

科技部補助專題研究計畫成果報告

(期中進度報告/期末報告)

從不同理論觀點建構團隊績效

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執行期間：103 年 8 月 1 日至 105 年 7 月 31 日

執行機構及系所：國立交通大學經營管理研究所

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科技部專題研究計畫期末報告

從不同理論觀點建構團隊績效

Modeling team performance from different theoretical perspectives

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一、中文摘要

本研究首先以活動理論與寬廣與建立理論為基礎來提出一個研究模式（模式 A），在模式中，團隊績效透過團隊主動與團隊精熟度的完全中介而受到快樂與知識分享的間接影響，同時，團隊績效與團隊精熟的關係受到團隊主動的干擾；團隊主動和知識分享的關係與團隊精熟和知識分享的關係均受到快樂的干擾。除上述研究內容外，本研究根據自我規範與社會認同來分析團隊層級之團隊績效的形成（模式 B），在所提出的模式中，團隊績效受到目標承諾、情緒智商和團隊互依性的間接影響，其中團隊規劃與社會認同為中介變數，同時團隊規劃與團隊認同對於團隊績效的效果都假設會受到目標承諾的干擾。整體而言，本研究將會根據實證之研究發現提出重要管理意涵。

關鍵詞：團隊情感氛圍；目標承諾；領導；團隊績效；情緒智商

Abstract

This study proposes a model (i.e. Model A) based on the activity theory and the broaden-and-build theory. In the proposed model, team performance positively relates to both happiness and knowledge sharing through the full mediation of team proactivity and team proficiency. At the same time, the relationship between team performance and team proficiency is positively moderated by team proactivity, whereas the relationship between team proactivity and knowledge sharing and that between team proficiency and knowledge sharing are positively moderated by happiness. Meanwhile, this study proposes another model (i.e., Model B) based on the theories of self-regulation and social identity to analyze the formation of team performance at the level analysis of teams. In the proposed model, team performance is influenced indirectly by goal commitment, emotional intelligence, and teamwork interdependence via the full mediation of team planning and team identity. At the same time, the effects of team planning and team identity on team performance are hypothetically moderated by goal commitment.

Keywords: Team affective tone, goal commitment, leadership, team performance, emotional intelligence.

二、緣由與目的

Model A

Team proactivity and team proficiency are both direct drivers for team performance. Team proficiency is defined as the extent to which team members have had the necessary teaming knowledge and skills needed to successfully perform their required in-role teaming tasks (Klein & Heuser, 2008), whereas team proactivity is defined as the extent to which team members engage in self-directed behavior to change their team's situation or the way their team works (Griffin, Neal, & Parker, 2007). The previous literature indicates that team proactivity in, for example, problem solving (defined as actively participating and resolving problems through proactive thinking, assessment, and action) can predict team learning and team performance (Garcia-Morales, Ruiz-Moreno & Llorens-Montes, 2007; Gruman, Saks & Zweig, 2006; Williams, Parker, & Turner, 2010). Teams with higher proactivity are more creative and capable of dealing with rapid changes in a timely manner, ultimately strengthening competitive advantages and creating good performance.

Similar to team proactivity, team proficiency is also a positive and straightforward motivator for team performance, because it directs how team members coherently complete teamwork. Team performance is likely enhanced given high levels of team proficiency that maximize team members' coordinated abilities, communicative skills, and mutual help (Jong & De Ruyter, 2004; Kane & Borgatti, 2011). Collectively, teams that are more proficient at their work can

achieve their target performance effectively (Kang & Santhanam, 2003; Wageman & Baker, 1997; Mun & Davis, 2003). Based on the above rationales, we derive the first hypothesis below.

HA1: Team performance positively relates to both team proactivity and team proficiency.

The broaden and build theory suggests that happiness as a positive emotion is linked with intellectual ability (e.g., proactivity) and social ability (e.g., proficiency) (Fredrickson, 2001). Positive psychology notes that employees who possess happiness (i.e., delightful positive mindset) perform better at job challenges than others, which has been recognized as the "happiness advantage" (Achor, 2012). Achor (2012) found the positive effect of happiness in his research across 48 countries. Teams with high levels of happiness often have positive benefits such as supporting team members (George, 1991), reinforcing optimistic expectations (Schwarz & Bless, 1991), and striving towards teamwork (George & brief, 1996). Happiness is an emotional trait that makes people be continuously active and creates a prosperous environment (e.g., proactivity) that contributes to successful outcomes (Achor, 2012; Komlosi, 2013), suggesting a full mediating role of team proactivity between happiness and team performance.

According to the broaden and build theory, happiness helps change the thinking of team members (i.e., improvement of proficiency) and makes them see things in a different and positive way (i.e., improvement of proactivity). In other words, happiness facilitates intrinsic teamwork motivation regarding team proficiency and promotes self-initiated participation related to proactivity (Bindl & Parker, 2012; Fredrickson, 1998; Isen & Reeve, 2005). Team members with strong

happiness tend to actively engage in the behavior of developing a better way to do things for performance improvement (e.g., actively finding a better way to accomplish teamwork) (Griffin, Neal & Parker, 2007), indicating the full mediating role of team proactivity between happiness and team performance. Happiness can enhance team performance more strongly through better social contacts and coordination within the team (Veenhoven, 1988), achieve a smoother information process (e.g., effective communication) (Matthews, 1992), and build up more mutual support in the team to pursue its goals (Baron, 2008; Fredrickson, 2004; Gruber, Mauss, & Tamir, 2011; Lu & Argyle, 1991), suggesting the full mediating role of team proficiency between happiness and team performance. Consequently, we derive the second hypothesis as below.

HA2: Happiness positively relates to team performance via the full mediation of team proactivity and team proficiency.

Knowledge sharing is a critical factor that is conducive to team proactivity and team proficiency. According to the activity theory, knowledge sharing is considered a social process through which team members establish a shared understanding and comprehension about what each person knows (Boer, van Baalen & Kumar, 2002). The more knowledge team members share with one other, the better synergy the team is likely to achieve, which accordingly boosts team performance. Specifically, knowledge sharing helps a team respond to external threats with speed and efficiency without the duplication of effort and a waste of team resources (e.g., team proactivity) (Freeman, Hutchings, Lazaris & Zyngier, 2010; Nonaka, 1995). As a result, a team with stronger knowledge sharing is more likely to engage in self-starting and

future-focused action that aims to change the external situation or the team itself (e.g., taking the initiative to adjust methods to improve team performance) (Lustenhouwer, 2011), implying the full mediating role of team proactivity between knowledge sharing and team performance.

Team members sharing knowledge with other team members are more likely to build good social bonds or empathy (Aron, Norman, Aron, McKenna & Heyman, 2000) that propel team members to help and work closely with one another (i.e., high team proficiency). Knowledge sharing is also good for effective open communication (Mei, Lee & Al-Hawamdeh, 2004; Zakaria, Amelinckx, & Wilemon, 2004). To sum up, teams with strong knowledge sharing can make good use of their collective knowledge to become more proficient at teamwork (Srivastava, Bartol & Locke, 2006), resulting in high team performance. Hence, we now state the third hypothesis.

HA3: Knowledge sharing positively relates to team performance via the full mediation of team proactivity and team proficiency.

Happy employees are more sensitive to opportunities at teamwork, more outgoing, and more optimistic and inspired by new information or knowledge (Bakker & Demerouti, 2008; Frey & Stutzer, 2010; Lu & Argyle, 1991), generating a larger effect of knowledge sharing on the way the team behaves as a collective group in terms of its proactivity and proficiency (e.g., Williams, Parker, & Turner, 2010). By contrast, unhappiness is more likely to make team workers be indifferent to quality control, be rude to others, and disrupt teamwork through absenteeism, exacerbating staff turnover and workplace problems and further eroding the positive effect of knowledge sharing (Friedman & Friedman, 1988; Poulston, 2009).

Prior research has shown that team members with a happy mindset can better utilize knowledge sharing (Achor, 2012; Heskett, 2003; Qi & Meloche, 2009) to push team proactivity and proficiency forward, including making improvements to the way the team coordinates (i.e., a form of proficiency) (Arsenio, Gold, & Adams, 2004; Bindl & Parker, 2010), changing the external situation in a better way (i.e., a form of proactivity) (Erkutlu, H., & Chafra, 2012), and translating ideas about resources into actions (i.e., a form of proactivity) (Hackman, 1998; Ramchand, 2011). Hence, we describe the hypotheses about the moderating effect of happiness as below.

HA4: The relationship between knowledge sharing and team proactivity is positively moderated by happiness.

HA5: The relationship between knowledge sharing and team proficiency is positively moderated by happiness.

Team proactivity has not only a direct effect on team performance, but also an interaction with team proficiency towards the performance. In other words, team proactivity inspires members to detect errors and to encourage positive changes (Garcia-Morales et al., 2013), influencing the effect of team proficiency on team performance. Teams with higher proactivity are more likely to try various courses of action (for performance improvement) on their own initiative such as information seeking, ability development, and resource gathering (Ashford & Black, 1996; Parker & Collins, 2010), thus strengthening the relationship between team proficiency and team performance. Indeed, team proactivity amplifies the effect of team proficiency on team performance, because team proactivity expedites the process of translating ideas into actions to capture rent (i.e., the increased influence of team proficiency on performance) (Chung & Gibbons, 1997). Based on the above justifications,

we next state the hypothesis about the moderating effect of team proactivity.

HA6: The relationship between team proficiency and team performance is positively moderated by team proactivity.

Model B

Team planning has been considered an important regulatory approach and team-based process for improving team performance (e.g., Janicik & Bartel, 2003). Based on self-regulation, team planning relates to metacognition that represents people's knowledge of and control over their cognition in workplaces (Kozlowski, Watola, Jensen, Kim, & Botero, 2009). Teams apply planning as a tactic to coordinate various complicated activities, consequently improving team performance (Weldon, Jehn, & Pradhan, 1991). Therefore, team planning turns out to be an essential meta-cognitive skill that influences team performance (Brown, Bransford, Ferrara, & Campione, 1983; Ford, Smith, Weissbein, Gully, & Salas, 1998).

In addition to team planning, team identity is also positively related to team performance. The social identity theory suggests that members of a team with dramatic different perceived social categories (i.e., low team identity) may find it difficult to integrate their values and norms and work together (Jehn et al., 1999). Team workers feel more comfortable working with the group they identify with (Eckel & Grossman, 2005; Northcraft et al., 1996), consequently boosting their team performance. Strong team identity encourages team workers to behave according to team norms and conventions (Branscombe, Ellemers, Spears, & Doosje, 1999; Hobman & Bordia, 2006). The presence of team identity (which emphasizes team-based values) enhances the performance of functionally diverse teams (Jehn & Bezrukova, 2004). Collectively, the

positive effects of team planning and team identity on team performance can be stated as below.

HB1: Team planning and team identity are both positively related to team performance.

Goal commitment is defined as team members' persistence in reaching the team goal (Ke & Zhang, 2009). Theoretically, clear goals only facilitate team activities (e.g., innovation) in reaching the goals if team members are committed to the goals given that strong goal commitment can substantially maintain people's persistence for implementing team actions (West, 2002). Goal commitment is a mind-set that takes different forms and binds team members to a course of action that is of relevance to a particular target of the team (Meyer & Herscovitch, 2001), suggesting its positive effect on team planning.

The previous literature indicates that a subsequent proof of goal commitment is the taking of action (Locke & Latham, 1994). Specifically, given stronger goal commitment, team members are more likely to arrange a course of action that can attain an already chosen objective (i.e., team planning). This is understandable, because goal commitment is viewed as people's attachment toward specific goals and thus they are likely to do their best to work on actions that favor the goals (Fishbach & Dhar, 2005). On the other hand, goal commitment implies that team members persist in the face of difficulties (Aubé & Rosseau, 2005; Locke, Shaw, Saari, & Latham, 1981), and thus team members who are highly committed to their team goal will take action to cope with the difficulties and obtain the goal (i.e., team planning). Based on the preceding rationale, the hypothesis can be stated as below.

HB2: Goal commitment is positively related to team planning.

Research at the team level has shown

that strong commitment towards team goals is critical for forming team identity (e.g., Hu & Liden, 2011). Goal commitment refers to team members' attachment or determination to attain team goals (Liu, 1999). As previous research argues that people's psychological attachment to certain objectives is influential to identity, attachment is a process that provides personal and team identity (Hernandez, Hidalgo, Salazar-Laplace, & Hess, 2007). Indeed, team members often rely on their collective understanding and commitment to team goals (i.e., goal commitment) to guide their behavior and identification towards the team (Furst, Blackburn, & Rosen, 1999). Team identity develops over time as teams clarify goals, set priorities, become determined to achieve the objectives, and invest energy towards accomplishing team goals (Furst et al., 1999; Sivunen, 2006). As a result, team identity is developed through the establishment of and commitment to team goals and objectives (Furst et al., 1999), suggesting a positive relationship between goal commitment and team identity. Hence, the hypothesis is stated as below.

HB3: Goal commitment is positively related to team identity.

The intelligent use of people's moods and emotions to observe, estimate, control, adapt, and analyze is considered "emotional intelligence" (e.g., Goleman, 1995). This study focuses on the emotional regulation of teams because the regulation of emotion is critically a core set of control processes aimed at manipulating when, where, how and which emotion people experience and express (James, 1989; Quirk & Beer, 2006). In a learning group, instructors readily use switched-on emotional intelligence in individual and team planning to stimulate thinking and encourage dialogue about the emotional needs of group members in the learning

process (Longaretti, 2008). Team workers with high emotional intelligence are more adept at regulating their own emotions and managing others' emotions to facilitate more effective activities to achieve the team goal (Baruch & Lin, 2012). Jordan et al. (2002) found [*I believe you generally use past tense in this instance*] a link between team-based emotional intelligence and team process effectiveness (i.e., planning team activities to achieve its goal). Similarly, Menges and Bruch (2009) suggested that emotional intelligence accelerates a course of collaborative actions by which a team can obtain its goal and ultimately enhance performance, indicating a positive relationship between emotional intelligence and team planning. Hence, the hypothesis is developed as below.

HB4: Emotional intelligence is positively related to team planning.

Emotional intelligence is highly relevant to important work-related factors such as team climate and team members' development and sense of belongingness (e.g., Pirola-Merlo, Hartel, Mann, & Hirst, 2002), because its principles provide a new way to evaluate and understand the human behavior, management styles, attitudes, interpersonal skills, organizational identification, and potential of people (e.g., Landen, 2002; Serrat, 2009). Previous research suggests that the development of the social and emotional competencies of a team help facilitate cohesion, collaboration, and team identity (Chapman, 2005). In fact, emotional intelligence reflects an ability, capacity, or skill to evaluate, identify, and manage the emotions of one's self, of others, and of a team (Serrat, 2009), leading to stronger unity. Similarly, previous studies indicate that high levels of team emotional intelligence encourage other important team processes such as trust and team identity (Druskat & Wolff, 2001; Yang &

Mossholder, 2004). Accordingly, this study proposes the below hypothesis.

HB5: Emotional intelligence is positively related to team identity.

While the literature supports the advantage of team planning in boosting team performance, sparse research has focused on identifying such a teaming characteristic as teamwork interdependence that might push a team to engage in a particular style of team planning (Somech, Desivilya, & Lidogoster, 2009). Teamwork interdependence is defined as the extent to which individuals need information, resources, and support from the other team members so as to complete their work with collective activities (Brass, 1981; van der Vegt, van de Vliert, & Oosterhof, 2003). The previous literature has discussed the antecedent role of teamwork interdependence (e.g., task interdependence) in team planning processes (e.g., Cohen & Bailey, 1997). Given high teamwork interdependence, team members can communicate more frequently, support each other more regularly, and are sympathetically closer to one another. As a result, teamwork interdependence generates a positive effect on the degree of interaction and communication among team members and on the level of collective planning that is necessary for teams to coordinate and integrate team actions (Gundlach, Zivnuska, & Stoner, 2006). Consequently, the hypothesis is derived as below.

HB6: Teamwork interdependence is positively related to team planning.

As a particular type of social identity, team identity represents team members' cognitive, affective, and behavioral bonds between members and their team (Henry, Arrow, & Carini, 1999). Team identity is purely a group-level construct representing the collective level of team identification occurring across all members of a team (Lembke & Wilson, 1998). Similar to team identity that

reveals the extent to which individuals perceive a sense of “oneness” within a team (Gundlach et al., 2006; Hogg & Terry, 2000; van Knippenberg & van Schie, 2000), teamwork interdependence requires team members to work together (as oneness) in order to complete a team task (Somech et al., 2009). Specifically, high teamwork interdependence encourages team members to collaborate and adopt a constructive and cooperative management style (Somech et al., 2009), consequently fostering a shared social identity of the team (e.g., Kramer, 2006). Thus, this study hypothesizes a positive relationship between teamwork interdependence and team identity as below.

HB7: Teamwork interdependence is positively related to team identity.

The action-performance relationship in a team is stronger when people are committed to their goals (e.g., Klein, Wesson, Hollenbeck, & Alge, 1999). Goal commitment is more obviously important and relevant when team members have more difficulty preparing a course of action by which the team can attain an already chosen objective (Ercz & Zidon, 1984; Locke & Latham, 2002). Goal commitment plays a moderating role in the association between team planning and team performance, because enhanced goal commitment prompts team members to more enthusiastically schedule their activities to reach the goal (e.g., Hollenbeck, Williams, & Klein, 1989; Seijts & Latham, 2000), amplifying the effect of team planning on team performance. By contrary, despite good team identity, team members with low goal commitment are unlikely to perform well due to their indetermination and lack of passion to move forward towards the goal. Consequently, the hypothesis regarding the interaction between goal commitment and team planning is described as below.

HB8: Goal commitment positively

moderates the relationship between team planning and team performance.

While the previous literature has found a moderating effect of goal commitment on the goal-difficulty-performance relation (Erez & Zidon, 1984), this study complements the literature by examining the moderating effect of goal commitment on the identity-performance relation. As goal commitment represents the determination or the persistence in pursuing a specific goal over time (Theodorakis, 1996), it is both a predictor and a moderator that affect the formation of team performance (e.g., Hollenbeck & Klein, 1987; Locke, 1968). In this study, goal commitment is a potential moderator, because team workers who have decided not to pursue their team goal with effort-withholding behavior are people who have less engagement in teamwork (e.g., Zsombok, Klein, Kyne, & Klinger, 1992) and low team identity (Ferguson, 2010). Goal commitment implies the extension of effort, over time, toward the accomplishment of a specific goal and emphasizes an unwillingness to abandon or to lower the goal (Campion & Lord, 1982). For that reason, if team members present weak goal commitment, then their team performance is unlikely to increase despite certain levels of team identity. Hence, this study proposes the following hypothesis.

HB9: Goal commitment positively moderates the relationship between team identity and team performance.

三、結果與討論

3.1 Subjects and procedures

Model A

This project empirically tests the research hypotheses described above using a survey of professionals across different work teams from high-tech firms in Taiwan. High-tech firms provide an appropriate representative sample of work teams, because the work

mode of a team prevails in the high-tech industry (Lin, 2010). Jackson, Brett, Sessa, Cooper, Julin and Peyronnin (1991) proposed that the minimum size for studying a team should be at least three members. Since we plan to investigate both team members and their leaders, we surveyed five members from each team, including one leader and four members (i.e., four subordinates). This study surveyed respondents anonymously to reduce their suspicion on factually filling out questionnaires. Respondents were assured of complete anonymity in the cover letter (e.g., Baruch & Holtom, 2008), confirming that neither their names nor teams would be revealed. Moreover, we collected the measures of factors from different sources (i.e., antecedents were measured by team members, while the others were measured by their team leaders) to reduce the potential threat of common method variances (Podsakoff, MacKenzie & Podsakoff, 2012). A threat of common method bias is unlikely to appear in this study due in part to our focus of moderating effects. As interactions are less subject to common sources from a statistical point of view, this study is unlikely to suffer from CMV (i.e., common method variances) (Chen & Lin, 2013). Testing moderating effects has the advantage of mitigating the CMV problem (Chen & Lin, 2013). The rationale is that more complex relationships owing to moderating effects are less susceptible to CMV, because such relationships are unlikely to be a part of respondents' cognitive maps (Chang, van Witteloostuijn, & Eden, 2010). Due to the above three measures, CMV is unlikely a threat in our data sample. Of the 650 questionnaires distributed to the members of 130 teams, 447 usable questionnaires from 116 teams were returned for a questionnaire response rate of 68.77%.

Model B

The proposed hypotheses of this study were empirically tested using two separate surveys of working professionals on teams from high-tech organizations in Taiwan. The surveys of this study were conducted in two stages with one month apart. In the first stage, of the 600 questionnaires distributed to the team members of 150 teams for measuring three exogenous factors and two mediators in this study's research model (i.e., goal commitment, emotional intelligence, teamwork interdependence, team planning, and team identity), a total of 412 usable questionnaires from 106 teams were returned. In the second-stage survey, 106 questionnaires were distributed to each team leader of the above-mentioned 106 teams (i.e., each leader just measured team performance), because these teams had provided usable data in the first-stage survey. After both sets of questionnaires collected across the two different points of time were matched up, this study obtained usable data from a total of 93 matched teams that include 359 team members and 93 team leaders.

3.4 Results

Model A

After the aggregation had been justified based on ICC1, ICC2, and rwg, team-level data were analyzed using exploratory factor analysis (EFA) for verifying the data of team members and the data of team leaders, respectively. The use of EFA based on our limited sample size is quite appropriate according to previous literature (Fabrigar, Porter & Norris, 2010; Hatcher, 1994). Reliability analysis indicated that each of our constructs has a Cronbach alpha of 0.8 or higher, and hence reliability is supported. Harman's single factor test was also performed (Podsakoff & Organ, 1986), revealing no single factor found that accounted for a majority of the variances.

To test the hypotheses of this study, we conducted team-level hierarchical

regression analyses for examining various main, mediating, and moderating effects in depth. This study took the three major steps suggested by Baron and Kenny (1986) to test the full or partial mediations of team proactivity and team proficiency. The first step is to show the direct relationship between the mediators (i.e., team proactivity and team proficiency) and their outcome (i.e., team performance). More specifically, we include team proactivity, team proficiency, and three control variables (e.g., cooperation) in Model 1 to test the effects of team proactivity and team proficiency on team performance. The test result shows team performance does positively and significantly relate to both team proactivity and team proficiency (thus supporting HA1).

The second step is to show the direct relationship between the predictors (i.e., knowledge sharing and happiness) and the mediators (i.e., team proactivity and team proficiency). The test results show that knowledge sharing positively relates to both team proactivity and team proficiency, while happiness only positively relates to team proficiency. The third step is to show the relational strength between the predictors and the outcome when the mediators are simultaneously included in the model. Previous literature suggests that, if a mediating variable is a full mediator rather than a partial mediator, then the relationship between the predictors and their outcome will be insignificant given the mediating variable included in the same model. In our study, the test results in Model 4 show that the effects of happiness and knowledge sharing on team performance are not significant when two mediators (i.e., team proactivity and proficiency) are simultaneously included in the model. As a result, happiness positively relates to team performance only through the full mediation of team proficiency (partially supporting HA2), whereas

knowledge sharing positively relates to team performance via the full mediation of team proactivity and team proficiency (supporting HA3).

With regard to the moderating effect of happiness, we included the interaction term of happiness and knowledge sharing in Models 5 and 6. Their test results indicate that happiness positively moderates the relationship between knowledge sharing and team proactivity (thus supporting HA4), but there is no significant moderating effect on the relationship between knowledge sharing and team proficiency (HA5 is not supported). We finally tested the moderating effect of team proactivity in Model 7. The test result shows that team proactivity positively moderates the relationship between team proficiency and team performance (supporting HA6).

Model B

This study applies two major statistical methods to test our hypotheses. First, the survey data were analyzed using confirmatory factor analysis (CFA) to verify the quality of the data collected. Second, this study tested its proposed exogenous main, mediating, and moderating effects with hierarchical regression models by simultaneously including interaction terms.

Following the above analyses, this study performed hierarchical regression analysis to test the hypothesized relationships of this study. To confirm the full mediation effects of team planning on team performance, this study conducted an analysis under three steps proposed by Kenny, Kashy, and Bolger (1998), which have been frequently recommended in the literature (e.g., Frazier, Tix, & Barron, 2004). Note that this study tested models with team-level data by simultaneously including four team-level control variables. The three steps indicated above are explained in detail below.

In Model 1, this study included team

planning and its three exogenous determinants. The test results in Model 1 showed that goal commitment and teamwork interdependence were positively related to team planning, while emotional intelligence was unrelated to team planning. Model 2 included team identity and its three exogenous determinants. The test results in Model 2 presented that goal commitment and emotional intelligence were positively related to team identity, while teamwork interdependence was unrelated to team identity. In Model 3, this study included team performance and its two mediators. The test results in Model 3 showed that team planning and team identity were both related to team performance. Model 4 included team performance, its two mediators, and three exogenous determinants to examine whether team performance was fully mediated by team planning and team identity. The test results in Model 4 showed that the significant effects of team planning and team identity in Model 3 remained significant in Model 4, while all three exogenous determinants were insignificantly related to team performance, suggesting a full mediation of team planning and team identity. Finally, Model 5 included two interaction terms to test the moderating effects of goal commitment. The test results in Model 5 illustrated that the effect of team planning on team performance was moderated by goal commitment while the effect of team identity on team performance was not. Based on the above statistical outcomes, As a result, of the nine hypotheses, this study obtains six supported hypotheses (i.e., HB1, HB2, HB3, HB5, HB6, and HB8) and three unsupported hypotheses (i.e., HB4, HB7, and HB9).

3.5 Discussion

Implications for Model A

This study applies the broaden and build theory to effectively explain the

main and moderating effects of happiness in team performance formation. The mediating process between happiness and team performance has been rarely discussed and is often considered a black box in previous literature. This study sheds light on this black box by verifying the mediating process and providing insight into how happiness motivates team performance via strengthening a team's intellectual and social resources (i.e., proactivity and proficiency). The broaden and build theory can also be extensively used to predict the moderating effect of happiness on the relationship between knowledge sharing and team proactivity, answering a question of whether happiness can be a kind of endocrine that facilitates the positive influence of knowledge sharing on team proactivity.

This study complements the previous literature of knowledge sharing by integrating knowledge sharing and happiness together in a model to jointly predict team performance more accurately than previous other models that consider only one of the two (i.e., either happiness or knowledge sharing). While many studies often link knowledge sharing to performance directly without exploring or justifying their potential mediators, we discuss knowledge sharing based on the activity theory and find that knowledge sharing is powerful in first boosting both team proactivity and team proficiency directly and then team performance indirectly. This helps solve a theoretical mystery in which oftentimes knowledge sharing may lead to dramatic high and low levels of team performance across different teams.

Implications for Model B

While previous literature has clearly focused on team planning as the only mediator between team performance and its antecedents, an important gap exists

regarding a potential co-equal mediator of such team planning (i.e., team identity) and its potential moderator (i.e., goal commitment) in the formation of team performance. This study provides important findings that complement previous literature by examining three fresh exogenous determinants for simultaneously explaining team planning and team identity, how these determinants are indirectly related to team performance, and a key moderator that intervenes in the relationship between team planning and team performance.

The full mediation of team identity and team planning in this study suggests that these two factors are dual key checkpoints that catalyze the relationship between team status (e.g., commitment towards a goal) and team outcome (e.g., performance). Management should keep track of the levels of their team planning and team identity respectively via an exchange of knowledge and information and the sharing of vision and emotion in order to streamline team activities and tighten team members' perceived oneness with the team. Problems that occur in team planning or team identity suggest that either team members are not well convinced of common goals (i.e., due to a lack of goal commitment) or there is room for management to strengthen the self-concept in terms of the team in which members belong to (i.e., due to a lack of team identity). Periodical surveys about the status of team planning and team identity can substantially help fine-tune team performance.

The positive effect of goal commitment on both team planning and team identity suggests that management should maintain smooth communication channels, officially or unofficially, with team members while hurrying to convey team goals to team members. While

previous literature recommends that employees learn about their manager's expectations regarding team goals (e.g., Wayne, Shore, & Liden, 1997), this study complements such findings by suggesting that today's managers should take the initiative to illustrate team goals to their employees and try to obtain a consensus over their actively dedicating efforts to reach the goals.

The positive effect of teamwork interdependence on team planning suggests that management should try to design tasks that facilitate the team's consolidation so as to improve team planning. Teamwork interdependence means team members within a team should feel responsible for each other's work. Team members have to learn to realize that team planning can be more effective and efficient as long as they are able to support and count on each other during the process of heading towards their team goals.

The positive effect of emotional intelligence on team identity suggests that emotional intelligence contributes to effective team collaboration by fostering and maintaining a meaningful identity with the team that the people work on (e.g., George, 2000). This viewpoint complements previous literature describing that an emotionally intelligent team provides a great deal of supporting information to demonstrate the effect of emotional intelligence on team performance through role identity and work team cohesion (e.g., Prati, Ferris, Ammeter, & Buckley, 2003).

The moderating effect of goal commitment on the relationship between team planning and team performance implies that team performance might be ineffective with good team planning under a lack of motivation to attain the team goal. In other words, team planning is likely to have a more positive effect on team performance given a stronger goal commitment.

Management should encourage a continuous interactive process promoting future team achievement for already chosen team goals, consequently inspiring and augmenting goal commitment.

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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（簡要敘述成果是否有嚴重損及公共利益之發現）或其他有關價值等，作一綜合評估。

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工作績效一直是學術與實務上重要的研究議題，本計畫嘗試從不同理論觀點去研究這項議題，這個二年期計畫所提出的所有假設將以團隊層級的分析為基礎來進行實證檢定。

本研究主要是著眼於純粹的商業領域內企業組織團隊合作與績效之改善，因此本計畫的研究內涵或成果並未有任何嚴重損及公共利益之發現。本計畫之研究成果與管理意涵可以提供企業高階主管與主要領導人重要的參考，透過本計畫之執行結果，公司組織的經理人可以有效地學習深入了解組織內部團隊運作的關鍵因素，並進行團隊功能與運作之改善，以達成團隊績效的整體提升。