

Highly Effective Teams: A Regression Analysis of Group Potency and Perceived Managerial competencies.

Seema Unnikrishnan¹

Praveen Gupta²

Swapna³

Abstract

The current and future success of an enterprise is a reflection of the effectiveness of the senior management team, their vision and leadership, and the combined knowledge and skills of the organization's workforce. The study examines the factor structure and the reliability of a team effectiveness survey. Confirmatory factor analysis in two independent samples provided support for a model of team effectiveness. The study assessed at a group level of analysis predicted levels of group potency and team effectiveness. This study further investigates to identify the primary predictors of manager's competencies in facilitating group potency the relationship between managerial competencies, group potency and team effectiveness.

Key words: Group Potency, Managerial Competencies, Team Effectiveness

Introduction

During the last decades, organizational structures of firms competition toughened, the half-life of knowledge decreased, job specialization increased, pressure to be innovative augmented, and companies expanded internationally. As a result, conditions to survive in the market changed and the concept of teamwork emerged to meet the new requirements, and enable flexible and efficient working. Teams are seen as an ideal organizational entity because knowledge can be shared which improves performance (Tannenbaum et al., 1996). Today, teams are an important cornerstone of organizations and most organizations rely on teams to fulfill their work and to obtain their goals (Tannenbaum et al., 1996). But, not all teams are high performing teams and often the benefits of teamwork result into conflicts. In particular, it is interesting to know, how team performance can be promoted and what factors are associated with productive cooperation between team members. The importance of work teams appears to be gaining in strength as jobs get bigger, organizational structures get more complex, and more and more companies become multi-national in scope (Naquin & Tynan, 2003). To attain a high level of team performance, human resources must be knowledgeable about what factors influence team dynamics and effectiveness. In today's corporate environment, it appears the team not the individual holds the key to business success.

Conceptual framework of group potency

Group potency is defined as the communal belief that a group is effective in achieving positive outcomes (Guzzo, Yost, Campbell, & Shea, 1993). Group potency is also defined as a group's collective belief that it can succeed. Potency has also been explained as the collective belief that a group can be effective (Guzzo et al., 1993). Therefore, study that informs leaders how they can help move teams higher on the continuum of effectiveness and efficiency can be vital to organizations.

Managers Role in Team Effectiveness

Managers are crucial to the success or failure of a team. In effective teams, managers need to be prepared to serve as an internal consultant, visionary, experimenter, coach and educator. As an internal consultant, the manager helps identify problems through asking the team about obstacles. As coach, the leader acts as a trainer and observer, providing constructive feedback, as well as ensuring timely, meaningful rewards for desired team behaviors and combined performance.

Research method

The study was primarily designed to find out from a cross section of employees from Private Ltd companies of an IT sector. The Group potency is measured and its relationship to team effectiveness has been studied in a quantifiable manner. The instrument used for group potency was designed by Guzzo et al. (1993) Further the study also explored the managerial skills that facilitates group potency from the perspective of employees which results in team effectiveness.

Objectives

1. To study the effect of Group potency and team effectiveness
2. To find the effect between managerial competencies and group potency
3. To find the effect of group potency and managerial competencies on team effectiveness

Hypothesis

H₀₁: There are no significant effect between Group potency and team effectiveness

H₁₁: There are significant effect between Group potency and team effectiveness

H₀₂: There are no significant effect between Managerial competencies and Group potency

H₁₂: There Group potency and Managerial Competencies have no significant effect on team effectiveness

H₀₃: There Group potency and Managerial Competencies have no significant effect on team effectiveness

H₁₃: There Group potency and Managerial Competencies have significant effect on team effectiveness

Method

The population defined for this study consisted of IT professionals in Private IT sectors. Professionals were defined as individuals with at least a graduate degree in a field related to IT background. Organizations were included in the study and were selected on the basis of convenience and accessibility. The survey was carried in Private IT companies and the questionnaire was given to 192 IT Professionals. Of the 192 potential participants, 180 responded, which yielded a self selected response rate of 94%.

Measures

The questionnaire was an open ended as well as close ended questionnaire using **5 point Likert scale** ranging from 1(strongly disagree) to 5 (strongly agree). The questionnaire was prepared taken in to consideration of the following

parameters on Group potency, combination of managerial competencies and team effectiveness. The Team effectiveness was a dependent variable and group potency and managerial competencies were the dependent variables.

Research Findings

The sample size for the survey population was 192 from IT background. In the scale reliability, Cronbach alpha coefficients were greater than 0.70 (Nunnally and Berstein, 1994), produced an internally consistent results; thus, these measures are deemed appropriate for further analysis.

Factor analysis of the original 10 item longitudinal survey of group potency revealed strong loading of 6 variables. The 10 independent variables of group potency were reduced to 6 items. All factor loadings are greater than the 0.60 cut-off and are statistically significant. The 6 items included in the study were

- a) group is successful during its formative period
- b) Group size
- c) Perception of work group success
- d) Trust.
- e) Task variability
- f) Task dependability

Table 1: Factor Analysis: Group potency

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Self efficacy	.061	.326	-.247	.034
Formative period	.609	.349	.420	.014
Tenure period	.144	.188	-.035	-.088
Grp size	.771	.077	.296	-.152
Perception of work grp success	.713	.215	-.066	.390
Areas of exposure	-.100	-.088	.050	-.805
Trust	.996	.007	.830	.092
Task variability	.607	-.111	-.114	.125
Work productivity	-.460	.040	.380	.702
Task Dependency	.775	.007	-.028	.055
Note: Principal Component Analysis.				

Stepwise regression was performed to prioritize the top six predictor variables (refer table 2). The analysis showed the order of the degree of importance as:

1. group potency depends on group size
2. group is successful during its formative period (in the beginning)
3. Perception of work group success
4. Trust within the group members

5. Variability in the tasks depends on the success of group potency
6. Task dependency

The top six variables produced an adjusted R square of .678 explaining 67% of the variability in a group potency to facilitate team effectiveness. The final variable, variability in the tasks and tasks dependency, combined to account for only 1% of the variability. Although the last variable contributed significantly to the adjusted R² value, it was removed from subsequent discussions because of a perceived lack of meaningful significance. This result supports the alternate hypothesis that there was significant effect between Group potency and team effectiveness.

Table 2: Stepwise Linear Regression: Group Potency and team effectiveness

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.260 ^a	.348	.343	7.759
2	.530 ^b	.395	.391	7.352
3	.670 ^c	.449	.443	6.127
4	.742 ^d	.612	.608	5.214
5	.782 ^e	.678	.645	4.004
6	.789 ^f	.683	.649	3.062

- a. predictors: (constant), grp size,
- b. predictors: (constant), grp size, formative period
- c. predictors: (constant), grp size, formative period, work group success
- d. predictors: (constant), grp size, formative period, work group success, trust
- e. predictors: (constant), grp size, formative period, work group success, trust, task variability
- f. predictors: (constant), grp size, formative period, work group success, trust, task variability, task dependency

Factor analysis of the original 13 item longitudinal survey of Managerial competencies for team effectiveness revealed strong loading of 6 variables. An the factor loadings are greater than 0.60 cut off and are statistically significant. The 13 independent variables of managerial competencies were reduced to 7 items. The 7 items included in the study were

- a) Removing the roadblocks
- b) Acknowledgement of group success
- c) To gain trust of team members
- d) Effective team building
- e) Fairness
- f) Motivation.

Table 3: factor analysis: managerial competencies

Component Matrix					
	Component				
	1	2	3	4	5
Selection	.304	.106	.115	.400	-.059
Collaboration	.397	.406	-.367	.009	-.150
Acknowledgement of grp success	.654	.220	.759	-.125	-.238
Coordination	.441	.326	.309	.012	.480
Structuring the team	.012	.422	.322	-.093	.294
Arrangement of resources	.472	.160	.057	.669	.291
Removal of roadblocks	.755	.555	.487	-.069	-.048
trust	.665	.470	-.057	-.093	.491
Exhibit positivity	.200	.226	-.374	.357	.580
Effective teambuilding	.707	.338	-.063	.434	-.183
Fairness	.797	.406	-.367	.009	-.150
Developing team members	.434	.456	-.320	-.363	.022
Motivation	.664	.656	-.320	-.363	.022

Note: Principal Component Analysis.

Stepwise regression was performed to prioritize the top six predictor variables (refer table 4). The analysis showed the order of the degree of importance as:

- a) Removing the roadblocks
- b) Acknowledgement of group success
- c) Trust
- d) Effective team building
- e) Fairness
- f) Motivation.

The top six variables produced an adjusted R square of .789 explaining 78% of the variability in managerial competencies to facilitate Group potency. This result supports the alternate hypothesis that there were significant effect between Managerial competencies and Group potency.

Table 4: Stepwise regression of the factors: Managerial competencies and Group Potency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.378 ^a	0.374	0.368	5.99444
2	0.480 ^b	0.477	0.475	3.15054
3	0.596 ^c	0.555	0.574	3.29435
4	0.661 ^d	0.679	0.670	2.84465
5	0.724 ^e	0.779	0.771	1.68620
6	0.742 ^f	0.795	0.789	0.79586

a. predictors: (constant), Removing the roadblocks

b. predictors: (constant), Removing the roadblocks, Acknowledgement

c. predictors: (constant), Removing the roadblocks, Acknowledgement, trust

d. predictors: (constant), Removing the roadblocks, Acknowledgement, trust, effective team building

e. predictors: (constant), Removing the roadblocks, Acknowledgement, trust, effective team building, Fairness

f. predictors: (constant), Removing the roadblocks, Acknowledgement, trust, effective team building, Fairness, motivation

The linear regression was performed to identify the significant effect of managerial competencies, Group potency on team effectiveness. The result supported the alternate hypothesis. The model demonstrated an adjusted R square of .727(refer table 5).The study identified that the managerial competencies facilitates Group potency which in turn have greater effect on team effectiveness

Table 5: Model summary: managerial competencies, group efficacy on Team effectiveness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.815 ^a	0.737	0.727	6.727

Discussion

The study reveals that group potency has a greater effect on team effectiveness and so they influence each other. Group potency has been found to be positively related to team performance (Campion et al., 1997; Lester et al., 2002).Therefore increase a team's potency can increase their output. The study also reveals the managerial competencies that are influential in enabling of Group potency which results in to team effectiveness and team performance.

Implications for HRD Practice

Team potency positively affected speed-to-market, development cost, and market success of the product. The study revealed that the trust among project team members, past experiences of the members, and team size had a positive impact on the team potency during the project which results in to team effectiveness. At the same time influence of Managers on performance is moderated by potency, any attempt by the leader to promote changes in low potency teams will be an exercise in futility, even where conditions are favorable. In such cases, it could be recommend any intervention to boost team potency before going ahead with change. This could be achieved by developing the skills of team members, or by fostering the self-confidence of the team. Team building through training actions might be planned on the one hand and, on the other, activities and tasks could be designed that were, not only attractive and innovative, but also easily carried out by the team, providing a challenge within the range of its potential. The study demonstrates to managers that team effectiveness can assure business success. They must develop and maintain teamwork. The group potency and managerial competencies has the strong effect on teamwork effectiveness and lead to a competitive advantage.

Conclusion

The purpose of this study was to investigate the hypothesis regarding group potency and team effectiveness. The study further investigated that Managerial competencies have an effect on group potency. The findings of this study reveal that factors of group potency were group size, successful during its formative period (in the beginning), Perception of work group success, Trust within the group members and variability in the tasks which had an effect on team effectiveness. The finding of this study suggests the 6 factors of managerial competencies were removing the roadblocks, acknowledgement of group success, to gain the trust on team members, Effective team building, Fairness, Motivation are importance for group potency. While, the study finds the two factors i.e. the cumulative score of group potency and managerial competencies are significant for team effectiveness. These results support the hypothesis proposed.

References

- Amason, A., & Sapienza, H. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management*, 21(4), 495-516.
- Baldwin, T., Bedell, M., & Johnson, J. (1997). The social fabric of a team-based M.B.A. program: Network effects on student satisfaction and performance. *Academy of Management Journal*, 40(6), 1369-1397.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bartel, C. A., & Saavedra, R. (2000). The collective construction of work group moods. *Administrative Science Quarterly*, 45(2), 197-231.
- Bennis, W., & Shepard, H. (1956). A theory of group development. *Human Relations*, 9(1), 415-437. Blau, P. (1964). *Exchange and power in social life*: New York: Wiley. Butt, R. (1999).

Campion, M. A., Medsker, G. J., Higgs, A. C., Russ-Eft, D. F., Preskill, H. S., & Sleezer, C. (1997). Relations between work group characteristics and effectiveness: Implications for designing effective work groups. In *Human resource development review: Research and implications*. (pp. 147-178). Thousand Oaks, CA: Sage Publications, Inc.

J. Retallick, B. Cocklin, & K. Coombe (Eds.) *Learning communities in education: Issues, strategies and contexts* (pp. 60-85).

Routledge. Campion, M., Medsker, G., & Higgs, A. (1993). Relationships between work group characteristics and effectiveness: Implications for designing effective work teams. *Personnel Psychology*, 46, 823-850.