

# Examining the Impact of Group Dynamics on Ghana's Electricity Company's Organizational Performance

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**Abstract:-** A successful organization depends on its members being able to communicate, work together, establish trust, and coordinate their efforts in order to function as a cohesive Group to achieve a common objective. Therefore, without positive group dynamics, no institutions can fully utilize its workforce's potential and skills to achieve better firm-outcomes. According to Ackah (2021) ECG is a non-performing entity. Hence, this paper examined how group dynamics affect ECG's overall work-output. The 200 participants were chosen using cluster and simple random techniques. The responses collated through structured-surveys. Multiple regression was used to analyse data. Findings illustrates that group-dynamics retains substantial positive influence on ECG outcomes; [F(12, 187) = 19.6, p < 0.05]. clearness-of-group-expectancy (r=0.956, p<0.05), innovativeness (r=0.953, p<0.05), skills/expertise (r=0.942, p<0.05), group-controls (r=0.977, p<0.05), leadership/governance (r= 0.989, p< 0.05), group-communications (r=0.899, p<0.05), firm-tone (r=0.892, p< 0.05), group-structure (r= 0.897, p< 0.05), group-dedication (r=0.926, p< 0.05), teamwork (r=0.970, p<0.05), group-cooperation (r=0.939, p< 0.05), and group-cohesiveness retains (r=0.896, p< 0.05). The study recommends to ECG top-officials to build efficacious group-dynamics for staff to performance.

**Keywords:-** Cohesiveness, Collaborations, Communications, Controls, Dedication, Expertise, Firm-Outcomes, Governance, Group-Dynamics, Group-Structure, Group-tone, Innovativeness, Skills, Teamwork.

## I. INTRODUCTION

Studies have shown that performance efficiency of any corporation is subject to the entity's workers' shared partaking in the growth processes (Apex Leadership, 2021), and mutual relations/teamwork that exist among employees and the organization (Gordon, 2018). Thus, good link between employees enhances unity and coexistence (Padhi, 2019). So, unhealthy rapports among group members; for example criticising, belittling and showing superiority over subordinates mostly junior staffs put them in emotional-distress, despondency and low self-esteem leading to poor performance (Carton, 2021). According to Bolman and Deal (2023), Group members are the assets that make up the dynamics of the company, even though they may represent distinct blocs within the organizational structure. Thus, they

are expected to collaborate and work together for better company outcomes. Akintayo and Faniran (2021) identified the different kind of groups that exist/function within firm: problem-solving groups, which demonstrate problem-solving skills; self-managed groups, which function without a manager; cross-functional groups- made up of experts from various specialties; and virtual groups, which collaborate virtually/online. They made it clear that Group dynamics affect workforce efficacy. Hence, ECG's workers ability to function as a cohesive unit is crucial to the success of the company.

Gordon (2018) argued that no business enterprise can fully utilize its workforce's capabilities, technical-know-how and knowledge to improve its performance if there is a lack of constructive teamwork. According to Franz (2022), Group dynamics are shaped by the character traits of employees, the nature of task, the professional relations between employees, and the environment within which they operates. Franz defined these traits as: composition, commitment, competence, climate, cohesion, cooperation, coordination, creativity, leadership, control and communication between Groupmates and the company as a whole. Northouse (2022) and, Yukl and Gardner (2020) added that leadership is a critical factor in Group dynamics as strong leadership foster group unity and increased organizational effectiveness. Hence, leadership is considered key in the study of group-dynamics and firm performance.

### ➤ Problem Statement

The essence of this study on ECG was due to findings of Ackah (2021), Adusei (2021) and Kumi (2017), who disclosed poor operational efficiency of ECG for some time now. This poor performance issues led to the ceding of ECG's power distribution services to a private firm called Power Distribution Service (PDS). However, PDS was unable to provide the demand-guarantee required to sustain the arrangement with government of Ghana. So, state revoked the agreement (Ministry of Finance, 2019; Oppong-Nkrumah, 2019). This review confirmed the problems in the management of ECG in Ghana. For instance, the 2016 power crises cost government between \$320 to \$924m loss of economic productivity yearly (Ackah, 2021; Kumi, 2017). Energy Commission (2018) noted 2% to 6% GDP losses attributable to insufficient and unstable supply of electricity for business growth. The figure 1 below illustrates the nexus of electricity demand and supply in Ghana.

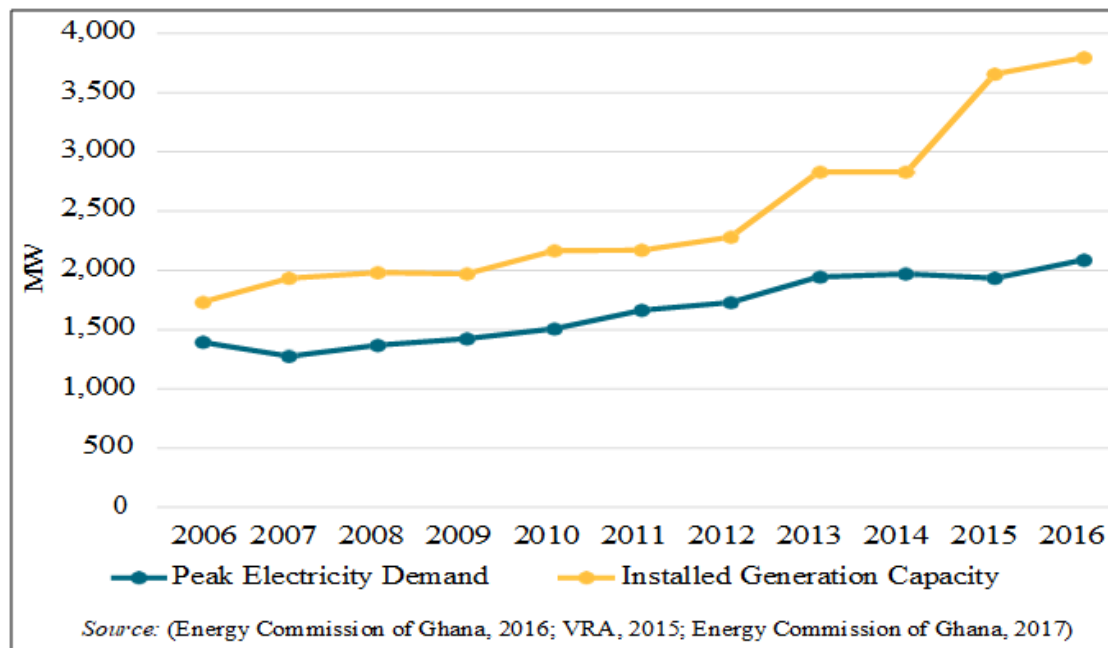


Fig 1 Peak Electricity Demand Versus Installed Generation Capacity Growth

The figure 1 showed that as the demand for electricity usage grows, the state does her best to increase supply. For example, during the course of the last 11 years, the country's highest load amplified to 49.8%, rising out of 1,385 MW in 2006 to 2,087 MW in 2016 as noted by Energy Commission (2017) and VRA (2015). This relates to a peak-load growth of 4.29% per year during that time. Generation capacity also doubled, rising out of 1,730 MW in 2006 to 3,759 MW in 2016, a growth of 8.60%. Whilst, demand fell by 1.88% in 2015 before rising by 7.97% in 2016, installed generation capacity increased by 29.14% over the 2,831 MW in 2014 and 3.79% in 2016. However, Ghana still face electricity supply shortages because of technical and fuel issues. This implies that there are problems confronting ECG (Kumi, 2017). Further study revealed 24% to 30% distribution losses annually (Energy Commission, 2022). These problems facing ECG reflect the kind of group dynamics existing in the company. Andrienko et al. (2021) asserted that group dynamics help organizations to perform well. Hence, this paper examines the influence of group-dynamics on ECG performance as a strategic move to finding answer to some challenges facing ECG.

#### ➤ Aims

- To scrutinise the influence of group dynamics on ECG's work output.
- To raise consciousness of ECG staff about healthy group dynamics factors.
- To provide ECG access to data to appraise staff capacity to create productive work groups for better results.

#### ➤ Hypothesis

- **H01:** Group structures have significant influence on firm outcomes.
- **H02:** Dedications have significant influence on firm outcomes.

- **H03:** Teamwork have significant influence on firm outcomes.
- **H04:** Cooperation amid group have significant influence on firm outcomes.
- **H05:** Cohesiveness have significant influence on firm outcomes.
- **H06:** Group controls have significant influence on firm outcomes.
- **H07:** Governance/leadership have significant influence on firm outcomes.
- **H08:** Skills/expertise have significant influence on firm outcomes.
- **H09:** Firm climates have significant influence on firm outcomes.
- **H010:** Clarity-of-Expectancy have significant influence on firm outcomes
- **H011:** Firm innovativeness have significant influence on firm outcomes.
- **H012:** Good communications have significant influence on firm outcomes.

## II. REVIEW OF LITERATURE

#### ➤ Historical Perspective of ECG

Ownership of ECG is Ghana government. It functions under the supervision of Energy Ministry. In February 1997, ECG was established in accordance with the 1963 business legislation. In April 1, 1947, it began operations as the Electricity Department, then in 1962, it changed its name to the Electricity Division. Later, NLC Decree 125 in 1967 changed it to become the Electricity Corporation of Ghana. The goal of ECG is to deliver dependable, secure, and high-quality electricity services to aid in the nation's socioeconomic development. Despite the sporadic difficulties it faces, it has continually been able to do its task till now.

➤ *Notion of Group-Dynamics*

Arjuna et al. (2021) defined team-dynamics as the subconscious, mental influence that shape group conduct and output. Andrienko (2018) sees group-dynamics as the unseen-forces that unit group member's for best performance. These invisible forces include traits of team members, firm-culture, responsibilities, tools, technology, processes, and procedures (Andrienko, 2018; Bass & Riggio, 2020). Bell (2020) noted the unseen forces of group dynamics as leadership, group structure, expertise, collaboration, coordination communication, and cohesiveness. According to Bright et al. (2019) firm performance can also be determined by organizational climate, creativity/innovation, and clearness-of-expectancy (Campbell et al. (2022)). The effectiveness and long-term viability of any firm rely on all of these variables. As defined by Levi (2022), group-dynamics are an entity's heart and character. Wright (2022) said a cohesive group enhances both individual and collective performance. On the other hand, unfavorable group-dynamics demotivate firms and leads to pointless disputes among group members, costing loss of productive time and money, dampened groups ability to achieve firm's goal, tarnishes brand image and foster mistrust among employees. Thus, toxic group-dynamics work against the interests of the companies. (Wright, 2022).

➤ *The Relationship Between Group Dynamics and Firm Outcomes*

Firm performances refer to firm's ability to convert inputs into outputs in order to attain organizational outcomes (Ronald, 2021). The primary areas of firm outcomes include: (a) fiscal health (i.e. profits/gains/revenue accrued), (b) how the firm's products are selling efficiently in markets, and (c) benefit to shareholders' of the firm. Present studies included many non-financial measures like corporate social responsibility, stewardship and leadership (Reiche, 2018; Zaccaro et al., 2021). According to Carton (2021) firm performances can be measured by different factors in relation that the specific organization. As a result, there no consensus in literature regarding the standards to be applied when evaluating performance of firms (Carton (2021; Reiche, 2018).

In terms of the relationship, Akintayo and Faniran (2021) study on group dynamics; communication skills, interpersonal bond, group interaction and firm performance showed that a significant correlation exists between communication and level of group interaction among employees. Sten et al. (2023) found strong positive relationship between clarity of group expectation, competence, commitment, and cohesion and group output. Mello et al. (2021) studied effects of group structure or composition, communication on directors and workforces' performance, and findings disclosed women who are directors/CEOs of firms do better than men. They posited that individual expertise are crucial in Group composition for improved performance. Salman & Hassan (2016) discovered that employee performance was significantly positively impacted by the corporate atmosphere, expertise, cooperation, confidence, and leadership. Sanyal and Hisam

(2018) found positive linkages amidst cooperation skills, firm-tone, confidence, and governance skills of the leaders for excellent firm outcomes. Other studies revealed direct positive association between group-structure, dedication of members to the group activities, cooperation, cohesiveness, controlling of members, governance/leadership, expertise, firm-tones, clearness-of expectancy, innovativeness and ability of members to communicate well to each other, and firm outcomes (Miller et al., 2018; McEwan et al., 2017). Below is an in-depth scrutiny of each group dynamics elements/components/factors:

• *Group Cohesiveness:*

Group cohesiveness is the extent to which people in the group are bonded/attached to each other, do things in common, appreciate and complement each other's strength and weakness (Howard, 2022). Group cohesion is influenced by factors, like mutual understanding of group aims, regular communication, physical appeal, competitiveness among groups, and good feedback (Apex Leadership, 2021). When a group is cohesive, individuals contribute actively in resolving group glitches and decision-making, which boosts firm performance. The willingness of group to pursue excellence is based on their shared respect, trust, and unity (Howard, 2022).

• *Group Coordination:*

It is the process of gathering, incorporating and aligning firm members (Howard, 2022), to attain unity of action in the pursuit of shared objectives (Franz, 2022). Implicit and explicit cooperation make up group coordination (Gordon, 2018). While implicit coordination refers to the group's talent/skills to function as a division without the need for overt communication, explicit coordination involves group members communicating their intentions, activities, and responsibilities. Group members must accurately recognize each other's duties and have a common knowledge of the situation in order for implicit coordination to be successful. This comprehension facilitates the efficient teamwork of units, department and cross-functional groups in the organization.

• *Group Collaboration:*

According to (Wright, 2013), collaboration by different units, departments in organization to perform task ensures operational efficiency, timely completion of work as well as allow for different expert knowledge to be brought on board for good work. In ECG, it enables the organization to achieve its goal of network reliability, quick system loss detection and reduction, excellent customer service, customer satisfaction, whilst ensuring that best practices are shared across units, departments and ranks of ECG.

• *Group Composition/Structure:*

Refers to top management of firm's ability to ensure that units and departmental groups are composed of diversity of knowledge, skills, and talents for proficient work performance (Bell et al., 2018). Ugezu, (2022) acknowledged that inability of leadership to composed organizational groups with expert knowledge and technical-know-how adversely affect firm output of work. Dynamic

groups are made up of people with rudimentary expertise as well as people multi-disciplinary expertise. Rudimentary expertise cover competencies which allow a quicker pace of learning. Multi-disciplinary expertise help members in carrying out tasks that occur across jobs. Northouse (2022) classified skills into technical, human, and conceptual. This implies that, for ECG to maximize performance, group structure should focus on bring together individuals with a variety of knowledge, skills, and right capabilities. As a result, management in ECG must consider knowledge, skills when building groups.

- *Group Competence or Expertise:*

Refers to individual group members' particular, recognizable expertise/technical-know-how which is critical for organizational goal achievement (Russo, 2018). Hence, it is incumbent on ECG's top management to ensure staffing the organization with people with the required skills and knowledge for effectual firm performance (Bell et al., 2018).

- *Group Communication:*

Effective communication across department and units of organizations encourages collaboration, helps in problem solving, and ensures better staff or employee engagement (Miller et al., 2018). Good communication across Groups leads to improved organizational productivity, work synergy and avoidance of duplication of same work which is often costly to organizations. It is the best approach to active feedback which reduces information asymmetry in corporations (Miller et al., 2018). Efficient communications help members in understanding issues of the group, resolving conflicts, sharing ideas, and charting the path of consensus building for best performances (Levi, 2022).

- *Clear Expectations:*

According to Miyoungh et al. (2019), clear expectation setting is a two-way process between firm leadership and subordinates. It enables both top management and subordinates to know what is expected of each other. This enhances organizational efficiency and effectiveness in terms of work performance. Hence, clear expectation improves cooperation and teamwork within organizations.

- *Dedication/Commitment to Group:*

Is an affection that bind individual members of a group/units/department within the organization together (Padhi, 2019). This defines the level of engagement and dedication group members feel toward their individual jobs and the organization as a whole. Self-dedication or commitment is the reason why some workers desire to remain in a particular group or organization rather than seek opportunities elsewhere. Commitment reflects the sense of belongingness to a group (affective), fear of loss (continuance), and the costs associated with leaving the group or staying.

- *Creativity and Innovations:*

Refers to the ability of group members to use their expertise, skills, technical-know-how, and knowledge in solving problems of the group or organization. In most circumstances, the ideas generated are novel, original and address the firm obstacles adequately. Northouse (2022) and Yukl and Gardner (2020) named the skills or expertise of these group members as conceptual talents. They are the critical thinkers of the firm. Their activities are enhanced by clarity of communication, leadership, cooperation, collaboration, dedication to work, clear expectation and group cohesiveness. This implies ECG must look out for personnel with these talents if it wants to achieve the 2021-2024 target of generating more revenue.

- *Group Control:*

Refers to the ability of group members to adhere to instruction, and follow directives. It also implies ability of group members to obey the ethical principles, rules and regulations governing such groups. More essentially, the capacity of group leaders to be able to control members, guide and direct their foot-steps in order to attain the objectives of the group as well as set standards for other groups within the organization to emulate. Northouse (2022) and Yukl and Gardner (2020) asserted that achieving excellent group control is contingent on the leader's interpersonal skills and that of the group members. Interpersonal skills refers to the ability to relate well with one another. This implies that if the leader's relational skills are autocratic, bureaucratic and does not conform to group dynamics element, there will be chaos in the group and group goals will never be achieved. The reverse is also the case if the leadership is tolerant and collaborative (Ugezu, 2022).

- *Leadership:*

It is the ability of leaders/top management to influence subordinates to achieve firm goals (Northouse, 2022). Excellent leadership allows followers to willingly use their innate abilities and potentials to achieve firm performance even in difficult times (Zaccaro et al., 2021). It encourages unity, collaboration, effective communication, and teamwork (Yukl & Gardner, 2020).

- *Firm-Tone:*

Refers to the atmosphere prevailing in the organization. This is predicated on the dominant culture existing in the firm which shape the behavioural patterns of the staffs (Scott & Davis, 2017). Most often, it the leadership style of top management that defines the climate employees experience in the organization. Good-natured climate promotes employee performance.

➤ *The Study Framework*

The hypothesized framework provides the constructs in the study. It demonstrates the link between Group dynamics and ECG-firm outcomes.

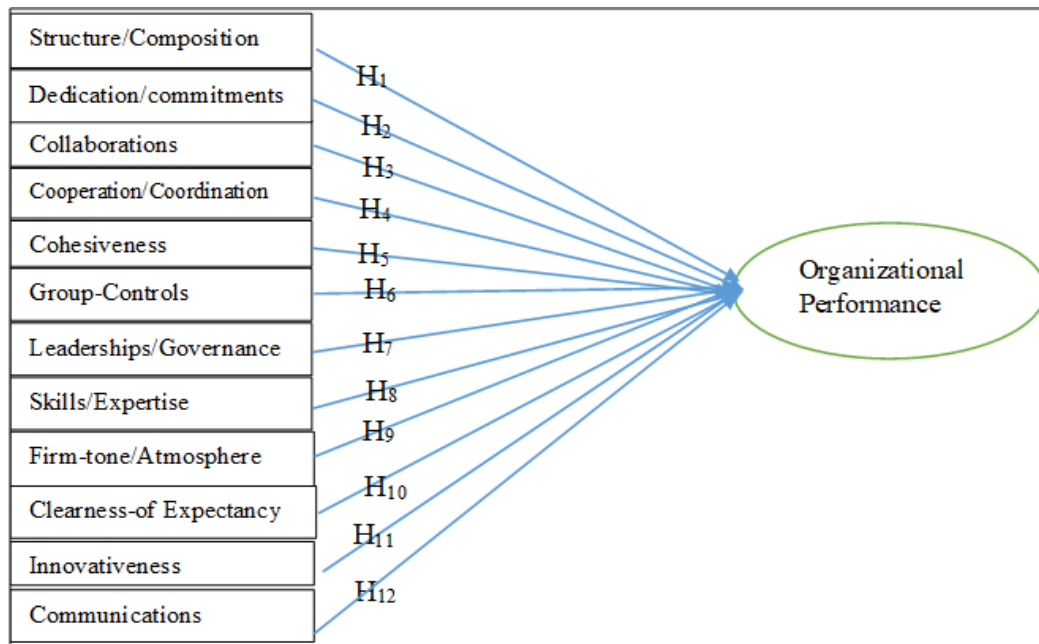


Fig 2 Hypothesized Conceptual Model of the Study Constructs

Source: Adapted from Apex Leadership (2021), Franz (2022), Northouse (2022) and Levi (2022)

### III. METHODOLOGY

➤ *Research Design and Sampling Procedures*

This paper is purely quantitative involving correlation and cross-sectional designs (Creswell & Guetterman, 2020) to assess group dynamics on firm performances. Quantitative studies use large data in order to generalize the result from the sample to the entire population (Bougie & Sekaran 2020). Participants were group based on their location in clusters (Williams et al., 2023), and simple random was used to select the 200 participants from ECG-Ketu South, ECG-Ketu North, ECG-Akatsi South, ECG-Headquarters, Accra and Keta municipal. Likert scale was used to rate the responses from Agreed-to-Disagreed. The reliability was 0.80. SPSS version 20 and Microsoft excel 2013 were used for multiple hierarchical regression analysis of data.

### IV. RESULTS

➤ *The Correlation Betwixt Group-Dynamics and Firm Outcomes in ECG*

The table 1 below provides the analytical perspective of the relationship betwixt group-dynamics and firm outcomes in ECG

Table 1 The Correlation Betwixt Group-Dynamics and Firm Outcomes in ECG

Team Dynamic Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
Organizational Performance	1.000												
Composition	.981	1.000											
Clarity of Expectation	.956	.912	1.000										
Collaboration	.970	.967	.930	1.000									
Communication	.988	.985	.926	.958	1.000								
Firm Climate	.932	.930	.846	.892	.924	1.000							
Leadership	.995	.986	.936	.960	.992	.953	1.000						
Control	.958	.902	.967	.899	.933	.838	.939	1.000					
Coordination	.928	.889	.864	.880	.909	.794	.908	.911	1.000				
Cohesion	.957	.907	.944	.885	.929	.906	.954	.958	.872	1.000			
Competence	.942	.892	.868	.906	.918	.839	.928	.917	.956	.915	1.000		
Commitment	.914	.867	.926	.863	.886	.737	.884	.946	.923	.882	.892	1.000	
Creativity/Innovation	.953	.926	.881	.925	.937	.842	.938	.921	.953	.879	.949	.927	1.000

Sig. 0.000

Sample size = 200

\*\*Correlation is significant at 0.05 level (2-tailed)

Source: Field Data, June 2019

The result in table 1 showed that a significant positive relationship exists between Group dynamics variables and organizational performance in ECG. For instance, clearness-of-expectancy ( $r=0.956, p<0.000$ ), innovativeness ( $r=0.953, p<0.000$ ), expertise ( $r=0.942, p<0.000$ ), controls ( $r=0.977, p<0.000$ ), leadership/governance ( $r= 0.989, p< 0.000$ ), group-communications ( $r=0.899, p<0.000$ ), firm-tone ( $r=0.892, p< 0.000$ ), group-structure ( $r= 0.897, p< 0.000$ ), group-dedication ( $r=0.926, p< 0.000$ ), teamwork ( $r=0.970, p<0.000$ ), group-cooperation ( $r=0.939, p< 0.000$ ), and group-cohesiveness retains ( $r=0.896, p< 0.000$ ). The analysis shows that group-dynamics can substantially influence ECG outcomes positively; [ $F(12, 187) = 19.6, p < 0.05$ ]. All the p-values recorded were less than 0.05, indicating positive association between group-dynamics and ECG-performances in revenue generation, network reliability etc.

➤ The Table 2 below Shows the Model Summary.

Table 2 (a) Model Summary<sup>b</sup>

Table 2 (a): Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.964 <sup>a</sup>	0.988	0.893	0.00001

a) Predictor (Constant): clearness-of-group-expectancy, innovativeness, expertise, controls, leadership/governance, communications, firm-tone, structure, dedication, teamwork, cooperation, cohesiveness.  
 b). Dependent variable: Organizational Performance

Source: Field Data, June 2019

As summary metrics of model fit, the regression coefficient ('R'), its square ('R<sup>2</sup>'), and the adjusted form-value are displayed in table 2(a). The R= 0.964, shows the extent of the association betwixt group-dynamics and firm outcomes (ECG). The R<sup>2</sup> illustrates the proportion of variability in ECG's outcomes and group-dynamics that can be attributed to group-dynamics variables/elements such as cohesiveness, and firm-tones It is 98.8% in this case. The next table 2b provides detailed information on Analysis of Variance,

Table 2 (b) ANNOVA<sup>a</sup>

Table 2 (b): ANNOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	408451.555	12	34037.630	18.493	0.000 <sup>b</sup>
	Residual	0.000	187	0.000		
	Total	408451.556	199			

Source: Field Data, June 2019

The ANNOVA displays a statistically significance test/p-value of the model. This implies that there is a direct positive relationship between group dynamics components and firm outcomes in ECG (Akintayo & Faniran, 2021). Statistically, ( $F(12, 187) = 18.5, p < 0.000$ ).

The Regression coefficients table 2(c) below indicates the degree of group-dynamics dimensions influence on ECG's firm outcomes. Group leadership/governance has the greatest value among the group-dynamic variables,  $\beta = 0.569; t = 4.691$ . The second is expertise-  $\beta = 0.546; t = 0.189$ , cohesiveness had  $\beta = 0.435; t = 2.740$ , group structure-  $\beta = 0.313; t = 2.561$ , communications-  $\beta = 0.342; t = 2.665$ , and clearness of expectations-  $\beta = 0.216; t = 1.453$ . All these values have positive link with firm performances. Leadership is the greatest influencer, suggesting that leadership is key in the effective administration of all firms (Northouse, 2022).

Table 2 (c) Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.943E-011	0.000		1.546	
Composition	1.000	0.000	0.313	2.561	0.000
Clarity of Expectation	1.000	0.000	0.216	1.453	0.000
Collaboration	1.000	0.000	0.125	1.001	0.001
Communication	1.000	0.000	0.342	2.665	0.010
Firm Climate	1.000	0.000	0.131	-.729	0.000
Leadership	1.000	0.000	0.569	4.691	0.000
Control	1.000	0.000	0.054	0.191	0.000
Coordination	1.000	0.000	0.064	0.183	0.003
Cohesion	1.000	0.000	0.435	2.740	0.000
Competence	1.000	0.000	0.546	0.189	0.002
Commitment	1.000	0.000	0.039	0.200	0.006
Creativity/ Innovation	1.000	0.000	0.054	0.226	0.000

a. Dependent Variable: Organizational Performance

Source: Field Data, June 2019

V. DISCUSSIONS

The result of the study with ECG employees revealed that Group dynamics dimensions (Clearness-of Expectancy, creativity/innovation, competence, Group control, leadership, communication, organizational climate, composition, commitment, collaboration, coordination, and cohesion) have significant effect on ECG performance; [ $F( 12, 187) = 18.5, p < 0.05$ ]. This was supported by Bass and Riggio (2020), Bell (2020), Bolman and Deal (2023), Northouse (2022), Patterson et al. (2018) and Yukl and Gardner (2020), who pointed out that effective management of Group dynamics improves worker performance. With respect to hierarchical regression analysis, leadership has the highest effect on organizational performance; followed by competence, cohesion, composition, communication, and clarity of expectation (Whetten & Cameron, 2021).

VI. CONCLUSION AND RECOMMENDATIONS

The study concludes that Group dynamics dimensions such as Clearness-of Expectancy, competence, leadership, communication, commitment, and cohesion have significant effect on organizational performance. The policy implication of this study for practice in ECG is that top management of ECG and government who is the major shareholder in the company implement reforms that ensure that workers develop these soft skills; (leadership, communication, collaboration, coordination competence,

and cohesion) to improve personnel and work management. Once the workers have these skills built in them, it will translate into improvement in organizational performance of EGC.

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