	0.904	.945	.805		
	ROE	1.104	0.084	13.207	***	0.868				
	TSEA	1				0.778				
TEI	TOEA	0.988	0.107	9.237	***	0.821	008	711	764	
ILI	TUOE	1.021	0.102	10.03	***	0.88	.908	./11	./04	
	TROE	1.086	0.107	10.147	***	0.89				
	VISION	1				0.893				
	GOAL	0.784	0.077	10.167	***	0.764				
TL	EXPECT	0.962	0.066	14.509	***	0.917	.925	.757	.917	
	STIMULATE	0.954	0.069	13.903	***	0.897				
	TC1	1				0.846				
	TC2	1.038	0.079	13.22	***	0.916		.765	.951	
TC	TC3	1.093	0.077	14.144	***	0.949	.942			
	TC4	0.924	0.074	12.401	***	0.885				
	TC5	0.776	0.08	9.744	***	0.767				
	TP1	1				0.867				
	TP2	1.138	0.086	13.169	***	0.909				
TP	TP3	1.103	0.105	10.494	***	0.799	.908	.667	.917	
	TP4	1.104	0.099	11.137	***	0.827				
	TP5	0.747	0.095	7.871	***	0.661				

TABLE 4Reliability and Validity of Scales

Note: \*\*\* p<0.001 (C.R. >3.08);

#### **Structural Model**

We used SEM to assess the overall fit of the model. Multiple indexes were used to assess the fitness. The criteria examined included chi-square/degree of freedom ( $x^2$ /df) and the comparative fix index (CFI), incremental fit index (IFI), Tucker-Lewis index (TLI), and root-mean-square error of approximation (RMSEA). Suggested by some researchers, a value of 0.9 or higher for the CFI, IFI, and TLI, a value of 0.8 or lower for the RMSEA (Hu and Bentler, 1999), and a value of 3 or lower for  $x^2$ /df (Carmines and McIver, 1981) are typically viewed as adequate fit. According to the criterion above, the best model (Figure 2) was tested in this study, and Table 5 showed the results of the model, concluding the model was quite good.

	Relations	Standardized Coefficients	C.R.	Hypothesis Testing Results		
	Leader Emotion Intelligence> Team Emotion Intelligence	.243*	2.376	H1- supported		
	Leader Emotion Intelligence> Transformational Leadership	.272**	2.733	H2- supported		
D-41	Transformational Leadership> Team Creativity	.273**	2.743	H3 - supported		
Path	Team Creativity > Team Performance	.560***	6.288	H4 - supported		
	Team Emotion Intelligence> Team Performance	.048	.585	H5- not supported		
	Leader Emotion Intelligence> Team Performance	.342***	4.067	H6 - supported		
	Chi-Square		332.684			
	Degree of Freedom (d.f.)	203				
Fiv	Chi-Square/d.f.	1.639				
Index	RMSEA	.076				
шасх	CFI	.940				
	IFI	.941				
	TLI	.932				

**TABLE 5** The Results of Structural Equation Model

Note: 1.\*: p<0.05 (C.R. >1.96); \*\*: p<0.01 (C.R. >2.575); \*\*\*: p<0.001 (C.R. >3.08);

2. The coefficients are standardized value.



FIGURE 2 Structural Equation Model

As the overall goodness of fit is promising, it is encouraged to further identify the magnitudes and significance of the path structural coefficients of the model. We found that the LEA-TL, TL-TC, TC-TP paths were statistically positively significant, representing that leaders' emotional intelligence would have positive effects on team performance through displaying transformational leadership and team members' creativity. Hypotheses 2-4 were thus all supported. Furthermore, the results indicated that leaders' emotional intelligence had statistically positive effects on transformational leadership and team emotional intelligence, showing that high emotional intelligence owned by leaders would tend to display transformational leadership and result in high emotional intelligence in teams. Therefore, Hypotheses 1 and 2 were both supported. Finally, we would like to examine the mediating effects of green management. From Figure 2, we found that the leaders' emotional intelligence would have statistically positive effects on team performance through transformational leadership and team emotional intelligence; therefore, we concluded that transformational leadership and team creativity functioned as mediators in this model.

## **Discussions and Conclusions**

#### **Theoretical Contributions**

This paper contributes to theory in various ways. First, in view of the importance and popularity of emotional intelligence, this study contributes to extend the knowledge base of emotions in individual and team level by integrating various dimensions into one model, such as leader emotional intelligence, group emotional intelligence, transformational leadership, team members' creativity and team performance. Second, at the team level, the study of emotions and the effects of emotions on team performance is a relatively new avenue of research. Koman and Wolff (2008) ever examined the concepts of group emotional intelligence by taking a non-profit organization for example. In order to make results more generalized, this study took insurance companies as samples. Third, this paper examines the antecedent of team creativity. In previous literature, results linking transformational leadership with creativity have been inconclusive. Some researchers found that there was a positive relationship between them (Shin & Zhou, 2003), but some researchers didn't (Jaussi & Dionne, 2003). This study fills the gap to find that transformational leadership benefit team creativity.

#### **Managerial Implications**

The findings of this study also provide some insights for team leaders. First, this research confirms that transformational leadership and team creativity are meaningful constructs, which play mediating roles in the relationships between team leader emotional intelligence and team performance. Team creativity can be achieved by transformational leaders, who are positively related to emotional intelligence. Transformational leadership represents a critical external factor in employee learning (Bandura, 1986, 1997). Thus, leaders may display adequate leadership style to arouse followers' abilities or creativity, so that higher team performance will be achieved. Second, this paper shows that team creativity is a key success factor of team performance. It's important for team leaders to develop team members' creativity by means of human resource management practices such as training activities and reward systems to specialize team members' skills and to motivate them. Finally, this study finds that leader emotional intelligence functions as an antecedent of group emotional intelligence by training, such as sensitive training, in order to enhance their abilities to understand the emotions of themselves and others, and to use and regulate their emotions appropriately.

#### **Limitations and Future Studies**

There are several limitations to this study. First, some of our constructs were evaluated by perceptual measures, such as team performance. However, Venkatraman and Ramanujam (1987) ever presented that subjective measures of performance could accurately reflect objective measures. Second, our data is not large enough because team data are difficult to collect and in some teams there is only one leader and one follower, which may not fully capture the constructs we want to investigate. However, we use multiple data resources (one questionnaire for a leader, and the other questionnaire for a follower) to eliminate the common method bias to improve our study's validity and reliability. Third, though the sampling population consists of local and foreign companies, the data we finally collected were only from local companies, which may cause the bias of the results generalization.

Based on the conclusions and the limitations outlined above, we suggest some directions for future research. First, we suggest future researchers evaluate team performance with objective measures, such as

FYP, FYC, rate of activity, etc. Second, we suggest that the inclusion of qualitative methods, such as in-depth interviews and meta analysis, should contribute to have an abundant understanding of the operation of teams, such as the development of emotional intelligence, and team creativity. Third, we suggest researchers include other selection criterion when sampling, such as the team size, the team age, etc, so that the sampling can be more robust.

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Amabile, T. M. 1996. Creativity in context. Boulder, CO: Westview.

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# 國科會補助計畫衍生研發成果推廣資料表

日期:2012/10/30

	計畫名稱:	情緒智商影響團隊績效之多層為	欠研究:以轉換型領導及員工創造力為中介變數						
國科會補助計畫	計畫主持ノ	計畫主持人:許雅棣							
	計畫編號:	100-2410-H-263-001-	學門領域:組織行為與理論						
		無研發成果推廣資料	<del>하</del>						

## 100 年度專題研究計畫研究成果彙整表

計畫主	持人:許雅棣	計:	畫編號:100-2410-H-263-001-						
計畫名稱:情緒智商影響團隊績效之多層次研究:以轉換型領導及員工創造力為中介變數									
成果項目			實際已達成 數(被接受 或已發表)	量化 預期總達成 數(含實際已 達成數)	本計畫實 際貢獻百 分比	單位	備註(質化說 明:如數個計畫 共同成果、成果 列為該期刊之 封面故事 等)		
		期刊論文	0	0	0%				
	於古茲佐	研究報告/技術報告	1	1	100%	篇	大學專題		
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		博士後研究員	0	0	0%	八人			
		專任助理	0	0	0%				
		期刊論文	0	1	0%				
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	成果項目	量化	名稱或內容性質簡述
钭	測驗工具(含質性與量性)	0	
纹	課程/模組	0	
1. C	電腦及網路系統或工具	0	
;† ▶	教材	0	
	舉辦之活動/競賽	0	
<u>真</u>	研討會/工作坊	0	
頁	電子報、網站	0	
E	計畫成果推廣之參與(閱聽)人數	0	

## 國科會補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值(簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性)、是否適 合在學術期刊發表或申請專利、主要發現或其他有關價值等,作一綜合評估。

1	. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估
	達成目標
	□未達成目標(請說明,以100字為限)
	□實驗失敗
	□因故實驗中斷
	□其他原因
	說明:
2	. 研究成果在學術期刊發表或申請專利等情形:
	論文:□已發表 ■未發表之文稿 □撰寫中 □無
	專利:□已獲得 □申請中 ■無
	技轉:□已技轉 □洽談中 ■無
	其他:(以100字為限)
3	. 請依學術成就、技術創新、社會影響等方面,評估研究成果之學術或應用價
	值(簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性)(以
	500 字為限)
	本計畫以保險業務團隊做為抽樣對象,來探討團隊主管之情緒智商如何透過轉換型領導風
	格、員工創造力、與整體團隊情緒智商來影響團隊績效。研究結果發現:團隊主管之情緒
	智商將會透過轉換型領導風格之展現提高團隊成員之創造力,進而提升團隊之績效。而主
	管之情緒智商也會影響整體團隊之情緒智商,但並不會透過團隊之情緒智商影響團隊績
	效。藉由整合眾多因素於同一模型中,本計畫將能對於情緒智商在團隊績效之應用研究有
	更豐富的了解。由於之前也做過高階經營團隊之特性、其決策之速度與品質、領導風格及
	溝通模式,對組織經營績效影響之研究,而目前企業中多強調團隊合作之重要性,團隊所
	帶來的綜效將大於個人績效之和,再者,目前非常強調綠色管理,故預計未來研究可繼續
	延伸至高階經營團隊之特性及綠化決策之速度與品質將如何影響企業實行綠色管理之績
	效。