Development and Validation of the Structural Equation Multilevel Model of Team Effectiveness

PRASARTSUB, Apiradee
Department of Educational Research and Psychology,
Faculty of Education, Chulalongkorn University, Thailand
BOWARNKITIWONG, Suchada
Department of Educational Research and Psychology,
Faculty of Education, Chulalongkorn University, Thailand

Abstract: The objectives of this present research were to develop and validate the proposed multilevel structural equation model of team effectiveness, as well as to describe preliminary factors affecting both the individual and team levels in immigration bureau in Thailand. The samples, in which surveys were mailed to 359 persons in 52 teams, were stratified randomly reflected from population. Empirical evidences from immigration bureau in Thailand are collected and employed to validate the developed model. The results were expected to be beneficial to both the policymakers and management in organization.
Keywords: Team effectiveness, EQ, Transformation Leadership, Personality, Trust

Introduction

Organizations had increasingly turned to the use of teamwork as an important strategy for successful management (Hackman, 1986; Peters, 1988; Tornatsky, 1986)Team as a set of two as more people who interact dynamically, interdependently and adaptively toward a common and valued goal, each having specific roles or function to perform. A work team method of job design was one in which work roles were assigned to individuals who interacted at varying degrees of interdependency to achieve specified, shared and valued objectives (Salas, Dickinson, Converse & Tannenbaum, 1992). Individual in the team shared responsibility and excellent communication within team and relationship among persons. Thus, working as a team could definitely enhance the productivity because of the collective nature of the team and synergy were positive (Robbins, 1996).However, researchers had tended to examine predictor-performance relationships separately between the individual level and the group level rather than examine both levels (Neuman and Wright, 1999) Actually, both individual level and group level analyses were relevant to overall organizational effectiveness when studying work teams. Individual level relationships needed to be assessed because most individual decisions are generally made for individuals and these decisions are often based on measures of individual difference

and if there are different relationships at the group level due to group process and these differences remain unnoted, decisions based on either individual or group level information alone may have adverse effects on overall organizational effectiveness (McGrath, 1986)
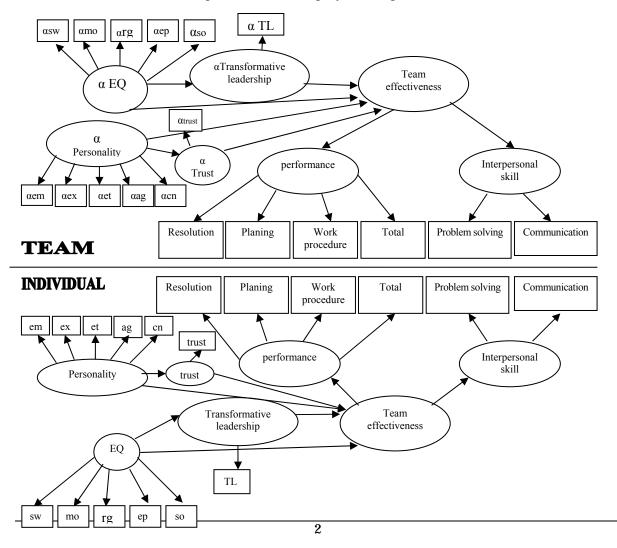
Objectives

The purposes of this study were to develop and validate the proposed multilevel structural equation model of team effectiveness and to investigate preliminary factors affecting both the individual and team levels in immigration bureau of Thailand.

Conceptual Model

The focus of this research had been on the relation of psychology variables to outcomes achieved by officers as individuals. Such a focus was understandable given that vocational and educational psychologists had traditionally been concerned with maximizing the

development and remediation the problems of individuals and those prevalent reward mechanisms in educational and work settings (e.g. grades, salaries) tend to be linked to the quality of individuals' performance and achievement. However, group processes had been garnering increasing attention among educational and organizational scholars in recent years, reflecting the growing popularity of team approaches to learning and working (e.g., Stajkovic & Lee,2001). Despite the importance of both individual level and group level analysis, there had little research to explain both level. My proposed multilevel structural model simultaneously defines multidimensional constructs such as personality and trust in order to test the direct effects on performance. The BIG FIVE personality trait factors were also identified as important and relevant for work team effectiveness. Team member interact frequently with each other and were interdependent, created unique interpersonal demands on team members to accomplish task performance. Because of this increased level of interaction required on teams, personality traits would be predictive of team task performance (Jackson,1992; Moreland & Levine,1992). At the team level, Leadership who supported and emotional mature could help members work to complete tasks. Leadership style influence her/his subordinates's attitude assumptions commitment and work toward organization objectives (Yukl & Van Fleet, 1992). Figure 1 represents this proposal conceptual model. Where individuals were clustered in organizations across two groups. From literature review (Payne, 2001; Parker, 1990; Hackman, 1986; Neuman & Wright, 1999; Barrick, 1998), the component of team performance were problem solving, work procedure, planning, conflict resolution, open communication and overall performance. The modified model becomes the multilevel causal structural equation model displayed in figure 1.

Figure 1: *Proposed Conceptual Model*

Figure 1 shows A Structural Equation Multilevel Model of the Performance. Team effectiveness consists of two latent variables such as performance and interpersonal skill. Interpersonal skill consists of two observe variables such as problem solving and open communication. Performance consists of work procedure, planning, conflict resolution and total performance. At individual level: The latent independent variables are personality and trust. Personality in well defined by five dimension such as conscientiousness, agreeableness, emotional stability, extraversion and openness. Trust is composed of three components such as propensity to trust, perceived trustworthiness, cooperative behavior and monitoring behavior. At team level : The latent independent variables are emotional intelligence and transformational leadership. transformational leadership composts of charismatic leader, inspirational motivation, intellectual stimulation and individualized consideration. Emotional intelligence composts of self regulation, self motivation, social skill, empathy and self awareness.

Research Method
Data Sources
The target populations were in nursing faculties in universities or equivalent unit of Thailand. The samples, in which surveys were mailed to 359 immigration officers in 52 teams, were stratified randomly reflected from population.

Variables and Research Instruments
Individual-level: Two latent variables such as personality was obtained from the questionnaire developed by Costa and McCrae (1990) and trust was obtained from the questionnaire developed by Costa (2002).

Team-level: The two latent variables, transformational leadership and emotional intelligence are in team level. Transformational leadership was obtained from questionnaire developed by Bass (1996), obtained from questionnaire developed by Goleman (1999).

Team Effectiveness: The dependent variables were taken from questionnaire developed by Neuman et. Al. 1999; Hackman, 1987; Stevens & Campion, 1994).

Analysis: In order to check the validity and reliability of instruments, confirmatory factor analysis was conducted. Since these constructs were to be verified, multilevel analysis was run to determine the model by Mplus.

Conclusion
It is expected that the proposed multilevel structural equation model of individual and team effectiveness will show multilevel causal relationship between individual variables and team level variables fit quite well with the empirical data set. The statistical analysis showed further that, the individual-level variables, such as trust and personality affected the team effectiveness.Whereas for the team-level variables, emotional intelligence and transformative leadership affected the team effectiveness. The present research is in process of empirical validation.

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