Managing Group Dynamics and Effectiveness of University Staff: Evidence from Nigeria

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ABSTRACT

Research evidence linking managing group dynamics (GPD) to the effectiveness of academic and non-academic staff of Nigerian universities, is ostensibly scarce. While existing studies have majorly addressed the performance impact of group dynamics in general perspectives, there is a gap in gauging how managing dynamics in groups could lead to the effectiveness of staff of Nigerian universities. Built on two complementary theories, the study has sought to investigate the relationship between pooled constructs of group dynamics, including social integration (SI), team leadership (TL), interpersonal facilitation (IF), group efficacy (GE); and effectiveness of university staff in those measures as in productivity (PD), adaptability (AD), and flexibility (FL). The sample size of 253 staff was selected from 2050 staff, and a self-structured questionnaire was designed. Instrument reliability was confirmed for the individual construct of GPD and staff effectiveness (SE) and Confirmatory Factor Analysis (CFA) which was used to validate the instruments. The frequency and percentage table, means, and standard deviations were engaged as descriptive tools. Linear and multiple regressions and variance inflation factor were designed to test hypotheses and relationships. Findings revealed a significant statistical relationship between the dimensions of GPD and measures of staff effectiveness except for the dimension of GPD (SI) with a weak aggregate predictive contribution. The study posited the need for management of the federal universities to forge integration with staff through adapting strategies of group dynamics to improve the effectiveness of academic and non-academic staff of universities. Especially, staff with innate creative ability and genius for innovation should be supported and motivated to reach their potential.

Managing dynamics in group is at the heart of every human accomplishment across multi-level, social, and interpersonal associations (Kozlowski, 2017). The preponderance of
research addressing the effects of group dynamics (GPD) on a team and individual performance notwithstanding, rarely could be said about the impact of such studies on the effectiveness of staff of academic and non-academic staff of universities (Arashpour et al., 2020; Klug & Bagrow, 2016; Naveenan & Kumar, 2018; Oyefusi, 2022).

The evolving technology such as digitalization, rapid increase in knowledge workforce, and the growing need to gain competitive advantage through people, organizations are being compelled to explore ways to build cohesion among divergent work elements even in their most ambivalence and byzantine formation (Cascio & Montealegre, 2016; Jain & Ranjan, 2020; Parry & Battista (2019). The popular axiom that “there is strength in diversity” should spur managerial actions and behavior towards recognizing differences in individuals and tapping on their potential for a more virile and enviable institution (Aishwarya & Karuna, 2020; Hussain et al., 2021; Shaban, 2016).

Managing group dynamics remained an impelling force to drive change, perfect missions and growth, spur innovation and cohesiveness among most organizations (Hussain et al., 2018). In an evolving world of change exacerbated by increasingly multiform complex work group, understanding differences in groups and their behaviors should push organizations to evoke leadership culture that maximizes the premium of forging synergy in teamwork. Managing group dynamics is the most taxing aspect of managerial job particularly as it involves understanding how and why individual behaves within the group level and managerial actions required to deal with changes in behaviors, work attitude, and personality. The concept of GPD could be traced back to Kurt (1947), which he explained as the effects of roles and behaviors people assumed, have on individuals and the group as a whole. Gencer (2019, p. 223) explained GPD as the changes that may occur in any part of a group and an understanding of actions and reactions in the group structure that affects group members. In the university terrain, just like any other social organization, hardly could there be a platform where all members are expected to behave or act in quite consistent and predictable fashion (Clawson, 2008; Patey, Hurt, & Francis, 2018).

Be that as it may, the university requires the collaborative effort of members, irrespective of its highly diversified workforce, in order to achieve pre-set targets and missions, while recognizing differences in staff’s biases, perceptions, mental aptitude, motivations, and personalities. In the past, concerted efforts have been made by scholars to link dynamics in work group to team performance, whereas little was echoed about managing changes in group behaviors to drive commitment to task and group goals. It has become imperative that universities craft and deploy strategies to manage diverse work groups – their differences, attitudinal changes, perceptions, interests, and personalities, as leeway to enhance the job effectiveness of the university staff.

**Literature Review**

**Group Dynamics**

Author such as Homans (2018) conceived a group as a kind of relationship that is more enduring and tighter than a social relationship, though less organized than a formal one. Dwelling on the above platform, Matelski & Hogg (2015, p. 422) had explained GPD as “the interplays of people’s social cognitions and behavior operating within a group or between groups”. However, a common definition of GPD is the one postulated by Shaw (1976, p.
which he summarized as “the study of forces operating within a group”. In other words, GPD is about relations and powers among the members of a group within an organization. This implies that the dynamics in a group involve the group itself, its structure, conflicts, unity, actions and inactions, decision, culture, norms, behaviors, personality, and qualities of individual members.

Tuckman (2001) proposed stages of group development: Forming - the beginning stage and foundation of a new group where members interact with each other initially; Storming - the actual interaction involving the context of the task to be achieved with individuals exhibiting a high level of competition and conflict; Norming – where the roles and authority of each member become clearer as they settle down to recognize and appreciate the skills and knowledge of each other; Performing – the stage marked by synergy building with team members striving and working together to meet a common goal; and Adjourning – termination point of the group development process and members separating from each other once the purpose of the group is fulfilled. In the group structure are the group members, leaders, roles, physical structure, time, size, status, activities, cohesiveness, norms and interaction patterns, goals, and objectives (Trotzer et al., 1974; Tuckman, 2001).

It is glaring from the foregoing that GPD is a unifying phenomenon in any social affiliations, and irrespective of its nature, there are underlying features: Socialization – GPD stimulates aggregation of ideas, open communication, and sharing of views on issues; Adaptability shapes leadership patterns, enduring personalities, roles and responsibilities, and allow individuals to adjust to changing conditions including the right to free entry and exit; Change – A certain level of strictness or flexibility that determines extent of dynamics that occurs in a group and inculcating in the group tendency to continually reform, and re-adjust in order to address stress, burnout, conflicts among the group; Group efficacy – promoting culture of identity that influences how group predict their essence and reveal the nature of personalities that such group reflect; Reciprocity – group identifying common areas of interests and intensifying exchange culture to deepen ties and forge cooperativeness in a win-win situation; Cooperation and Competition - the level of mutuality and team spirit that subsists among members, will foster wholesome competition and engender a climate of trust, openness and commitment to goals; Resilience – that which impel individuals not to give in to threats or unpleasant situations but to see any setback as a stepping stone to reach greater ambitions and aspirations (Matelski Hogg, 2015; Tuckman, 2001).

**Theoretical Framework**

**Theory of Competition and Cooperation/IPO**

The theory of competition and cooperation, refined by Johnson and Johnson (1989), was originally developed by Deutsch (2006). Implicit in the theory are two underpinnings – interdependence among group goals and the kind of actions by team members to accomplish results. Organization as an organic entity enmesh in inter-and intra-group competitions and cooperation (Hoffmann et al., 2018). First, there is competition among the employees and then competition between management and the group, which may result in some kind of consensus. From individual to a group level, the evolving trends have been to compete for resources, talent, job placement, profit, customers, positions, service, fair treatment, tasks, or rewards. The gain of competition within the group is maximized when the factors that spur it
and the motivation are not so destructive as to impede sustained harmony, cohesion, and shared values.

In reality, group competitions, in whatever mode it may take, could be a recipe for group disintegration, conflict, redundancy, and poor job satisfaction, if not cautiously and prudently addressed. On the other hand, fair competition in such areas as a mutual agreement to add values to products and services and uphold core ethics, talent development, self-development, resource conservation, and waste reduction will reduce frictions and goal ambiguities. The above cannot be attained in the absence of cooperation. In practice, competitions within and across the group often have a negative connotation, though they can trigger grounds for compromise or cooperation. In effect, the essence of managing a dynamic work group is to forge cooperation which can only be attained when members surrender their differences and personal interests and are willing to sacrifice their time, resources, and talents to attain a common goal. The study has posited that by adapting building blocks of GPD in the forms of SI, TL, IF, RC, and GE, universities can manage competitions with confidence and mold group behaviors and actions toward intergroup cooperation. In the university community, in-group competitions and rivalry among staff abound as members compete for recognition, job upgrade, career upgrade, work autonomy, and robust remuneration. However, competition in a group is not bad as it can force management to learn about individual differences, group norms, perceptions, beliefs, motivations, self-efficacy, and needs. The manner and context management of universities deploy and adapt different dimensions of GPD to individual and group needs, with enabling infrastructures in place, will potentially impact group cohesion and thus translate to effectiveness.

The authors deemed it fit to include the IPO model due to its complementary role in facilitating understanding of basic elements of GPD as they connect to SE (Forsyth, 2010; Landy & Conte, 2006). The IPO theory is complementary enough to aid our discussion on linkages of dimensions of GPD and processes with different measures of effectiveness. The IPO model, as a corollary of system theory, suggests that interactions between and among contributing factors in any social context would lead to positive feedback (Forsyth, 2010). The input in this sense will include staff’s peculiar characteristics (both implicit and explicit), interests, motivations, diversities, career prospects, perceptions, and perceived differences. The process will involve deploying infrastructures, resources, and leadership architectures to manage dynamics in a group, which is expected to influence the group’s obsession to perform. The output is the driver or result of proper alignment of processes and inputs, which is effectiveness.

**Typologies of Group Dynamics**

Butler and Waldroop (2021) analyzed the psychological tests of 7,000 business professionals and noted four dimensions of group dynamics: influence, interpersonal facilitation, relational creativity, and team leadership. According to the authors, an individual could be outstanding in at least one of the four dimensions, or in different areas, or none of them. Recently, Alvarado (2021) highlighted the four major elements of group dynamics: communication and interaction patterns; social integration, and influence on cohesion and group culture. The above studies provide a framework from which the authors derived the constructs of the independent variable (GPD) of this study.
Social Integration
As defined by Wang and Kim (2013), Social Integration (SI) is about how new entrants into a group experience cooperative social interactions with the already-existing group members, get satisfied with the actions of other group members, and feel attracted to the group. Within the above conceptual platform, it is argued that socially-integrated groups believe that all their members belong to the group and have the right and power to influence it (Yozgat & Gungormez, 2015). SI, in this sense, can be termed as one of the most crucial indicators of a newcomer’s level of adjustment to a group, and it is determined by how such person develops a social sense of the organizational environment and how they may be liked and welcomed by the group’s members.

Wang and Kim (2013) opined that the social integration aspect of group dynamics works both for newcomers and existing members. Management experts have theorized that integration into a social group comprises the establishment of a situational identity and that those who successfully establish an identity through social communications more strongly identify with the organization as a whole, which in turn, enhances their level of commitment (Wolfersberger & Thomas, 2013; Yozgat & Gungormez, 2015).

Another striking significance of SI is that it is a sensation in the quality of group dynamics that concerns itself with making a group more equitable. Obomanu and Akintokunbo (2019) has affirmed that whether a staff achieves personal identity and self-esteem, SI is influenced by such features in the workplace environment as freedom from prejudice, a sense of community, interpersonal openness, and the absence of stratification in the organization and the existence of upward mobility.

Team Leadership
Sharma and Jain (2013) viewed Team Leadership (TL) as a process in which a person influences others to accomplish an objective and directs in a way that makes it more cohesive and coherent. In a related perspective, Wammy and Swammy (2014) viewed leadership as a social influence process whereby the leader seeks the voluntary participation of individuals to reach group aims or organizational objectives. The aforementioned definitions imply that leadership is tied to those principles that focus on ideas about leaders’ traits and how they act towards attaining set goals and objectives.

In order to justify their relevance, a team leader must be poised to entrench culture of inclusiveness and productive work climate, provide guidance and direction, inspire and motivate individuals, and direct group efforts towards achieving a common goal (Eromafuru, 2021). In addition, studies have shown that group members who are resilient in TL are more likely to succeed through their interactions with other members (Nichols & Cottrell, 2014).

Interpersonal Facilitation
Interpersonal Facilitation (IF) is a crucial component of group dynamics tied to team leadership. IF consists of interpersonally-oriented behaviors geared towards accomplishing set group objectives; it differs from group-specific actions. The widely-held opinion among scholars is that IF propels deliberate actions that boost morale, foster cooperation, eliminate frictions, and aid group members in carrying out their tasks (Montijo, 2020). Consequently, IF is thought to embrace a series of relational and social platforms required to support
teamwork and effectiveness in an institutional setting (Berger, 2018; Van Scotter & Motowidlo, 2016).

Acknowledging the frantic effort that scholars have made to treat IF as a sub-construct of group dynamics, there is growing interest in this emerging paradigm. In the recent times, IF has been understood as facilitating the studying of such concepts as personality, knowledge structures, social interaction, language, nonverbal signals, emotional experience and expression, supportive communication, social networks and the life of relationships, influence, conflict, computer-mediated communication, interpersonal skills, interpersonal communication in the workplace, intercultural perspectives on interpersonal communication, escalation and de-escalation of romantic or platonic relationships, interpersonal communication and healthcare, family relationships, and communication across the life span (Manning, 2020).

**Relational Creativity**

According to European Union and European Council (2016), creativity is considered a key issue in group dynamics. Essentially, Relational Creativity (RC) is influenced by the social relations and interactions individuals engage in during their creative processes. Pertinent to mention that an individual’s creative triumph could essentially be influenced by social recognition from group members at the workplace. The above explains why it may be hard to integrate creativity in a formal university system and, more so, the realization that during the creative process, the objective of the activities is to innovate, contribute to, and improve the overall common content of the knowledge field.

In stressing the essence of creativity in a workgroup, Frey (2021) affirmed that the future of creativity is relational, in that a group or an organization cannot continually record success if its members lack. Due to this factor, most groups fashioned out relational team support - relational processes involving the exchange of help, information, advice, and emotional concern that can help group members combat the obstacles that limit their creativity (Mueller & Cronin, 2019).

**Group Efficacy**

Self-efficacy refers to individuals’ perception of their ability to achieve a task (Rosander et al., 2020). Group Efficacy (GF), also called “collective efficacy,” is about the perceived ability of a group to perform or achieve set objectives. Gibson, Randel, and Earley (2020) identified three major methods of assessing GE: group potency, aggregation of group members’ estimates, and group discussion. Levine and Hogg (2010) defined group potency as the general belief held within a group that it can be effective. It has two essential aspects: the belief of shared sureness among the group members; and the general certainty that the group is effective across a different set of tasks or situations rather than only in a specific context (Levine & Hogg, 2010).

GF is a growing concept with boundless potential for a group particularly in its task and components. This may have influenced the work of Butel and Braun (2019) in their article, where they outlined five main components of group efficacy: social cohesion, empowerment, willingness to intervene, social trust, and social control. Social cohesion concerns the
willingness of the members of a group to cooperate for the sole purpose of survival and prosperity (Fonseca et al., 2019).

**Staff Effectiveness**

The focus of effectiveness is on the actual attainment of organizational goals and not so much on the means necessary to reach them or the speed at which they are reached. Effectiveness is essential for improving results, and in order to perform effectively, clarity is needed with roles and functions clearly defined with deadlines. According to Boone et al. (2019), staff effectiveness involves the capacity a staff has to accomplish the goals approved by an organization.

Coulter et al. (2015) offer an expanded conceptualization of effectiveness which they postulated as a staff’s total or aggregate output of activities and time taken over the period to achieve result. The authors went further to declare that the level of staff effectiveness may be characterized as low, medium, and high and to measure effectiveness. The authors recommended such attributes as efficiency, quality, innovation, creativity, commitments, satisfaction, cohesiveness, flexibility, customer relations, communication patterns, and employee efforts.

Armstrong (2009) however, categorized measures of effectiveness majorly into two: profitability and productivity. Daft (1998) and Amah & Ahiazu (2013) posited organizational effectiveness as a concept that is tough to measure in organizations as it involves variables that concern the entire organization and its departmental levels. Daft further suggested two ways of evaluating the effectiveness of an organization – the traditional and modern approaches. The former includes approaches like the “goal approach”, which is centered on assessing the desired outputs from employees versus the actual employees’ outputs; while the latter includes “profitability”, which reflects the overall performance of the organization.

However, Mott (1972), Steers (1977), Sharma and Samantara (1995), Kataria et al. (2013), Cameron and Whetten (1981) opined that concerning staff and organizational effectiveness, certain variables have been proven to be the most extensively used for its evaluation. Advancing further on this, Mott (1972, p. 17), who earlier equated organizational (OGEF) to the ability of an organization to mobilize its centers for action, identified Productivity - connoting the quality and quantity of staffs’ output: product or service; Adaptability - measures of how staff and the entire organization adjust to situational issues, whether anticipated or existing; and Flexibility - measures of how structures in an organization are maintained. Mott later developed the eight-item subjective instrument to measure effectiveness in the Hospital service, which revolved around the above three measures.

The present study intends to extend Mott’s prescription for measuring effectiveness to the needs of academic institutions due to the study’s thrust on effectiveness. Mott’s theory is thought to be all-encompassing as it synthesizes contemporary theories and has provided strong theoretical bases from which other theories evolve. Research applications of Mott’s (1972) measures of effectiveness in the academic and non-academic staff of the university are novel or evidently embryonic, particularly in the case of Nigeria. Finally, as staff’s effectiveness is directly related to organizational productivity and success, it is essential to
measure it since each staff creates results that mainly comprise the correlation between the quality of products and their dedication to the workplace.

**Hypotheses Development**

**Relationship between Social Integration and Staff Effectiveness**

Research evidence has unveiled that minorities differed in their level of integration into the dominant societal group, which supposedly would influence their responses. Antioco et al. (2012) examined target and non-market effects for minorities whose levels of integration into the mainstream society vary and found that fully integrated minority groups exhibited target/non-target market effects more than the less integrated ones. It is obvious from above that study’s focus was on minorities’ differential responses to typical marketing advertisements depending on the nature of integration. The present study has shifted focus to academic institutions to gauge how GPD inclusive of SI influences the effectiveness of staff of the university.

The crux of Yozgat and Gungormez’s (2015) study was the mediating role of SI on the effect of newcomers' proactive socialization tactics on their organizational commitment. Findings underscored that proactive socialization tactics applied by new group members and their social integration processes have a positive impact on their commitment towards organizational objectives; and that SI has a mediating effect on the relationship between proactive socialization tactics and members’ level of commitment toward organizational goals.

In a similar vein, SI, as a component of group dynamics and its influence on staff commitment at the workplace, was the focus of Estivalete et al.’s (2016) research that involved 247 staff of Railway Logistics Company in Rio Grande do Sulwere, where it was found that a staff’s level of commitment to organizational tasks, increased with effective group relation. Braithwaite (2019) analyzed the relationship between GPD and the effectiveness of a heterogeneous international research group in Cartagena, Colombia, with the finding showing a significant positive relationship between the variables.

While isolating social integration as a component of group dynamics, the present study has built it into the augmented model alongside other constructs whose combined impact on staff effectiveness is expected to be interactively impactful. By targeting universit staff in the present study, we expect SI to be potentially contributive to staff level of effectiveness. Based on the above constellations, the study has proposed to test the hypothesis that:

**H01:** There is no significant statistical relationship between social integration and staff effectiveness.

**Relationship between Team Leadership and Staff Effectiveness**

In their curious move to gauge the influence of TL on team performance, Gadirajurrett et al. (2018) sampled 262 staff of seven software companies randomly selected, and questionnaires were used. Correlation analysis indicated a strong relationship between transformational leadership behaviors and team performance. Mumford (2020) examined how fictional team and team conflict could be mitigated by team roles where the performance of task and social team roles was found to negatively correlate with task and relationship conflict for both
works and types, and functional team roles were found positively related to team performance. Galinsky and Schopler’s (2019) study on the relationship between GPD and SE has linked ineffective gatherings and disappointed group members to leaders’ lapses in how groups behave and change overtime. Scott (2012) has argued that existing studies on leadership were conducted in artificial environments with considerations given to individual induced factors solely. Determined to share a broader view, Scott sought to know the influence of contextual factors on a work team in the larger organizational environment of a manufacturing company. The study found the importance of effective leadership roles and a broader organizational environment in achieving team effectiveness. The study seeks to confirm the hypothesis that:

**Ho2:** There is no significant statistical relationship between team leadership and staff effectiveness.

**Relationship between Interpersonal Facilitation and Staff Effectiveness**

A study on the relationship between interpersonal facilitation in group settings and staff effectiveness of the Amazon Mechanical was carried out by Le Sante et al. (2021) and found that staff who exhibited IF were more likely to be perceived higher in extraversion (experiencing positive emotions in social settings and interactions) which makes them do well in the task-related activities.

More so, Van Scotter II and Van Scotter (2021) examined whether autonomy moderated the relationships between task performance and IF with the overall effectiveness of Air Force Technicians (AFT) and found a significant positive relationship between staff’s level of IF and overall group effectiveness with autonomy though, not found to moderate the effects of task performance on effectiveness.

The new research, IF is only introduced as a sub-construct of GPD, and the authors are interested in knowing the potential direct effect of GPD inclusive of IF on effectiveness. Therefore, it is hypothesized that:

**Ho3:** There is no statistically significant relationship between interpersonal facilitation and staff effectiveness.

**Relationship between Relational Creativity and Staff Effectiveness**

There is a dearth of empirical research linking RC to staff effectiveness, just as quite impressive works have been accomplished in conceptualizing and understanding the theory and processes of RC in vocational and institutional settings (Mueller & Cronin, 2009; Pierroux et al., 2022). The research by Pirola-Merlo and Mann (2004) sought to know the connection between individual team members’ creativity and team creativity (TC) with the mediation of the climate for creativity in the workplace. Resting on a multi-level theoretical framework, authors found that scores for TC could be explained by aggregating through statistical means, processes across people and time and that TC at a particular time could be understood as either the average or weighted average of creativity of team member; whereas the creativity of project outcomes was explained by either the average or maximum of TC across time-points, implication that team climate influences TC indirectly but not directly by team members.
Reflecting on findings from diverse empirical studies on creativity, Chen et al. (2021) undertook a study that relates trust at different levels to creativity. Three levels of trust: cognition and affective-based, interpersonal trust mediated by team communication and commitment, and group trust mediated by collaborative culture, climate, and team communication, were found to influence creativity positively. Thus, the hypothesis to be tested is:

**Ho4**: There is no statistically significant relationship between relational creativity and staff effectiveness.

**Relationship between Group Efficacy and Staff Effectiveness**

Transiting from prior studies that linked group efficacy to a narrow range of productivity measures, Pescosolido (2003) has developed a model that connects GPD to reversed measures of productivity and found that groups with individuals with a higher level of group efficacy rated higher on viability, learning and self-development, and opportunities for individual autonomy while group efficacy’s impact on satisfaction with leadership opportunities was not supported.

A study by Gibson (1999) aligned with the popular notion that group efficacy is complex and could be moderated by several contingency factors. Findings from the two intercultural studies revealed that team member would work independently with low collectivity when work uncertainty was high. In this case, group efficacy was not related to group effectiveness. The reverse was true; when uncertainty is low, group members would be interdependent in their work and display high collectivism, implying that the relationship between GE and team EF would be positive.

Silver and Bufanio (1996) undertook an in-depth study on the impact of group efficacy and group goals on group task performance, with findings showing GE correlating significantly with group goals (52%) and task performance (48%). Using different geographical and contextual settings, the present study deployed an expanded model of GPD (inclusive of IF) to link to SE, to which we have opted for the hypothesis that:

**Ho5**: There is no statistically significant relationship between group efficacy and staff effectiveness.

**Figure 1** is a model reflecting the relationship between constructs of GPD and staff effectiveness.
**Method**

The survey method of descriptive research was adopted, involving academic and non-academic staff of federal universities in the south-south geopolitical zone. The study used a purposive sampling technique to select three universities out of six federal universities with a population of 2050. The universities’ inclusion was informed by their strategic positioning and the fact that they were found to share common characteristics across the six geopolitical zones. The selected institutions were: Federal University of Petroleum Resources, Effurun, in Delta State; Federal University, Otuoke, Bayelsa State; and University of Port Harcourt, Choba, in Rivers State. Target audience was the core direct non-peripheral academic and non-academic staff in the active service of the universities. The simple random sampling procedure produced a sample size of 335 using Taro Yamane’s pattern. However, the data screening procedure led to the rejection of 82 questionnaires, leaving 253 used for the study. The unused responses included: 22 were incorrectly filled; 17 were incomplete; 10 were mutilated; 18 arrived late, and 15 were unreturned. The questionnaire was self-structured along the dimensions of GPD and SE using the 5-Point Linkert Scale. For Group dynamics, the measures were: SI (8 items); TL (8 items); IF (7 items); RC (7 items); and GE (7 items). The measures of SE were: PD (4 items); AD (5 items); FB (5 items). The reliability and validity of the instrument were confirmed. Copies of the validated and certified questionnaire were administered and retrieved via a mail survey. Data collected were analyzed using the
Results Test Reliability
In Table 1, the Cronbach’s Alpha value obtained for each variable construct, SI = .97, TL = .97, IF = .95; RC = .95, GE = .96, and SE = .99, was above .70 which is the minimum recommended for social science research (Hair et al., 2011). We thus affirmed that the factors are reliable and suitable for the study.

Table 1
Cronbach Alpha Reliability Test for Individual Constructs of Variables

| Measures                              | Values Obtained |
|---------------------------------------|-----------------|
| Social Integration Scale (SIS)        | 0.97            |
| Team Leadership Scale (TLS)           | 0.97            |
| Interpersonal Facilitation Scale (IFS)| 0.95            |
| Relational Creativity Scale (RCS)     | 0.95            |
| Group Efficacy Scale (GES)            | 0.96            |
| Staff Effectiveness Scale (SES)       | 0.99            |

Confirmatory Factor Analysis for Instrument Validity
In social research, CFA has found wide application in testing consistency between construct measures and researcher’s knowledge of the nature of the construct (Joreskog, 1969; Kline, 2010; Preedy & Watson, 2009). CFA in Table 2 was designed to ensure the evenly distribution of characteristics of group dynamics and effectiveness. The baseline and factor models $X^2$ of 23727.59 and 15320.55 with corresponding $df$ of 666 and 629 at $p < 0.05$ level of significance strengthens the case that construct-validation-fit-indices satisfy the statistical significance. Further, the factor loading with the factor indicators and model symbol ($\lambda$, $\delta$, $\theta$, $\gamma$, $\beta$, $\alpha$) for all the variables used alongside their various estimated standards and error terms and z-values, at p-value (.01) <.05 level, attest to their overall statistical significance. Analysis has revealed various coefficients of constructs of group dynamics, with GE showing a high predictive impact of 66% followed by RC and SI (53% each), with the lowest being IF (37%). The overall variance was explained by the error term results, where RC values were .02 and .03, respectively. The model plot in Figure 2 above summarizes the test’s results.
### Table 2

**Model Fit**

| Model          | Χ²     | df  | p     |
|----------------|--------|-----|-------|
| Baseline model | 23727.59 | 666 | < .001 |
| Factor model   | 15320.55 | 629 | < .001 |

#### Factor loadings

| Factor | Indicator | Symbol | Estimate | Std. Error | z-value | p     | 95% Confidence Interval |
|--------|-----------|--------|----------|------------|---------|-------|------------------------|
| P      | P1        | λ11    | 0.36     | 0.02       | 16.42   | < .001 | 0.32 - 0.40            |
|       | P2        | λ12    | 0.31     | 0.02       | 19.54   | < .001 | 0.28 - 0.34            |
|       | P3        | λ13    | 0.28     | 0.03       | 8.47    | < .001 | 0.22 - 0.34            |
|       | P4        | λ14    | 0.24     | 0.01       | 16.63   | < .001 | 0.21 - 0.27            |
|       | P5        | λ15    | 0.22     | 0.03       | 7.11    | < .001 | 0.16 - 0.28            |
| A      | A2        | λ21    | 0.61     | 0.04       | 16.48   | < .001 | 0.54 - 0.68            |
|       | A3        | λ22    | 0.55     | 0.03       | 20.74   | < .001 | 0.50 - 0.60            |
|       | A4        | λ23    | 0.32     | 0.03       | 11.48   | < .001 | 0.27 - 0.38            |
|       | A5        | λ24    | 0.49     | 0.02       | 20.64   | < .001 | 0.45 - 0.54            |
| F      | F1        | λ31    | 0.41     | 0.02       | 20.23   | < .001 | 0.37 - 0.45            |
|       | F2        | λ32    | 0.24     | 0.01       | 16.93   | < .001 | 0.21 - 0.26            |
|       | F3        | λ33    | 0.62     | 0.08       | 8.19    | < .001 | 0.47 - 0.76            |
|       | F4        | λ34    | 0.26     | 0.02       | 14.62   | < .001 | 0.23 - 0.30            |
|       | F5        | λ35    | 0.25     | 0.02       | 10.74   | < .001 | 0.21 - 0.30            |

#### Residual variances

| Indicator | Estimate | Std. Error | z-value | p     | 95% Confidence Interval |
|-----------|----------|------------|---------|-------|------------------------|
| P1        | 0.05     | 0.01       | 8.76    | < .001 | 0.04 - 0.06            |
| P2        | 0.01     | 0.01       | 4.11    | < .001 | 0.01 - 0.02            |
| P3        | 0.22     | 0.02       | 10.96   | < .001 | 0.18 - 0.26            |
| P4        | 0.02     | 0.01       | 8.56    | < .001 | 0.02 - 0.03            |
| P5        | 0.20     | 0.02       | 11.06   | < .001 | 0.17 - 0.24            |
| A2        | 0.15     | 0.02       | 10.28   | < .001 | 0.13 - 0.18            |
| A3        | 0.02     | 0.01       | 4.60    | < .001 | 0.01 - 0.03            |
| A4        | 0.14     | 0.01       | 10.96   | < .001 | 0.12 - 0.17            |
| A5        | 0.02     | 0.01       | 4.90    | < .001 | 0.01 - 0.03            |
| F1        | 0.01     | 0.01       | 2.86    | < .001 | 0.01 - 0.02            |
| F2        | 0.02     | 0.01       | 8.40    | < .001 | 0.02 - 0.02            |
| F3        | 1.17     | 0.11       | 11.04   | < .001 | 0.96 - 1.38            |
| F4        | 0.04     | 0.01       | 9.98    | < .001 | 0.04 - 0.05            |
| F5        | 0.10     | 0.01       | 10.82   | < .001 | 0.08 - 0.12            |
Model Specification
Staff effectiveness = f(Staff dynamics)
Group Dynamics = (SI, TL, IF, RC, GE)

\[
SE = \alpha + SI + TL + IF + RC + GE + u \quad \text{eqn. 1}
\]

\[
SE = \delta_0 + \delta_1 SI + E_1 \quad \text{eqn. 2}
\]

\[
SE = \theta_0 + \theta_1 TL + E_2 \quad \text{eqn. 3}
\]

\[
SE = \gamma_0 + \gamma_1 IF + E_3 \quad \text{eqn. 4}
\]

\[
SE = \beta_0 + \beta_1 RC + E_4 \quad \text{eqn. 5}
\]

\[
SE = \alpha_0 + \alpha_1 GE + E_5 \quad \text{eqn. 6}
\]

Where \(\alpha, \delta_0, \theta_0, \gamma_0, \beta_0, \alpha_0\) and \(\chi_0\) are the constant terms while \(\delta_1, \theta_1, \gamma_1, \beta_1, \alpha_1\) and \(\chi_1\) are the coefficients where \(E_1 \ldots E_6\) are the error terms.

| SE | Staff Effectiveness |
|----|--------------------|
| SI | Social Integration |
| TL | Team Leadership    |
| IF | Interpersonal Facilitation |
| RC | Relational Creativity |
| GE | Group Efficacy     |

Table 3 reflects the demographic characteristics of respondents along with gender, age, marital status, educational qualification, and length of service.
Table 3

Demographic Characteristics of Respondents

| Demographic Characteristics | Frequency | Percent (%) |
|-----------------------------|-----------|-------------|
| Gender                      |           |             |
| Male                        | 181       | 71.5        |
| Female                      | 72        | 28.5        |
| Total                       | 253       | 100.0       |
| Age                         |           |             |
| 20-29                       | 45        | 17.8        |
| 30-29                       | 75        | 29.6        |
| 40-49                       | 102       | 40.3        |
| 50 years+                   | 31        | 12.3        |
| Total                       | 253       | 100.0       |
| Marital Status              |           |             |
| Single                      | 69        | 27.3        |
| Married                     | 163       | 64.4        |
| Separated                   | 21        | 8.3         |
| Total                       | 253       | 100.0       |
| Educational Qualification   |           |             |
| O’L, OND, NCE               | 127       | 50.2        |
| B.Sc./B.A                   | 94        | 37.2        |
| PGDE/M.Sc./Ph.D.            | 32        | 12.6        |
| Total                       | 253       | 100.0       |
| Years of Services           |           |             |
| 1-10 years                  | 105       | 41.5        |
| 11-20 years                 | 63        | 24.9        |
| 21-30 years                 | 63        | 24.9        |
| 31 years+                   | 22        | 8.7         |
| Total                       | 253       | 100.0       |

Table 4 shows the analysis of audience response patterns along the dimensions of group dynamics and staff effectiveness. The mean and standard deviation indicate that the responses are in agreement, except for a sub-construct of SI where the mean and standard deviation showed 1.40±0.49, quite below the threshold of 3.00. Similarly, responses to measures of effectiveness were all affirmative, thus strengthening the strong association between the GPD and SE.

Table 4

Descriptive Statistics of Response Patterns across all Constructs of Group Dynamics and Effectiveness

| Social Integration | M    | S    | Remark |
|--------------------|------|------|--------|
| SI1                | 1.40 | 0.49 | Disagree |
| SI2                | 4.68 | 0.63 | Agree |
| SI3                | 4.36 | 0.57 | Agree |
| SI4                | 4.11 | 0.82 | Agree |
| SI5                | 4.19 | 0.70 | Agree |
| SI6                | 4.30 | 0.68 | Agree |
| SI7                | 4.52 | 0.50 | Agree |
| SI8                | 4.42 | 0.59 | Agree |
| **Team Leadership**|      |      |        |
| TL1                | 4.62 | 0.49 | Agree |
| TL2                | 4.79 | 0.40 | Agree |
| TL3                | 4.75 | 0.43 | Agree |
| TL4                | 4.32 | 0.63 | Agree |
| TL5                | 4.15 | 0.73 | Agree |
| TL6                | 4.92 | 0.29 | Agree |
| TL7                | 3.66 | 1.13 | Agree |
| TL8                | 4.84 | 0.37 | Agree |
| **Interpersonal Facilitation**| | | |
| IF1                | 4.26 | 0.53 | Agree |
| IF2                | 4.64 | 0.49 | Agree |
| IF3                | 4.40 | 0.56 | Agree |
| IF4                | 4.88 | 0.33 | Agree |
| IF5                | 4.79 | 0.45 | Agree |
| IF6                | 4.86 | 0.37 | Agree |
| IF7                | 4.60 | 0.49 | Agree |
| **Relational Creativity**| | | |
| RC1                | 4.43 | 0.50 | Agree |
Correlation Analysis
As can be read from Table 5, all constructs of the independent variable assume high positive values and are perfectly correlated. However, linear regression has been designed to test the individual relationship for the statistical significance of their predictive impact on the dependent variables.

Table 5
Correlation of the Variables

| Measurement | SE | SI | TL | IF | RC | Gre |
|-------------|----|----|----|----|----|-----|
| SE          | 1.00 |    |    |    |    |     |
| SI          | 0.91 | 1.00 |    |    |    |     |
| TL          | 0.97 | 0.95 | 1.00 |    |    |     |
| IF          | 0.97 | 0.95 | 0.98 | 1.00 |    |     |
| RC          | 0.96 | 0.96 | 0.96 | 0.96 | 1.00 |     |
| GE          | 0.99 | 0.92 | 0.96 | 0.96 | 0.96 | 1.00 |

Testing of Hypotheses
H01: There is no statistically significant relationship between social integration and staff effectiveness.
In Table 6, the test regression coefficients for $SI (r_{SI} = 0.65; f_{SI} (1,251)= 1214.81$ and Adj. $R^2 = .83$ reveals a relatively high predictive value of $SI$ in relation to staff effectiveness (SE), and together with $p < .05$ level of significance, we affirm a significant statistical relationship between social integration and staff effectiveness and reject the null hypothesis that assumes no relationship.

**Table 6**

*Regression Model for Hypothesis 1 ($SE = \delta_0 + \delta_1SI + E_1$)*

| Source  | $SS$  | $df$  | $MS$  |
|---------|-------|-------|-------|
| Model   | 32.79 | 1     | 32.80 |
| Residual| 6.77  | 251   | 0.03  |
| Total   | 39.56 | 252   | 0.16  |

| $SI$     | Coef. | Std. Err. | $t$ | $p|t|$ | [95% conf Interval] |
|----------|-------|-----------|----|-------|---------------------|
| Constants| 2.09  | 0.08      | 27.79 | 0.00 | 1.94 | 2.24 |

Number of obs = 253
F(1, 251) = 1214.81
Prob > F = .00
R-squared = .83
Adj. R-squared = .82
Root MSE = .16

**Ho$_2$:** There is no significant statistical relationship between team leadership and staff effectiveness.

With the regression outcome in Table 7, it is evident that team leadership and staff effectiveness validated at $\beta = .84; F (1,251) = 3926.85$ and Adj. $R^2 = .93$ is statistically significant at $p < .05$ at a standard error of .01. We accordingly discountenance the null hypothesis in favor of the alternate hypothesis.

**Table 7**

*Summary of Regression Analysis for Hypothesis Two (regress SE and TL)*

| Source  | $SS$  | $df$  | $MS$  |
|---------|-------|-------|-------|
| Model   | 37.18 | 1     | 37.18 |
| Residual| 2.38  | 251   | 0.01  |
| Total   | 39.56 | 252   | 0.16  |

| $TL$     | Coef. | Std. Err. | $t$ | $p|t|$ | [95% conf Interval] |
|----------|-------|-----------|----|-------|---------------------|
| Cons     | 0.91  | 0.06      | 14.96 | 0.00 | 0.79 | 1.03 |

Number of obs = 253
F(1, 251) = 3926.85
Prob > F = .00
R-squared = .94
Adj. R-squared = .93
Root MSE = .09

**Ho$_3$:** There is no statistically significant relationship between interpersonal facilitation and staff effectiveness.

As shown in Table 8, there is a strong relationship between IF and SE validated at $F (1,251) = 3809.94$, and Adj. $R^2 = .93$, showing that interpersonal facilitation (IF) is a strong predictor of staff efficiency (SE). The $\beta$-value of 1.03 and $p (.00 <.05$ are significant at the standard error of .02, implying rejection of the null hypothesis strengthened by the extremely high confidence interval of 99%.
**Table 8**

*Regression Test for Relationship between Interpersonal Facilitation and Effectiveness Regress SE and IF*

| Source | SS  | df | MS  |
|--------|-----|----|-----|
| Model  | 37.12 | 1  | 37.12 |
| Residual | 2.45 | 251 | 0.01 |
| Total  | 39.56 | 251 | 0.01 |

| SE     | Coef. | Std. Err. | t   | p | [95% conf Interval] |
|--------|-------|-----------|-----|---|---------------------|
| IF     | 1.03  | 0.02      | 61.72 | 0.00 | 0.99 - 1.06 |
| _cons_ | -0.07 | 0.08      | -0.96 | 0.34 | -0.23 - 0.08 |

Number of obs = 253  
F(1, 251) = 3809.94  
Prob > F = .00  
R-squared = .94  
Adj. R-squared = .93  
Root MSE = .10

**Ho4:** There is no statistically significant relationship between relational creativity and staff effectiveness.

The result presented in Table 9, indicates that RC has high predictive value for staff effectiveness with $\beta = .71$; F-test, F $(1,251) = 3027.30$ and Adj. $R^2 = .92$ and significant at $p(.00 < .05$).

**Table 9**

*Regression Test for Relationship between Group-efficacy and Staff Effectiveness Regress SE and RC*

| Source | SS  | df | MS  |
|--------|-----|----|-----|
| Model  | 36.53 | 1  | 36.53 |
| Residual | 3.03 | 251 | 0.012 |
| Total  | 39.56 | 252 | 0.16 |

| SE     | Coef. | Std. Err. | t   | p | [95% conf Interval] |
|--------|-------|-----------|-----|---|---------------------|
| RC     | 0.71  | 0.01      | 55.02 | 0.00 | 0.68 - 0.73 |
| _cons_ | 1.56  | 0.06      | 27.20 | 0.00 | 1.45 - 1.67 |

Number of obs = 253  
F(1, 251) = 3027.30  
Prob > F = .00  
R-squared = .92  
Adj. R-squared = .92  
Root MSE = .11

**Ho5:** There is no statistically significant relationship between group efficacy and staff effectiveness.

The regression result in Table 10 where $\beta = .58$; F $(1,251) =10769.12$; Adj. $R^2 (.97)$ and $p(.00 < .05)$ reveal that GE significantly predict staff effectiveness leading to rejection of null hypothesis.

**Table 10**

*Regression Test for Relationship between Group Efficacy and Staff Effectiveness (Regress SE and GE)*

| Source | SS  | df | MS  |
|--------|-----|----|-----|
| Model  | 38.66 | 1  | 38.66 |
| Residual | 0.90 | 251 | 0.01 |
| Total  | 39.56 | 252 | 0.16 |

| SE     | Coef. | Std. Err. | t   | p | [95% conf Interval] |
|--------|-------|-----------|-----|---|---------------------|
| GE     | 0.58  | 0.01      | 103.77 | 0.00 | 0.57 - 0.60 |
| _cons_ | 2.07  | 0.03      | 81.32 | 0.00 | 2.02 - 2.12 |

Number of obs = 253  
F(1, 251) = 10769.12  
Prob > F = .00  
R-squared = .97  
Adj. R-squared = .97  
Root MSE = .06
Aggregate Regression Analysis

As presented in Table 11, the aggregate results show that all the independent variables are statistically significant at \( p(.00 < .05) \) albeit SI which produced overall weak coefficient; \( F(5, 247) = 4756.93; \) Adj R\(^2\) = (.98); SI (\( \beta = -.21; \)) TL (\( \beta = .17; \)) IF (\( \beta = 0.34; \)) RC (\( \beta = .11; \)) and GE (\( \beta = .37. \)). In their rank order, GE(.37) is ranked highest followed by Interpersonal facilitation IF (.34). TL and RC produce least aggregate overall impacts while SI is negatively skewed.

Table 11
Showing Aggregate Regression Analysis for Hypotheses 1-5 (SE = \( \chi_0+\chi_1, SI+TL+IF+RC+GE +E_0; \) regress SE SI TL IF RC GE)

| Source | SS   | df  | MS  |
|--------|------|-----|-----|
| Model  | 39.15| 5   | 7.83|
| Residual | 0.41| 247 | 0.001|
| Total  | 39.56| 252 | 0.16|

| SE   | Coef. | Std. Err. | t     | \( p|t| \) | [95% conf Interval] |
|------|-------|-----------|------|-------|-------------------|
| SI   | -0.21 | 0.02      | -11.55 | 0.00  | -0.25 to -0.18    |
| TL   | 0.17  | 0.03      | 5.76  | 0.00  | 0.11 to 0.23      |
| IF   | 0.34  | 0.04      | 9.13  | 0.00  | 0.27 to 0.41      |
| RC   | 0.11  | 0.02      | 4.55  | 0.00  | 0.06 to 0.16      |
| GE   | 0.37  | 0.02      | 21.41 | 0.00  | 0.33 to 0.40      |
| _cons | 1.05 | 0.07 | 16.00 | 0.00 | 0.92 to 1.18      |

Variance Inflation Factor (VIF)

In Table 12, the mean value of variance inflation factor (VIF) of 2.90 being below 10 indicates that the constructs are moderately correlated, thus exhibiting a low tolerance of collinearity.

Table 12
The Results of Variance Inflation Factor (VIF)

| Variable | VIF | 1/VIF |
|----------|-----|-------|
| SI       | 3.16| 0.32  |
| TL       | 1.88| 0.53  |
| IF       | 3.14| 0.32  |
| RC       | 3.02| 0.33  |
| GE       | 3.29| 0.30  |
| Mean VIF | 2.90|       |

Discussion

Model one result has shown significant statistical weak alignment between social integration and staff effectiveness. The finding partially aligns with Yozgat and Gungormez (2015), except that social integration was introduced as mediation in facilitating socialization. While Brydsten et al. (2019) may have addressed the subject of SI concerning the mental health of foreign-born and native-born in Sweden, the study appeared to be of little relevance to staff effectiveness among Nigerian university staff. The regression result of the second hypothesis has further strengthened the findings of Estivalete et al. (2016) that found team leadership correlating strongly with employees’ commitment to organizational tasks, except that the new study's preoccupation is on staff effectiveness. Gadirajurrett et al. (2018) found
transformational leadership significantly influences trust-building, inspires a shared mission, and encourages creativity among team members. The current research has also underscored the strategic role of team leadership in building trust and nurturing creativity among university staff in particular. The tally of findings underscored the strategic role of team leadership on effectiveness. Results from the third hypothesis concurred with the research evidence of Brathwaite (2019) that a positive linear relationship existed between interpersonal facilitation and staff effectiveness, though not among university staff on the cardinal issue of effectiveness. This research finding from model four aligns with Le Sante et al. (2021), which showed that staff who exhibited interpersonal facilitation are more likely to be perceived as higher and motivated and do well in task-related activities. The present study extended the thrust of the conceptual base to include effectiveness. A study by Kumar (2019), has also substantiated our assertion of a positive and significant relationship between creativity and the quality of the job done by staff. Findings from the fifth hypothesis converge with similar findings by Tasa et al. (2017) that Teamwork behavior is related to team efficacy and performance.

**Study Originality/Value**

Prior studies on group dynamics discussed the concept from a psychological and organizational behaviorist perspective essentially, not much has been done on the managerial processes to link group dynamics to organizational effectiveness. Poised to extend existing theories on group dynamics, the study is presumably the first to investigate how consolidated constructs of group dynamics can be adapted to the management of staff of Nigerian Federal Universities. Authors are the first to develop and deploy an expanded model that relates how dimensions of group dynamics (self-efficacy, relativity creativity, team leadership, social integration, and interpersonal facilitation) align with measures of staff effectiveness (flexibility, adaptability, and productivity) of the Nigerian university staff. Besides, the deployment of synthesis of analytical tools facilitates robust discussion of findings, implications, and future policy recommendations.

**Study Implications for Theory and Further Research**

The university staffs believe in social integration among them and are desirous of identifying and working with team. However, due to its weak contribution to group effectiveness, management should create a work structure that removes encumbrances to social integration. On the other hand, it is predicted that optimal results will be attained if the governance of universities deploys social integration quite independent of related constructs of GPD. Nigerian universities' management should consider the nature of group dynamics dimensions and align staff needs to improve their overall effectiveness. Consequently, strategic alignment and integration of group processes and facets with proxies of staff effectiveness will further help drive goals and innovations. In particular, interpersonal facilitation should be encouraged due to its potential impact on fostering group identity and self-motivation. Worthy of consideration are policies and practices to groom IF as a prelude to promoting teamwork and a sense of identity. Team leadership has also been found to be an effective mechanism to bolster staff effectiveness and maximize team efficacy, implicating that organizations learn to apply team leadership style in governance. The university will
accomplish much if staff with innate creative ability is given encouragement and support to unleash the best in them. Efforts should be geared towards organizing workshops, symposiums, and training on group processes and change in the university. Future research should attempt to resolve factors such as cultural background that could impede the application of group dynamics in the management of Nigerian university staff, including considering the use of mixed statistics and extending to other areas, not within the purview of this study.

Conclusion
As custodians of resources for advancing knowledge, education, and character, universities in developing countries have contributed substantially to the citizenry's intellectual and human capital development. Facts from our test of the above hypotheses have foreclosed a strong relationship between constructs of group dynamic and measures of staff effectiveness deployed in the study. It has been proven that managing group dynamics through group integration is critical to assuring staff effectiveness in the institutions of higher learning in Nigerian universities. Results have substantiated a strong correlation between team leadership and staff effectiveness due to its cohesive nature, just as interpersonal facilitation, relational creativity, and group efficacy were found to affect staff effectiveness positively.

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