

INVESTIGATING THE IMPACT OF GROUP PROCESS VARIABLES ON GROUP PERFORMANCE IN J&K PUBLIC CORPORATIONS

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ABSTRACT

The paper investigates the impact of group process variables on group performance and mediating role of group leadership in the GPV-GP relationship. Data were collected from 114 groups working in head offices of J&K Public Corporations in Jammu. Results revealed the significant and positive effects of group process variables on the performance of public sector groups. However, group leadership acted as partial mediator between group process variables and group performance relationship.

Keywords: Group leadership, Cohesion, Potency, TMX, Group performance

1. INTRODUCTION

Group work and teamwork has become a major focus in the business world. It is an essential component in contemporary organisations, as evidenced by 82% of companies that have at least 100 employees reporting that they rely on teams and groups for catering the individual needs for security, esteem, affiliation, power, identity etc. (Gordon, 1992). There is no accepted universal definition of work group/team in literature. One explanation for the inconsistencies may be that scholars and practitioners who study these arrangements come from distinct fields including business, psychology, sociology, human resources development and more recently, information technology. In any event, these informal and formal arrangements are becoming ever more popular. A 'work group' consists of individuals who see themselves and who are seen by others as a social entity, who are embedded in one or more larger social systems and who perform tasks that affect others, such as customers or coworkers (Guzzo & Dickson, 1996; Hackman, 1987). Working in a team has specificities that distinguish it from working alone. Team members need to coordinate and synchronise their actions and every member has a critical role for their collective action. As task forces, project teams and quality circles become more prevalent in the corporate world, it becomes increasingly important to understand the factors that determine high performance and group-member satisfaction.

With the increasing popularity of groups and teams in organizations, the research related to group level variables has also gained momentum (Rosh et al., 2012; Hmieleski et al., 2011). The research idea generates from previous findings that group level variables affects group performance. This article is an attempt to find out the impact of group process variables (group leadership, group cohesion, group potency, team member exchange) on group performance. Henderson (1988) considered performance of groups as the normal engineering measures of efficiency, effectiveness and timeliness. Self-evaluation of performance has been widely adopted in the areas of organisational behaviour and human resources management.

Bandura (1986) suggested that self-appraisals are valid predictors of performance as individuals are often the best judges of their own performance and by getting involved in a job or venture, they may become more motivated to improve their performance.

2. REVIEW OF LITERATURE

Majority of the researchers after empirical investigation found positive impact of group level variables on the employee performance, group performance and organisational performance and considered organisational groups as the basic building blocks of successful organisational performance (Baninajarian & Abdullah, 2009; Greer et al., 2011). Borgatta et al. (1956) in their study on college students identified fourteen dimensions of group behaviour namely, autonomy, control, flexibility, hedonic tone, homogeneity, intimacy, participation, permeability, polarisation, potency, size, stability, stratification and viscosity. Other researchers focused on additional dimensions namely, information sharing, coordination, trust (Marks et al., 2001), intimacy (Rosh et al., 2012), group leadership (Hmieleski et al., 2011), clarity (Sharma & Bajpai, 2014), communication and team member exchange (Guzzo & Shea, 1992; Wekselberg et al., 1997). Sharma and Bajpai (2014) indicated that public sector employees exhibit a higher level of teamwork as compared to employees of private sector organisation. They further revealed that teamwork is an important determinant of the job satisfaction among public sector employees in India. Group potency is a belief that a group/team has about its general performance and effectiveness across multiple tasks and is found to be positively correlated with work group effectiveness (Stajkovic et al., 2009), team performance (Mathieu et al., 2008), perceived organisational support (Shelton et al., 2010) and group leadership (Sivasubramaniam et al., 2002). Sivasubramaniam et al. (2002) also proved the mediating role of group potency in the team leadership and performance relationship. Pearce and Conger (2003) argued that group shared leadership is one of the best ways to encourage team based work which also supports employee empowerment and group performance. It positively influences objective team performance, self ratings of team effectiveness, manager and customer ratings of team effectiveness, functional teams and team based knowledge work (Pearce et al., 2004). Team member exchange (TMX) is a construct that focuses on the premise that instead of jobholder positions, relationships are the building blocks of organisation structure and have substantial influence on individual attitudes, group behaviour, employee satisfaction (Seers, 1989). Group members who communicate regularly and attentively with colleagues are found to achieve better group decision making influencing organisational performance (Kumarasinghe & Hoshino, 2010). It is, therefore, imperative for policy makers and public managers to provide necessary information to the employees as well as groups and empower them for advancing public-service motivation and enhancing organisational performance. Group cohesion, also known as group cohesiveness, is a widely studied construct in the group dynamics literature. Group cohesion is 'the strength of member's desire to remain in a group and their commitment to it' (Hellreigel et al., 1999). The more group members are attracted to the group, the more they will be willing to invest in pursuing the group's goals.

3. HYPOTHESES DEVELOPMENT

Groups and teams require an organisational environment which supports them because teams are interdependent with the overall organisation. Successful teams need to be viewed as an appropriate way to perform the task by managers and other parts of the organisation (Spreitzer et al., 1997). Group leadership and team member exchange are needed to successfully manage the internal and external relations of the team and orient the team toward its goals (Day et al., 2006). The group development literature has examined cohesion and

potency on the group level (Burke et al., 2014) and considered them as significant predictors of group work (Hardin et al., 2007). Campion and his colleagues, in their 1993 model, proposed that factors related to job design, group composition, organisational context and process (potency, social support, workload sharing and communication within groups) are related to work group effectiveness. Researchers also considered the influence of team member exchange at the group level (Herman & Dasborough, 2008). A number of studies have also examined the effects of group potency on team performance and effectiveness (Gully et al., 2002). Thus, it is hypothesised that:

H₁: Group process variables significantly affect group performance.

H₂: Group leadership mediates the group process variables and group performance relationship.

4. RESEARCH DESIGN AND METHODOLOGY

4.1 Data Collection

Both primary and secondary sources relevant for gathering requisite information pertaining to the research problem have been used in the study. Primary data based on the first hand information have been collected through self-modified and well-structured questionnaire. Secondary sources investigated are books, newspapers and relevant journals. Unpublished & published information from internet and magazines is also used to substantiate literature survey and primary information.

4.2 Technique of Data Collection

Questionnaires consisted of two sections, one general and other to elicit information about dimensions of group process variables, group leadership and group performance. The data were collected on five point Likert scale (5<--1>) where 5 denotes strongly agree and 1 denotes strongly disagree. Suggestions were kept in open ended form. After pretesting, the questionnaire was further modified and final survey was conducted on the groups working in the head offices of J&K public corporations located in Jammu city. Census method was followed in contacting 1189 employees (group members) working in the head offices of all the eighteen J&K public corporations, out of which 888 employees responded effectively.

The organisational units/ section/ department are treated as groups in this study and the number of groups came to be 114. The groups are selected on the basis of two criteria that is, they had a minimum of three members each and they work interdependently (Langfred, 2005). The groups included management groups, supervision groups, supporting groups, mechanical section groups, legal section groups, finance section groups etc.

Group-level phenomena can be measured in a variety of ways and in the organisational sciences, the most common approach is to collect individual survey responses and aggregate those to the group level (Klein et al., 2001). In this study, the group scores are obtained by aggregating the individual scores on each item within the groups.

4.3 Analytical Strategy

Prior to using the group averages, however, the validity of aggregating individual scores should be investigated by the reliabilities of responses among employees in the same group (Hofmann & Stetzer, 1998). Inter-rater reliability, referred to as ICC (1), compares between-group to within-group variances using the individual ratings of each respondent. The

reliability of means, referred to as ICC (2), assesses the relative status of between-group and within-group variances using the average ratings of respondents within each group (Schneider et al., 1998). After obtaining ICC(1) and ICC(2) for various constructs, rwg (j) statistics are computed which assesses the consistency of responses within groups, and higher consistency (i.e., ≥ 0.70) suggests that responses represent the properties of the group or organisational unit (Klein et al., 2000). The mean rwg (j) values, ICC (1) and ICC (2) values for various constructs of the study are either close to or above the conventionally acceptable values of 0.70, 0.12 and 0.60 respectively (LeBreton & Senter, 2008). On the basis of these results, it was concluded that the aggregation of various constructs are justified and they can be used as group level variables (Table 1).

5. SCALE PURIFICATION –EXPLORATORY FACTOR ANALYSIS

The data reduction is performed in three steps. First of all, in the anti-image correlation the items with value less than 0.5 on the diagonal axis are deleted. In the second step, the extracted communalities are checked (amount of variance in each variable) and items with values less than 0.5 are ignored for the further analysis. In the third step, in rotated component matrices statements with multiple loadings and values less than 0.5 are deleted. Further, value of Kaiser-Meyer-Olkin (KMO) above 0.70 and significant Bartlett's test of Sphericity (BTS) is considered as an indicator of appropriateness of using exploratory factor analysis (Malhotra & Birks, 2007). Beside these, variance explained (VE) above 50% is also taken into consideration. The detailed explanation of the factors emerged after applying EFA separately on each constructs is summarized in Table 2.

6. SCALE VALIDATION- CONFIRMATORY FACTOR ANALYSIS

Confirmatory factor analysis (CFA) is way of testing how well measured variables represent a latent constructs (Hair et al., 2009). Fitness of the model has been assessed with various global fit indices like goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), Tucker- Lewis Index (TLI), comparative fit index (CFI), Root mean squared error (RMR) and Root mean square error of approximation (RMSEA). The model fit indices of various constructs is summarised in Table 3. Further, composite reliability and validity of various constructs has also been checked (Table 4).

7. HYPOTHESES TESTING

7.1 Impact of group level variables on group performance

In the hypothesised model, the relationship between group process variables and group performance has been tested. The effect of group process levels on group performance is determined in which model fit indices reveal model to be moderate fit ($\chi^2/df=3.235$, RMR=0.038, GFI=0.961, CFI=0.945, AGFI=0.911, NFI=0.922, RMSEA=0.079). The results show that group behaviour significantly and positively affects group performance (Fig.1) and hence hypothesis 1 '*Group process variables significantly affect group performance*' is not rejected.

7.2 Mediating effects of group leadership on group process variables and group performance

Application of the Baron and Kenny's (1986) procedure revealed partial mediation effect of group leadership (Fig. 2 & Table 5). This is due to the reason that when mediator is entered between GPV and GP, the direct relationship got reduced but still significant (SRW=0.50, $p < .05$). Thus, the hypothesis H₂ is partially accepted.

8. DISCUSSION

In line with the study results, Sharma & Bajpai (2014) found that group level variables significantly and positively affects group performance. It has been found that by anticipating and predicting each other's needs, team goals, individual team member tasks and the coordination of the team through a common understanding and expectations of performance, group leadership helps in enhancing group performance and effectiveness (Salas et al., 2008). When members of a group are attracted to other members of the group and when they are motivated to stay in the group, it will enhance their job satisfaction as well as their productivity (Carron, 2002). A strong belief in group's effectiveness largely contributes in creating a positive interpersonal climate and greater cooperation among group members which will further enhance the overall group performance. Consistent with study findings, Graen and Cashman (1975) argued that relationships are the building blocks of organisational structures and the extent to which group members experience relationships with their co-workers is positively associated with their job satisfaction and performance (Haynie, 2012).

9. CONCLUSION AND MANAGERIAL IMPLICATIONS

In the present globalised economy, team-based approach is seen as the crucial ingredient of post-bureaucratic organisations and the key to efficiency and competitiveness in the global economy. For ensuring successful group behaviour in public sector corporations, open discussions & interactions along with informal meetings must be encouraged among group members. Further, work appreciation, suitable mechanism for receiving and redressing group members' grievances promptly & satisfactorily, group member's involvement in decision making, group reward system, learning culture, fairness in organisational activities, challenging & innovative work environment, work flexibility etc. are also required for encouraging employees to perform outstanding at individual level, group level and corporation level. In addition to these, the existing literature also enticed some strategies to enhance the level of performance such as organising social gatherings, providing on the job and off the job training facilities to employees, encouraging them to make use of RTI effectively, improving infrastructural facilities, encouraging multi-tasking approach and skill development programmes to motivate and innovate employees.

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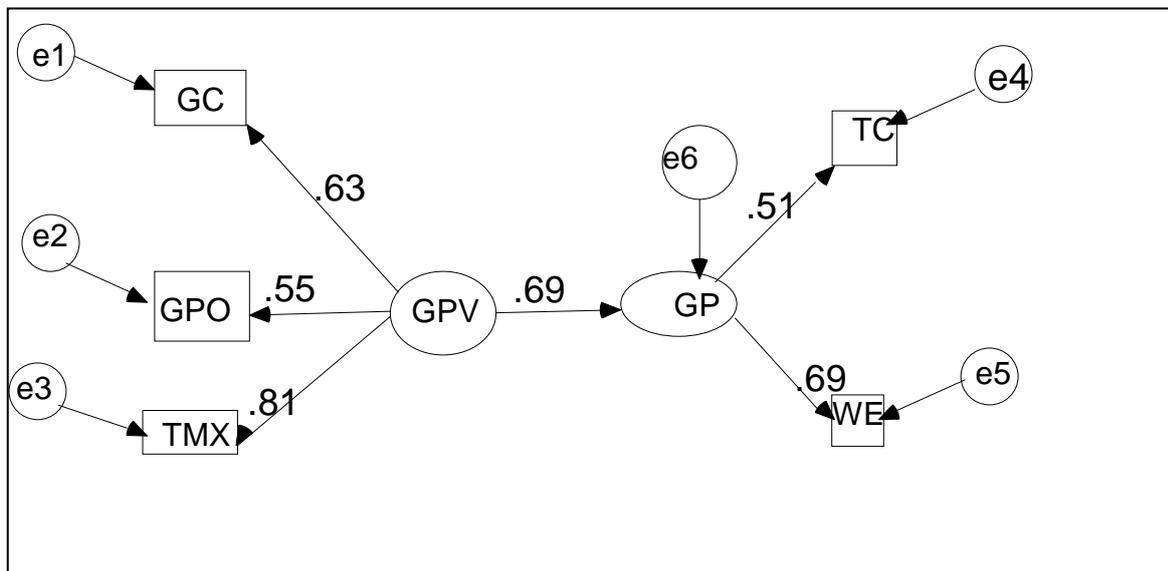
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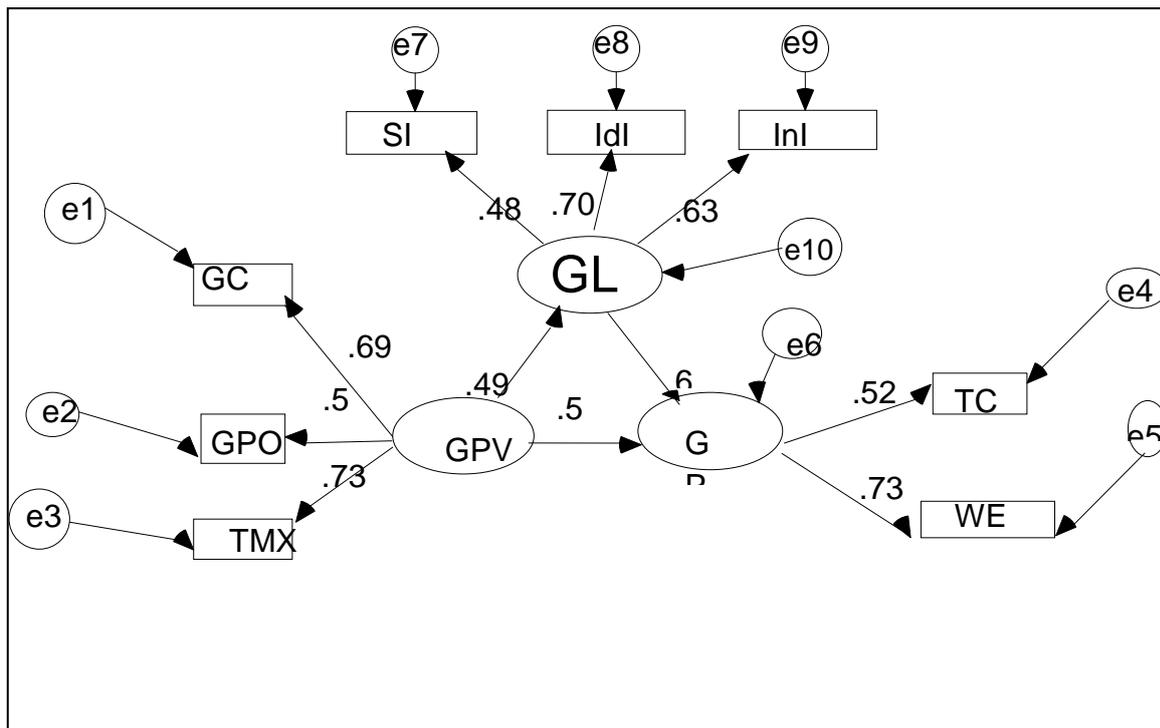
ANNEXURE

Fig 1: Impact of group process variables on group performance



Key: GPV= Group process variables, TMX= Team member exchange, GC=Group cohesion, GPO= Group potency, GP= Group performance, TC= Task completion, WE= Work efficiency, e1-e6 are the error terms of manifest variables and latent constructs.

Figure 2: Mediating role of group performance in GPV-OP relationship



Key: GPV= Group process variables, GL=Group leadership, SI= Supportive impact, IdI= Idealised influence, InI= Inspirational influence, TMX= Team member exchange, COH= Cohesion, PTCY= Potency, GP= Group Performance, TC= Task completion, WE= Work efficiency, e1-e9 are the error terms of manifest variables and latent construct

Table 1: Inter-rater reliability and inter-rater agreement within group

Construct/Dimension	ICC(1) (Criteria ≥ 0.12)	ICC(2) (Criteria ≥ 0.60)	rwg (j) (Criteria ≥ 0.70)
Group leadership	.21	.64	.89
Cohesion	.18	.63	.84
Potency	.19	.64	.78
Team member exchange	.13	.61	.90
Group performance	.57	.82	.85

Table 2: Summary of results from scale purification of constructs using rotated component method

Factor - Wise Dimension	Mean	Standard Deviation	Factor Loading	Variance Explained	Alpha (α)	Communality Value
GROUP LEADERSHIP						
F1:Supportive impact				28.851	.986	
1. My colleagues are supportive when mistakes are made	3.697	.704	.788			.741

2. My colleagues praise for my good performance	4.347	.734	.767			.734
3. My colleagues encourage me to search for solutions to my problems without supervision	3.982	.623	.677			.673
F2: Idealised impact				22.565	.750	
1. My colleagues enhances each other's commitment based on shared vision, empowerment & inspiration	4.312	.607	.871			.766
2. My collaboration with the other members in the team works well	3.890	.703	.829			.745
F3: Inspirational impact				20.786	.838	
1. My colleagues instill willingness in each other to exert their extra effort	4.046	.615	.937			.930
2. My colleagues provides sense of challenge & motivation to change	4.037	.623	.936			.929
3. My colleagues encourages critical feedback of themselves	3.918	.629	.657			.503

TEAM MEMBER EXCHANGE – TMX						
F1: Effective team- member relationship				27.043	.721	
1. Co-workers understand my problem	4.248	.623	.860			.742
2. I am flexible switching jobs with co-workers	4.422	.612	.860			.745
F2: Mutual intimacy				13.418	.686	
1. Others let me know when I affect their work	4.035	.776	.791			.695
2. I let others know when they affect my work	4.224	.518	.663			.629
3. Other members recognise my potential	4.132	.612	.573			.560
F3: Cooperative attitude				12.667	.691	
1. I suggest a better work method to my co-workers	2.297	.732	.673			.651
2. My co-workers are willing to finish work that is assigned to me	2.229	.740	.799			.705
F4: Positive attitude				12.288	.714	
1. Others help me learn better work methods	4.263	.607	.880			.825
2. I often ask my co-workers for help	4.040	.759	.778			.733
3. Others help me know what they expect from me	4.308	.657	.781			.712
GROUP COHESIVENESS						
F1: Group feedback				25.446	.845	
1. This group works well together	3.835	.729	.848			.737
2. You receive feedback & help from other group members.	4.002	.716	.815			.743
3. You consider your colleagues as your	4.014	.634	.747			.811

personal friends						
F2: Unity in group				22.848	.988	
1. All members of your group show friendliness & cooperativeness towards each other	3.753	.851	.989			.985
2. Your group is united in trying to reach its goal for performance	3.754	.854	.982			.982
F3: Informal relationship				22.567	.705	
1. You would like to work with this group again	3.911	.731	.795			.670
2. You spend time with colleagues outside the working hours	4.184	.391	.780			.794
3. Personal feelings are shared among group members	4.253	.508	.667			.550
POTENCY				60.827	.717	
1. Our group is very productive	4.031	.446	.890			.836
2. Our group can solve any problem	4.032	.521	.841			.824
3. Our group is a high performing group	4.032	.195	.805			.781
4. Our group does high quality work	4.04	.717	.752			.740
5. No task is too tough for our group	3.753	.594	.749			.722

GROUP PERFORMANCE

F1: Task completion				39.702	.705	
1. Group members work together to complete group assignments	4.064	.607	.868			.721
2. Our group members complete designated tasks in a timely manner	4.024	.540	.814			.696
3. Our group deserves a positive evaluation	4.361	.578	.744			.578
F2: Work efficiency				23.089	.682	
1. Our group produces high quality work	3.829	.772	.797			.785
2. Our group completes the work effectively	4.203	.716	.776			.743

Table 3: Fit indices of measurement models

Dimension/ Construct	χ^2/df	GFI	AGFI	CFI	NFI	TLI	RMSEA	RMR
Group leadership	2.597	0.981	0.959	0.984	0.985	0.984	0.057	0.005
Team member exchange	1.272	0.966	0.919	0.974	0.968	0.952	0.081	0.079
Cohesiveness	4.408	0.985	0.965	0.985	0.981	0.978	0.062	0.015
Potency	3.125	0.981	0.935	0.987	0.954	0.938	0.070	0.035
Group performance	3.708	0.993	0.975	0.940	0.922	0.890	0.056	0.026

Table 4: Reliability and validity of scales

Dimension/Construct	AVE	CR
Group leadership	0.706	0.786
Team member exchange	0.521	0.758
Cohesion	0.787	0.983
Potency	0.628	0.796
Group performance	0.517	0.934

Table 5: Mediating role of group leadership in GPV-GP relationship

Steps	Relationship	SRW
1	GPV → GP	0.69 (p<0.01)
2	GPV → GL	0.53 (p<0.01)
3	GL → GP	0.69 (p<0.01)
4	GPV → GL → GP	0.50 (p<0.05)