

## **TEAM COHESION AND PRODUCTION OPTIMIZATION: A MODEL FOR SCHEDULED OPERATIONS IN DUFIL PRIMA NIGERIA LIMITED, RIVERS STATE**

**Opuwari, Precious U. PhD**

Email: [precious.opuwari@iaue.edu.ng](mailto:precious.opuwari@iaue.edu.ng)

Department of Management, Faculty of Management  
Sciences Ignatius Ajuru University of Education  
Rumuolumeni, Port Harcourt Rivers State, Nigeria

### **ABSTRACT**

*The study examined how team cohesion has enhanced production optimization in the manufacturing industry; hence, this study was pivotal in finding how project teams stimulate efficient work operations in Dufil Prima, at Choba Rivers State, Nigeria. The study adopted a correlation design with a structured questionnaire administered to thirty-two respondents in the firms studied with the aid of the proportional sample size determination technique. Responses from questionnaire items structured in accordance with three research questions were analyzed using the Pearson Product Moment Correlation Coefficient, and a T-test was used to determine the degree of correlation between the paired variables. Findings depicted a strong positive correlation among paired variables, both independent and dependent. Convincingly, team cohesion was found to be an out-and-out tool for actualizing operational efficiency in the studied firm. Among the recommendations proffered was that the project manager should clearly identify the skills, drive, and motivation of employees that should be enlisted in a project team.*

### **Background of the Study**

Production activities are basically the driving force for management to actualize the objectives of its stakeholders. Production activities are usually complex and require the use or application of technical skills in the operation of equipment and machines for the conversion or transformation of raw materials into finished goods or services. Hence, adequate human capital scheduling in line with interdependent skills is necessary for team cohesion in the organization. Organizations are mostly concerned with the efficient actualization of set objectives with the available resources ready for productive activity. One aspect of an organization that is solely involved is the production department. In the production department, especially in the construction sector, as in the case of this study, team development is a viable tool for actualizing organizational goals. In the construction industry, every contract gained and task assigned, whether full-time or part-time, is considered a project. In such cases, a project team directory is usually developed, which lists out all the

project team members and other stakeholders. The directory may be formal, informal, highly detailed, or broadly framed based on the objective of the task or project (Sekienie and Mabuku, 2017). Team development includes both enhancing the ability of the stakeholders to contribute as individuals and enhancing the ability of the team to function. Individual development, both managerial and technical, is the foundation necessary to develop a team, which is essential for the team's ability to meet its stated objectives.

Tihanyi (2019) asserted that team development in a project is often complicated when each team bears the responsibility to report to both a departmental manager and the project manager. In ensuring that team activities are adequately controlled, a dual reporting relationship is often an important success factor for the project and is generally the responsibility of the project manager as a necessary requirement for the project. The basic team development techniques adopted for the study are: i. team-building activities, which include management and individual actions taken specifically and primarily to improve team performance; ii. management skills, which are of particular importance to team development. It includes a broad perspective on managerial responsibility, such as financing, operational planning, work relationships, personal time management, and structure; iii. reward, which are formal management actions that promote or reinforce desired behavior (Zekumefa et al., 2019). These techniques are major drivers towards increasing efficiency, such as accuracy, speed, and quality, resulting in improved organizational performance.

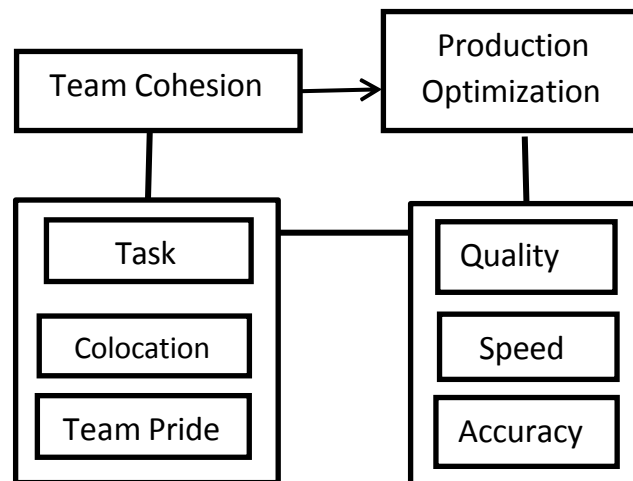
Team development can be attributed to achieving successful goals and targets in comparison with the sole efforts of any individual. Ever before the knowledge of management skills and team development would emerge, there was a group effort that we devoted to carrying out the work. The introduction of management skills has uplifted the process with innovative strategies and management tools for different team members and their roles (Stella & Onishieme, 2017). Team management is the key function of any organization. Team management plays a vital role in the improvement of productivity, accuracy, speed, and service quality in any organization. It was against this background that this study was necessitated.

### **Statement of Problems**

There is an expectation posed to the construction firm by their client in the bid to make their deliverable ready as specified. However, this is hampered as a result of management's inability to encourage and ensure accurate delivery of work without rework. It was also discovered that the colocation strategy was not inculcated, which makes team members bonding difficult to perform at the required speed. Finally, team spirit was not encouraged among members, which has given room for rework delivery in the studied firm.

## Conceptual Framework

The conceptual framework showed the variables studied as well as their dimensions. The independent variable is Team Work, while the dependent variable was Organizational Agility.



**Figure 1. Adopted Conceptual Framework**

**Source: Researcher's conceptualization in liaison with supervisor (2022).**

## Objective of the Study

The specific objectives of the study were identified as:

1. To evaluate the extent to which task relates with quality in the studied organization
2. To determine the extent to which colocation influences speed in the studied organization
3. To examine the extent to which team pride influences accuracy in the studied organization

## Research Questions

The research questions identified below were formulated to guide the researcher in carrying out the study.

1. To what extent does team task relate with quality in the studied organization?
2. How does colocation influence speed in the studied organization?
3. To what extent does team pride influence accuracy in the studied organization?

## **Research Hypotheses**

The hypotheses stated below were formulated in the null form

**H<sub>01</sub>:** There is no significant relationship between task and quality in the studied organization

**H<sub>02</sub>:** There is no significant relationship between colocation and work speed in the studied organization.

**H<sub>03</sub>:** There is no significant relationship between team pride and accuracy in the studied organization

## **Conceptual Review**

Teams are becoming a key tool for organizing work in today's corporate world for the simple fact that they contribute maximally to production efficiency and accomplish basic standards and targets in organizations. In the absence of projected production targets, milestones, and concentrated effort ensuring that materials are maximally utilized in conformance with expected output, team cohesion would not have gained the desired impetus as it does in our present day. Teams have the potential to immediately amass, organize, relocate, and disperse. But teams are an effective tool for employee motivation.

Tamara, Barutuka, et al. (2018) alluded to the fact that teams can be found everywhere in organizations with the focus and responsibility of actualizing specific or specialized tasks. The end product or outcome of every productive activity or organizational engagement is critical to stakeholders; thus, efforts are concentrated on ensuring that such a concern or objective is productively optimized. Management adopts teams or encourages the employees to form specialized work teams, task forces, committees, quality improvement teams, and safety teams (Sabukiemi & Achienize, 2019). Employees working together is nothing new. In fact, it is the very nature of organizations to put employees into groupings. However, a situation arises in most project sites where managers, consultants, and academicians make distinctions between employees organized into groups as compared with those who operate as teams. The reason is that such groups come together to form multidisciplinary teams that act as control, supervisory, or advisory units for effective implementation and accomplishment of targeted goals. Howells (2018) alluded to the fact that there are far-reaching advantages derived from such specialized or multidisciplinary teams that are targeted at production optimization. Such include increased individual performance, better quality, less absenteeism, improved employee engagement, reduced employee turnover, leaner plant structures, and substantial improvements in production cycle time (Warribaye & Keresekume, 2018). In general, teams are considered an important ingredient of organizational success in the modern economy due to the need for rapid information exchange and response to customer demands.

### **Task and Quality**

Organizations design the work environment in order to create and enable the individual to express his creative ideas towards achieving quality output in the performance of his duty. Celehaye & Triepamo (2019) posited that quality is a function of skill, work environment, organizational support, experience, and material handling or utilization. The task must be motivating to stimulate the quality that it desires.

### **Colocation and speed**

Productive activities are quite stimulating and time-consuming, most importantly in production or project execution, and this creates an opportunity for team colocation or a strategic retreat program. Zekumefa et al. (2019) asserted that the activities of a must-identified venture are multi-tasking activities that require increased communication and collaboration within and between functional disciplines. Corehem & Siye (2018) observed that, in the case of production organization, the product to be produced must meet the desired taste and satisfaction of the prospective consumer at the right place and at the right time (speed). Conversely, production phases must sync with a hybrid of information that meets the expected and actual outcomes, as contributed in the work of Tinagba and Harley (2019).

### **Team pride and quality**

Employees are often full of self-esteem in the actualization of specific or specialized tasks in an organization, which stimulates them to repeat or improve on such achievements. Chasema & Martha (2018) also contributed that the quality of a productive outcome is partly tied to the pride of the team responsible. Team pride is a force in the organization; the cohesion that any organization desires is a function of quality products as an outcome of team or group effort (Dele & Termara, 2018).

### **Empirical Review**

This aspect offered an opening for reviewing the works of other researchers on the topic that directly relate to the independent and dependent variables of the study. It brings to light a better understanding of the practicality of the use of the variables in proposing solutions to real-life situations. Darkoru & Machiefu (2017) carried out a study on the role of team development in matrix construction sites in Escravos, Delta State, Nigeria. The study was necessitated as a result of ensuring capacity optimization in relation to the delivery date. Five research questions were formulated in accordance with the variables studied. The Pearson Product Movement

Correlation Coefficient (PPMCC) and t-test were used to determine the degree of significant correlation. Again, Eshiedi (2019) conducted a study on project delivery strategy: the influence of teams in a road construction firm (JB) in Akwa Ibom State, Nigeria. PPMCC was also adopted in analyzing responses from the structured questionnaire. From both studies mentioned above, it was made clear that there was a strong positive and significant correlation between the four objectives achieved. Their degree of correlation coefficient was 0.56, 0.61, and 0.53 ( $r > 0.01$  significance value). Both collaborations were indicative of the need for team development to drive early completion times as opposed to late completion times on construction projects. Their agreement confirmed the readiness of a team to deliver deliverables according to their scheduled activity path to gain clients expectations.

### **Theoretical Framework**

Tuckman, Bruce. W. theory of team development was propounded in 1965 in Celehay & Triepamo (2019). It postulated that, as a team, group, or organization forms, it goes through certain predictable stages, progressing from a collection of individuals to a cohesive group working for a common cause. Two dimensions are present in any group and influence its development: task functions and personal relations (Vosemeg et al., 2019).

**Stage I: Forming:** i. Personal relations are characterized by dependency on the leader to provide structure. ii. Major task functions concern the orientation of group members to the work they are being asked to do. The issues have to be specified. Iii. Common behavior at this point is questioning why we are here, what we are supposed to do, how we are going to get it done, and what our goals are. Iv. During this stage, the leader should provide as much structure as possible; team building is important (Biemidede, 2017).

**Stage II: Storming** i. Personal relations are mired in conflict and confrontation among group members. Who is responsible for what? What are going to be the work rules? What are going to be the limits? What is going to be the reward system? What are the criteria? Ii. The variety of organizational concerns that emerge reflect conflict over leadership structure, power, and authority. Iii. It is important that strategies are implemented to help members move constructively from conflict toward renewed commitment to the group. If this does not happen, members may isolate themselves or even remove themselves from the group during this phase. Iv. During this stage, the leader may need to provide clarification or justification to group members; the leader may also spend time with individual members to help them clarify their feelings about group involvement (Derima & Zaki, 2018).

**Stage III: Norming:** i. Cohesion in interpersonal relationships is a defining characteristic; people start to feel a sense of group identity. Ii. They begin sharing ideas and feelings, giving feedback to each other, soliciting feedback, exploring actions related to the task, and sharing information related to the task. Iii. This becomes a period during which people feel good about

being a part of a group, and there is a brief abandonment of the task and a period of play, the enjoyment of the cohesion that is being experienced. Iv. During this stage, the leader should identify the transition and capitalize on it; members are ready to work hard, so the leader must provide opportunities for this to occur (Artiemara & Morgan, 2019).

**Stage IV: Performing:** i. Interdependence is achieved by group members; members can work autonomously, in any sub-groupings, or as a total unit. They are highly task- and people-oriented. Ii. The group's tasks are well defined; there is a high commitment to common activities and support for experimentation with solving problems. Iii. A collective, interdependent organism is the final outcome of the process of group development. Iv. During this stage, the leader can take a less active role and allow the group considerable autonomy. Members' interdependence, flexible approaches to task accomplishment, commitment to self-assessment, and appropriate adjustment or adaptation readily occur (Celehaye & Triepamo, 2019).

## Methodology

The correlation design was used for this study, with the use of a structured questionnaire as the primary source of data, administered to thirty-two (32) respondents, which was also the sample size because it was a census study. Also, the analytical technique adopted for the study was the Pearson Product Moment Correlation Coefficient with the aid of Statistical Package for Social Service (SPSS) Version 25.00.

### 1.11 Correlation Matrix on all Variables

Variables		Task	Colocation	Pride	Quality	Speed	Accuracy
Task	p-value	0.28					
	t-value	0.32					
Colocation	p-value	0.33	0.28				
	t-value	0.49	0.32				
Pride	p-value	0.38	0.46	0.35			
	t-value	0.67	0.76	0.25			
Quality	p-value	0.32	0.39	0.25	0.13		
	t-value	0.93	0.3	0.77	0.48		
Speed	p-value	0.36	0.32	0.38	0.21	0.56	
	t-value	0.37	0.27	0.66	0.96	0.1	
Accuracy	p-value	0.32	0.22	0.42	0.28	0.37	0.28
	t-value	0.53	0.23	0.9	0.68	0.69	0.31

Correlation is significant at the 0.01 level (2-tailed) of 32 responses Source: SPSS 25.00 Output, Field Survey (2023)



### **Discussion of Findings**

Findings showed that;

- i) The extent to which team task influences quality in the studied organization was sign at a moderate measure, which was in accordance with the finding derived from the test of hypothesis; that, there existed a weak positive significant correlation between team task and quality in the studied organization. This is in alignment with the work of Cotieg, et al., (2018) which states that, no level of work process can attain its completion state in project site without an effective team building activity management. Ogbeme, & Fagbona, (2019) also alluded in affirmation to the finding that, rework is more expensive for a performing organization than the process of team building and its coordinating activities for the organization.
- ii) The measure at which colocation relates with speed in the studied organization was at a moderate positive significant correlation. This was indicative to the assertion of Tamara, et al., (2018) that, bring to gather specialized skill and knowledge for a specific goal would essentially bring about accelerated space in the work at hand. This was also in margin with the assertion of Vosemeg, et al., (2019) that, work effort is maximally optimized when concerned experts are grouped and located in same related confined were stimulation actions can be adequately induced.
- iii) Hypothesis tested also affirmed that there was a weak positive significant correlation between team pride and accuracy in the studied organization. This finding was in oneness to the work of Zekumefa, et al., 2019) which clearly indicated that, team pride is a major stimulus to efficient and effective performance in team cohesion. It further opined that, team members are subject to produce and optimize productivity at a stable and accurate measure.

### **Conclusion**

The analyses and findings satisfactorily accomplished the objectives across the organizations studied. Hence, it was imperative to conclude that project team cohesion is a veritable strategy for improving and actualizing clients' satisfaction in Dufil Prima in Rivers State

### **Recommendations**

It is of immerse importance for construction firms to adopt and implement the recommendations from the findings of this study.

1. It should be required of the project manager to clearly identify the skills, drive and motivation of employees that should be enlisted into a team.
2. In developing a project team, cognizance should be given to the different specialized stages of the project, in order to ensure team strength for efficient and accurate task actualization.
3. The project team manager should collocate with his team members. It will give the opening for an excellent flow in communicating the expect task, desired technique to adopt and its early finished time (EFT).



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