

PERCEPTION SURVEY OF EMPLOYEES PARTICIPATION IN DECISION MAKING AND ORGANIZATIONAL PRODUCTIVITY IN JULIUS BERGER NIGERIA PLC BONNY ISLAND

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Authors' contribution

Authors MOA and HEO designed, carried out the research, performed the statistical analysis, wrote, read and approved the final manuscript with the assistance of SDI reviewers' and editor's guides.

ABSTRACT

The paper is a perception survey of employees' participation in decision making and organizational productivity in Julius Berger Nigeria Plc Bonny Island. It defines employees' participation in decision making as a process of sharing influence in decision making among individuals who are otherwise hierarchically unequal. It assumes that involvement of employees in decision making increases their commitment and organizational productivity. The research question addressed the extent of the relationship between employees' participation in decision making and increased employees commitment and organizational productivity in Julius Berger Nigeria Plc Bonny Island. The place of study is Julius Berger Nigeria Plc. Bonny Island while the duration of study is between May 2012 and June 2013. A descriptive research design was used in executing the study using 200 randomly selected respondents from a population of 2000 employees for questionnaire administration. The sample size of 200 was judgmentally determined from 10% of the population size. The core aspect of the study is the use of cross-sectional survey research design in generating the required primary data. Data collected were analyzed using descriptive and inferential statistics. Results from the data analysis indicated that significant relationship exists between employees' participation in decision making and increased employees commitment and organizational productivity. The research therefore concludes that significant relationship exists between employees' participation in decision making and organizational productivity in Julius Berger Nigeria Plc. Bonny Island and recommends among others: encouragement of work teams, training and re-training of employees, improvement of reward system and improvement of internal communication channels.

Keywords: employees' participation, decision making, employees' commitment, organizational productivity, Julius Berger.

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1. INTRODUCTION

Employees can affect organizational productivity positively when they are willing and committed to organizational goals. Willingness and commitment can be exhibited by employees towards their job if they are involved in decision making and participate in the affairs of the organization. Thus, for management to win the commitment of employees to get their job done properly, individual employees should not be treated in isolation, but must be involved in matters concerning them and the organization. When employees are involved in decision making, staff absenteeism is reduced, there's greater organizational commitment, improved performance, reduced turnover and greater job satisfaction [1, 2]. It is for this reason that the management of Julius Berger Bonny Island allowed employee involvement in decision making on matters that affect them to elicit their commitment to organizational goals.

Employees' participation in decision making has been widely recommended as a means of improving the quality of work life. However, when considering employees participation in decision making in the work place, one must differentiate between two levels. The first is horizontal participation- involves interaction between teams, co-workers, or peers. The second is vertical participation (direct and indirect) - involves interaction with one's superiors. Both types of participation are important components of the quality of work life. An organization which encourages both types will allow decision making at the lowest feasible hierarchical level. The implied goal is to provide an environment where an individual will have the freedom and autonomy to make choices which are related to his work environment and to improve the fit between his personality and the job demands as well as between his work and non-work domains. Participation in decision making strengthens the relationship between performance and the expectation of a satisfactory outcome through a better understanding of what the desired outcomes are and how they can be achieved as well as directs the energies of employees/work group towards the goals and objectives of the organization. Commitment to organizational goals may result from the sense of ownership or proprietary rights achieved through the participation process.

In granting employees opportunity to participate in decision making in its project execution, Julius Berger Nigeria Plc, improves the quality of work life by altering the work environment to accommodate employees' desires, as well as allowing them exercise greater control/autonomy over their work situation, thus creating opportunity for employees' self-esteem/actualization. It is against this background that it becomes pertinent to carry out employees' perception survey on the participation of employees in decision making and organizational productivity in Julius Berger Nigeria Plc Bonny Island.

1.1 Statement of the Problem

Since 1996, when Julius Berger Nigeria Plc commenced the execution of the Bonny NLNG construction project, it has recorded an average of 1 total workers strike, 2 partial workers strike, 3 near-strike cases and 5 minor workers disagreements per annum which is quite infinitesimal considering the magnitude of the workforce and the global construction industry labour disagreements statistics[3]. The occurrence of labour disagreements in

construction sites usually leads to site closure for the purposes of settlement, loss of man/machine hours, loss of output, high labour turnover due to search for better conditions of work and loss of corporate reputation. Economic development activities are usually hampered in a country with high rate of labour disagreements; since productivity/national output will be low, inflation and rate of unemployment will be high while there will be an increase in social vices. Since labour disagreements originate from the exclusion of employees in decision making in matters that affect them, such disagreements, can be prevented through the adoption of a personnel management approach (whether direct or indirect) that guarantees employees participation in decision making in matters that affect them.

1.2 Research Objectives

The objectives of the research are as follows:

1. To determine the extent of the relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc Bonny Island.
2. To determine the extent of the relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc Bonny Island.

1.3 Research Questions

The identified gap of ineffectiveness in previous decision making approaches which were mostly management driven, propelled the adoption of employees' participation in decision making in Julius Berger Nigeria Plc Bonny Island thus prompting the following research questions:

1. Does any significant relationship exist between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc Bonny Island?
2. Does any significant relationship exist between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc Bonny Island?

1.4 Research Hypotheses

In view of the above research questions, the following null hypotheses were formulated:

1H₀: There is no significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc Bonny Island.

2H₀: There is no significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc Bonny Island.

1.5 Literature Review

The concept of employees' participation in decision making has been a focus of research and practice for many years. It has taken many different forms, evolving through employee involvement and participation in decision making to the contemporary empowerment perspective. The notion of empowerment involves the workforce being provided with a greater degree of flexibility and more freedom in decision making in relation to their work. This contrasts markedly with traditional management techniques that have emphasized control, hierarchy and rigidity. Knoop [4] defines participation in decision making as sharing decision making with others to achieve organizational objectives.

Numerous organizations began espousing the benefit of employees' participation in decision making in the 1980s. However, the effect of participation on performance has become increasingly disputed in recent years. Wagner [5] argued that many participation studies have demonstrated a consistent, albeit small impact on performance. However, researchers have not established a universal positive correlation between participation and productivity [6]. The form of participation and the context in which participative techniques are employed determine the extent of any positive effect on performance [7].

Many researchers have taken a more holistic approach to studying employees' participation in decision making, arguing that participative decision making requires a certain context over and beyond a set of programs or techniques. For example, Hecksher's [8] interviews of more than 250 managers in 14 large organizations suggested that participation has accomplished little and rarely breaks down the walls of bureaucracy. He argued that, without the redesign of work, employee involvement efforts can even have a negative effect. Participative approach such as delegation gave mixed results, especially in public organizations [9]. In contrast, participative decision making that gives employees the opportunity to make substantive changes in their work is a tool for large-scale organizational change [10].

Participation can offer employees various levels of influence in the decision making process, ranging from formally established consultative committees to the development of good relations with managers or supervisors at an informal level [11]. In fact, the variation in the interpretation and implementation of employees' participation in decision making has likely contributed to different approaches to evaluating it; with subsequent mixed findings. There are many different approaches to evaluating and implementing employees' participation in decision making. Dachler and Wilpert [12] identified three dimensions: the influence of formality versus informality, directness versus indirectness and the degree of access or influence.

Locke and Schweiger [13] evaluated employees' participation in decision making in terms of level, considering either more or less participation, whereas Tjosvold [14] considered supervisory use of co-operative problem solving and integrated decision making. More recently, Black and Gregersen [15] synthesized a multi-dimensional model of employees' participation in decision making from previous research, finding support for six dimensions that include; the rationale, form, structure, decision issues, and the level and range of participation in the processes. While they called for further multi-dimensional studies to understand the role of employees'

participation in decision making, the reality is that the context largely shapes the level and range of employees' participation and this varies markedly across organizations.

Nonetheless, despite the differences, there are some common traits and theoretical concepts that are useful for analyzing participative decision making strategies and outcomes. One outcome clearly emerging from the literature is that employee satisfaction and motivation does increase with employees' participation in decision making. For example, when considering cognitive and motivational effects, Latham et al. [16] found that participation in formulating task strategies significantly affected performance effectiveness. Yammarino and Naughton [17] observed that group level participation in decision making created shared perceptions that positively influenced job satisfaction outcomes. Similarly, Pearson [18] reported that feedback as part of participatory decision making process improved productivity as well as job satisfaction.

Employee participation provides workers or their representatives with the opportunity to take part in and influence decisions that affect their working lives. It involves workers exerting a countervailing and upward pressure on management control. Butler and Glover [19] described employee participation as more fundamentally power oriented which is typically about joint decision making or co-determination. Direct participation refers to those forms of participation in which individual employees are involved in decision making processes that affect their everyday work routines while indirect participation refers to those forms of participation in which representatives of the main body of employees participate in the decision making process.

Banfield and Kay [20] identified three perspectives of employees' participation in decision making:

- Unitary perspective - subordinates do not have the right to share their views or their voices are limited and they are compelled to accept every decision from management. This is associated with the belief that those subordinates who question managers are trouble makers. Management see participation as a threat and the most appropriate way to manage conflict is the removal of individual trouble makers.
- Pluralism perspective – different groups can coexist in a state of partial and mutual interdependence. As a result of the existence of different groups and interests, conflict is welcomed as an uncontrollable consequence. Thus, conflict is not perceived as the work of outside trouble makers but it is managed and resolved through the creation of institutional mechanisms such as collective bargaining and arbitration.
- Radical or Marxist perspective – existence of organizational hierarchies based on ownership of means of production and exploitation of workers in generating wealth. Participation is an expression of the political interests of workers that attempts to improve their terms of employment.

The major obstacle to employees' participation in decision making is resistance to change by management [21]. Many managers tend to resist employees' participation in decision making because it is contrary to their habit-formed ways of thinking and behaving. In addition, failure to respond to employee recommendations is an example that reduces employees' involvement in decision making. If management does not acknowledge employees' recommendations, employees rapidly conclude that management has no interest in their ideas. Fear

is another obstacle to employees' involvement in decision making. At times, employees fear that they might lose their jobs if they voice out their views.

1.6 Conceptual Framework

Employees' participation in decision making when discussed as a means of improving organizational performance and individual workplace conditions, assumes the individual worker's direct participation in some form of decision-making within the company [22]. According to Fernie and Metcalf [23], some common assumptions associated with organizational performance and direct participation are as shown in figure 1 below:

- Employees generally have more knowledge and information about their work processes than their managers do and are better placed to achieve improved performance.
- Employees involvement provides them with greater intrinsic rewards from work than do traditional forms of governance. These rewards will increase job satisfaction and motivate them to achieve new goals.
- By giving workers greater access to management information, mutual trust and commitment will be increased.

It is also important to note that improved organizational performance can be measured against such benchmarks as: increased productivity/output, increased efficiency, increased profitability, increased employees commitment, increased operational flexibility, increased product quality and achievement of production target.

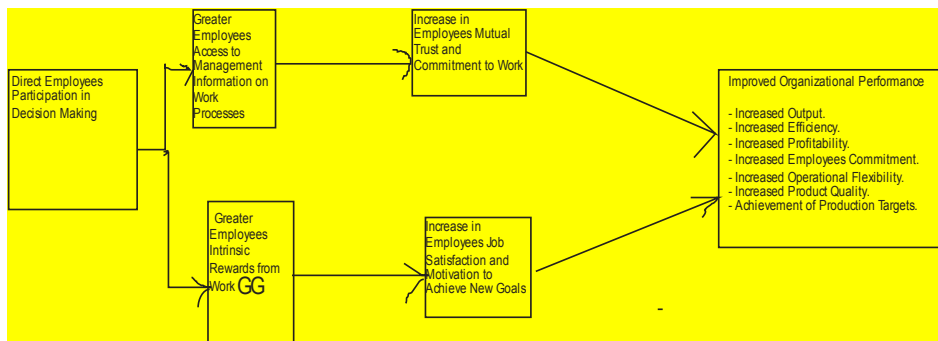


Figure 1: Benefits of Direct Employees Participation in Decision Making

Source: Fernie S. & Metcalf D. "Participation, contingent pay, representation and workplace performance: Evidence from Great Britain". British Journal of industrial Relations. September, 1995; 33 (3): 56-71.

Some of the major forms of direct and indirect employees' participation in decision making include: teamwork, financial participation, Quality Circles (QCs) and Joint Consultative Committees (JCCs).

•**Teamwork:** Team-building is essential in a modern society with its competitive environment that favours higher quality, innovativeness, rapid response to market shifts and intelligent production. Mathews[24] sees teamwork as the 'heart' of the new workplace culture and fundamentally involves a process of 're-engineering' work flows, so that groups of operators can take control of a series of tasks that produce a defined product or service. There

are many theories on what constitutes effective team-building, but the general notion is that if it is done correctly, it will be highly beneficial to organizational performance and productivity.

•**Financial participation:**Employees financial participation is seen as a means of promoting employee loyalty and commitment to the organization.As with teambuilding, employee financial participation can take many forms, and its success depends upon how well it is integrated and carried out. One way of employee financial participation is to offer employees’ shares as part of or bonuses on their salaries - referred to as ‘employee ownership’.For employee ownership to have any impact on productivity and performance, it has to be combined with other human resource policies such as improved communication, consultation and security [25].

•**Quality Circles (QCs):**Forming Quality Circles (QCs) is part of a Total Quality Control (TQC) technique to ensure that the organization meets the increasing demand in modern societies for high-quality products. Responsibility for quality control is given to shop floor employees and QCs include groups of workers that meet in regular forums to analyze and suggest improvements to their work process [26].However,the cost of implementing QCs programs, the formality of the procedure and the slowness in developingand implementing quality improvementsuggestions may be a reason for waning employers interest in QCs.

•**Joint Consultative Committees (JCCs):** This isan indirect form of participation that is used as a mechanism for collective representation of employees in the workplace. The consultation process implied by the existence of JCCs makes it easier to change working practices or introducing new technology leading to faster productivity growth.The increase in the stock of ideas available to decision-makers underJCCs may increaserefficiency, productivity and quality [27].

Apart from being aware of the different forms of employees’ participation in decision making, it isalso necessary to look at the different levels/degree of employees’ participation. Teicher [28], in his model shown in **figure 2** demonstrates the complexity ofemployees’ participation in the workplace.

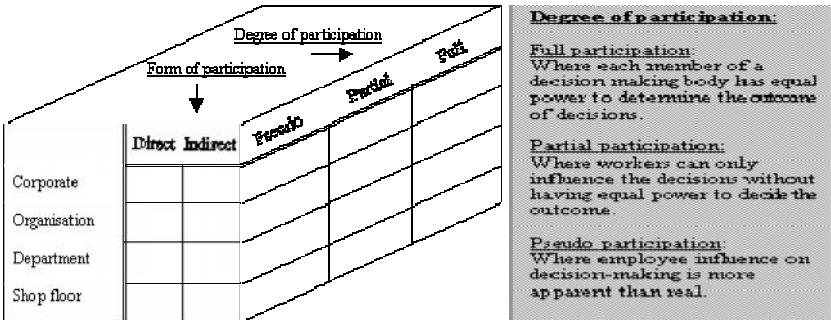


Figure2: Teicher Model of Different Forms/Degree of Employees’ Participation in Decision Making

Teicher J. “Theories of employee participation and industrial democracy: Towards an analytical framework”, in Dabscheck B., Griffin G. & Teicher J. (Eds.). Contemporary Australian Industrial Relations. Melbourne: Longman Cheshire, 1992.

The model shows that an organization can adopt different strategies in terms of employee participation where the ideal form is both indirect and direct full participation at all levels in the workplace. Though, he admits, that few organizations are likely to achieve this it provides a standard in assessing employees participation initiatives and ultimately the most efficient for the organization. However, it may be argued that setting such a high standard might enforce negative aspects of employee participation into organizational efficiency, hence affecting productivity. Also, too much participation could lead to the development of a 'manager organization' where employees demand more and more autonomy in decision-making processes that they threaten the role of middle managers [29]. In contrast, Harley [30] believes that empowerment in modern organizations is a 'pervasive myth', and that employees really have not gained much control in decision-making processes.

1.7 Theoretical Framework

This research is based on Herzberg's Two Factor Theory of motivation [31] shown in figure 3 which states that the presence of intrinsic/motivation factors: recognition (employees' participation in decision making), responsibility, advancement, achievement and the nature of the work itself will lead to job satisfaction which in turn will increase employees commitment and organizational productivity because of employees innate need for growth and self-actualization. While the presence of extrinsic/hygiene factors: company policies, quality of supervision, relations with others, rate of pay, job security etc. will lead to less job dissatisfaction because of employees need to avoid unpleasantness. This theory suggests that to improve job attitudes and productivity, administrators must recognize and attend to both sets of factors and not assume that an increase in satisfaction leads to decrease in unpleasurable dissatisfaction. It assumes that employees' motivation is important to both the organization and individual employees because it affects productivity. By providing motivators and removing hygienes through employees' participation in decision making, management can facilitate the growth of employees and the organization. Growth makes the employee more valuable to the organization because of his/her ability to perform higher order duties. A desire to fulfill our potential drives us to seek growth and provides the incentive to achieve. According to Herzberg, the idea that the work one does is significant leads, ultimately, to satisfaction with the work itself. Employees will be motivated to do work that they perceive to be significant.

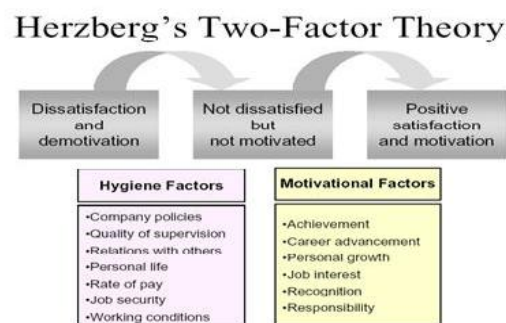


Figure 3: Herzberg's Two Factor Theory of motivation

From figure 3, five factors stood out as strong determiners of job satisfaction: achievement, recognition, work itself responsibility and advancement. The last three factors were found to be most important for bringing about lasting changes of attitude. It should be noted, that recognition refers to recognition for achievement as in coming up with new ideas in participative decision making as opposed to recognition in human relations sense. The theory concludes that: •Management cannot really motivate employees; it can only create the environment in which the employees motivate themselves. •Motivators are the key to satisfaction. •Effective motivation results from the determination and satisfaction of employees motivational needs. •Employees' participation in decision making increases employees' motivation, job satisfaction and organizational commitment. •Management should focus on rearranging work so that motivator factors can take effect. This can be done through job rotation, job enlargement and job enrichment.

2. MATERIALS AND METHODS

The scope of this research is limited to the employees of Julius Berger Nigeria Plc. Bonny Island. It is assumed that responses obtained from the sample respondents would be representative of the opinions of all employees of the company on their perception of employees' participation in decision making and organizational productivity in their company. The duration of study is between May 2012 and June 2013. The core aspect of the study is the use of cross-sectional survey research design in generating the required primary data. A sample of 200 randomly selected respondents from a population of 2000 Julius Berger employees in Bonny Island were used for questionnaire administration. The sample size of 200 was judgmentally determined from 10% of the population size. For the purposes of questionnaire administration, the sample respondents of 200 were selected from a population of 2000 Julius Berger employees in Bonny Island, by random shuffling of cards method. Each employee's name was written on a small card and the name on the topmost card was selected each time, the cards were shuffled. This was done continuously until all the sample respondents were selected. To avoid one name being selected twice or more, the selection of the topmost card was done without replacement. Data collected were analyzed using descriptive and inferential statistics. The questionnaire was designed to obtain a fair representation of the opinions of the 200 sample respondents using a four-point Likert type scale. The questionnaire responses of the sample respondents were presented using tables while formulated hypotheses were tested using analysis of variance (ANOVA). A total of 200 copies of the questionnaire were administered, collected and used for the analysis.

3. RESULTS AND DISCUSSIONS

3.1 Distribution of Responses on Research Questions

3.1.1 Question number 1

Does any significant relationship exist between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island? Table 1 shows that questions: 1, 2, 3, 4, and 5 with varying mean scores of 3.40, 3.10, 2.70, 2.90 and 2.85 were above the weighted average of 2.5. The table further revealed a grand mean score of 2.99 indicating a strong evidence of the existence of a significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island. This conclusion is buttressed by Pearson and Duffy [32] perception that employees' participation in decision making increased employees' motivation, job satisfaction and organizational commitment. Also Cotton [33] associated employees' participation with higher motivation and performance, fewer intentions to quit and lower turnover. On the contrary, Miller and Monge [34] in their meta-analysis of 88 research studies observed an average correlation of 0.34 between employees' participation in decision making and job satisfaction/organizational commitment while an average correlation of 0.15 was observed between employees' participation in decision making and productivity.

Table 1. Mean responses on the relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island (n=200)

S/No.	Research Questions	SA (4)	A (3)	D (2)	SD (1)	Total Responses	Mean Score
1	Does employees' participation in decision making motivate employees in Julius Berger Nigeria Plc. Bonny Island?	120 480	50 150	20 40	10 10	680	3.40
2	Does employees' participation in decision making enhance job satisfaction of employees in Julius Berger Nigeria Plc. Bonny Island?	100 400	40 120	40 80	20 20	620	3.10
3	Does employees' participation in decision making create a positive job attitude in employees of Julius Berger Nigeria Plc. Bonny Island?	60 240	60 180	40 80	40 40	540	2.70
4	Does employees' participation in decision making in Julius Berger Nigeria Plc. Bonny Island provides them with greater intrinsic rewards than other traditional means of governance?	75 300	60 180	35 70	30 30	580	2.90
5	Does employees' participation in decision making create a sense	70	60	40	30		

of ownership in policy execution
in employees of Julius Berger
Nigeria Plc. Bonny Island?

280 180 80 30 570 2.85

Grand Mean 2.99

Source: Field Survey, 2013.

3.1.2 Question number 2

Does any significant relationship exist between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island? Table 2 shows that questions: 6, 7, 8, 9, and 10 with mean scores of 3.05, 2.90, 3.10, 2.95 and 2.98 were above the weighted average of 2.5. The grand mean of 3.00 shows that there is a strong evidence of a significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island. This conclusion is buttressed by the study of Black and Lynch [35], which observed a positive correlation between employees' participation in decision making and increased organizational productivity. They also observed that co-operative workplaces with high level of union involvement, recorded higher productivity than non-union co-operative workplaces. On the contrary, Hecksher [8] in his interview of more than 250 managers in 14 large organizations observed that employees' participation in decision making accomplished little and rarely breaks down the walls of bureaucracy. He further reported that, without work redesign, employees' involvement efforts can even have a negative effect. Wagner [5] observed that many employees' participation in decision making studies have demonstrated a consistent small impact on performance.

Table 2. Mean responses on the relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island (n=200)

S/No.	Research Questions	SA (4)	A (3)	D (2)	SD (1)	Total Responses	Mean Score
6.	Does employees' participation in decision making direct the energies of employees/work group towards organizational goals in Julius Berger Nigeria Plc. Bonny Island?	80	70	30	20		
		320	210	60	20	610	3.05
7.	Does employees' participation in decision making bring about improved organizational performance in Julius Berger Nigeria Plc. Bonny Island?	70	60	50	20		
		280	180	100	20	580	2.90

8.	Does employees' participation in decision making bring about greater flexibility and increased workflow in Julius Berger Nigeria Plc. Bonny Island?	100	40	40	20		
		400	120	80	20	620	3.10
9	Does employees' participation in decision making bring about production efficiency and cost effectiveness in Julius Berger Nigeria Plc. Bonny Island?	80	60	30	30		
		320	180	60	30	590	2.95
10	Does employees' participation in decision making motivate them to increase their individual productivity?	85	50	40	25		
		340	150	80	25	595	2.98
Grand Mean							3.00

Source: Field Survey, 2013.

3.2 Test of the First Hypothesis

H₀: There is no significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria plc. Bonny Island.

H₁: There is a significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria plc. Bonny Island.

Table 3. Computation of Statistical Variables on the First Hypothesis from table 1.

S/No.	Strongly Agree		Agree		Disagree		Strongly Disagree	
	X	X ²	X	X ²	X	X ²	X	X ²
1	120	14400	50	2500	20	400	10	100
2	100	10000	40	1600	40	1600	20	400
3	60	3600	60	3600	40	1600	40	1600
4	75	5625	60	3600	35	1225	30	900
5	70	4900	60	3600	40	1600	30	900
Totals	425	38525	270	14900	175	6425	130	3900

Source: Survey Data, 2013.

Calculation of total sum of squares (SS_T)

$$SS_T = \sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X}_i)^2$$

$$\sum \bar{X}_i^2 = 38525 + 14900 + 6425 + 3900 = 63750$$

$$(\sum \bar{X})^2 = (425 + 270 + 175 + 130)^2 = 2500$$

$$N \quad 20$$

$$SS_T = 63750 - 2500 = 61250$$

$$SS_T = 61250$$

Calculation of between group sum of squares (SS_B)

$$SS_B = \sum_{i=1}^C n_i (\bar{X}_i - \bar{X})^2$$

$$(\sum \bar{X})^2 = (425)^2 + (270)^2 + (175)^2 + (130)^2$$

$$n \quad 5 \quad 5 \quad 5 \quad 5$$

$$= 36125 + 14580 + 6125 + 3380 = 60210$$

$$(\sum \bar{X})^2 = (425 + 270 + 175 + 130)^2 = (1000)^2 = 2500$$

$$N \quad 20 \quad 20$$

$$SS_B = 60210 - 2500 = 57710$$

$$SS_B = 57710$$

Calculation of within group sum of squares (SS_w)

$$SS_w = \sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X})^2 \text{ or } SS_w = SS_T - SS_B$$

$$SS_T - SS_B = 61250 - 57710 = 3540$$

$$SS_w = 3540$$

Calculation degrees of freedom

$$SS_T \text{ df} = N - 1 = 20 - 1 = 19$$

$$SS_B \text{ df} = n - 1 = 4 - 1 = 3$$

$$SS_w \text{ df} = n - 1 + n - 1 + n - 1 + n - 1 = 4n - 4 = 4(5) - 4 = 20 - 4 = 16$$

Calculation of Variances

Between group variance (S_B^2) = Between group sum of squares (SS_B)

Between group degree of freedom

$$S_B^2 = \frac{\sum_{i=1}^C n_i (\bar{X}_i - \bar{X})^2}{C-1}$$

$$S_B^2 = 57710 = 19236.67$$

3

Within group variance (S_W^2) = Within group sum of squares (SS_W)

Within group degree of freedom

$$S_W^2 = \frac{\sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X}_i)^2}{n-C}$$

$$S_W^2 = 3540 = 221.25$$

16

$$F\text{-value} = F_{df_1, df_2} = \frac{S_B^2}{S_W^2} = \frac{\text{Between group variance}}{\text{Within group variance}} = \frac{19236.67}{221.25} = 86.95$$

Within group variance 221.25

Table 4 shows that calculated F-Value of **86.95** resulted from the relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island. This calculated F-Value is significant since it is greater than the critical F-Value of 5.29 given 3/16 degree of freedom at 0.01 level of significance. Hence, the null hypothesis is rejected while the alternative is accepted. This shows that there is a significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island.

Table 4. Computation of Analysis of Variance on the relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island.

Source of variance	Sum of squares	Degree of freedom	Mean sum of squares	Calculated F-value	Table critical F-value	Decision
Between groups	57710	3	19236.67	86.95	5.29	H₀: Rejected
Within group	3540	16	221.25			
Total	61250	19				

Source: Statistical Computation and Table 3.

3.3 Test of the Second Hypothesis

H₀: There is no significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria plc. Bonny Island.

H₁: There is a significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria plc. Bonny Island.

Table 5. Computation of Statistical Variables on the second Hypothesis from table 2.

S/No.	Strongly Agree		Agree		Disagree		Strongly Disagree	
	X	X ²	X	X ²	X	X ²	X	X ²
6	80	6400	70	4900	30	900	20	400
7	70	4900	60	3600	50	2500	20	400
8	100	10000	40	1600	40	1600	20	400
9	80	6400	60	3600	30	900	30	900
10	85	7225	50	2500	40	1600	25	625
Totals	415	34925	280	16200	190	7500	115	2725

Source: Survey Data, 2013.

Calculation of total sum of squares (SS_T)

$$SS_T = \sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X}_i)^2$$

$$\sum X^2 = 34925 + 16200 + 7500 + 2725 = 61350$$

$$\sum (X)^2 = (415 + 280 + 190 + 115)^2 = (1000)^2 = 2500$$

$$N \quad 20 \quad 20$$

$$SS_T = 61350 - 2500 = 58850$$

$$SS_T = 58850$$

Calculation of between group sum of squares (SS_B)

$$SS_B = \sum_{i=1}^C n_i (\bar{X} - \bar{\bar{X}})^2$$

$$\sum (\bar{X}_i)^2 = (415)^2 + (280)^2 + (190)^2 + (115)^2$$

$$n \quad 5 \quad 5 \quad 5 \quad 5$$

$$= 34445 + 15680 + 7220 + 2645 = 59990$$

$$(\bar{X})^2 = (415 + 280 + 190 + 115)^2 = 2500$$

$$N \quad 20$$

$$SS_B = 59990 - 2500 = 57490$$

$$SS_B = 57490$$

Calculation of within group sum of squares (SS_w)

$$SS_w = \sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X})^2 \text{ or } SS_w = SS_T - SS_B$$

$$SS_w = SS_T - SS_B = 58850 - 57490 = 1360$$

$$SS_w = 1360$$

Calculation of Degrees of Freedom

$$SS_T \text{ df} = N - 1 = 20 - 1 = 19$$

$$SS_B \text{ df} = n - 1 = 4 - 1 = 3$$

$$SS_w \text{ df} = n - 1 + n - 1 + n - 1 + n - 1 = 4n - 4 = 4(5) - 4 = 20 - 4 = 16$$

Calculation of Variances

Between group variance (S_B^2) = Between group sum of squares (SS_B)

Between group degree of freedom

$$S_B^2 = \frac{\sum_{i=1}^C n_i (\bar{X}_i - \bar{X})^2}{C - 1}$$

$$S_B^2 = 57490 = 19163.33$$

$$3$$

Within group variance (S_w^2) = Within group sum of squares (SS_w)

Within group degree of freedom

$$S_w^2 = \frac{\sum_{i=1}^C \sum_{j=1}^{n_i} (X_{ij} - \bar{X})^2}{n - C}$$

$$S_w^2 = 1360 = 85$$

16

$$F\text{-value} = F_{df_1, df_2} = \frac{S_B^2}{S_W^2} = \frac{\text{Between group variance}}{85} = \frac{19163.33}{85} = 225.45$$

Within group variance 85

Table 6 shows that calculated F-Value of **225.45** resulted from the relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island. This calculated F-Value is significant since it is greater than the critical F-Value of 5.29 given 3/16 degree of freedom at 0.01 level of significance. Hence, the null hypothesis is rejected while the alternative is accepted. This shows that there is a significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island.

Table 6. Computation of Analysis of Variance on the relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island.

Source of variance	sum of square	Degree of freedom	Mean sum of square	Calculate F-value	Table critical F-value	Decision
Between group	57490	3	19163.33	225.45	5.29	H₀: Rejected
Within group	1360	16	85			
Total	58850	19				

Source: Statistical Computation and Table 5

4. CONCLUSION AND RECOMMENDATIONS

The paper discussed employees' participation in decision making and organizational productivity in Julius Berger Nigeria Plc. Bonny Island. It assumes that involvement of employees in decision making increases their commitment and organizational productivity. Employees expect to participate in decision making processes that affect their everyday work routines. The three major findings of the research are as follows:

- ❖ Employees' participation in decision making in Julius Berger Nigeria Plc. Bonny Island provides them with greater intrinsic rewards than other traditional means of governance.
- ❖ There is a significant relationship between employees' participation in decision making and increased employees' commitment in Julius Berger Nigeria Plc. Bonny Island.
- ❖ There is a significant relationship between employees' participation in decision making and increased organizational productivity in Julius Berger Nigeria Plc. Bonny Island.

Arising from the findings of this paper, it is suggested that Julius Berger Nigeria Plc. Bonny Island should take the following measures to improve employees' participation in decision making:

1. Unionization of the workforce: Management should encourage the establishment of unions within the work environment as a mechanism for representativeness inclusion.

2. Establishment of open and broad-based decision making system: If not in all issues, management should establish an open and broad-based decision making system that is more favourable to employee participation.

3. Establishment of work teams: Management should reorganize the workforce into work teams to encourage participative decision making at lower hierarchical levels.

4. Training and re-training of employees: Management should train and re-train employees to enable them acquire decision making skills that are relevant to their daily routines.

5. Redesigning of employees jobs: Management should redesign and enrich employees' jobs to be more challenging and motivating by creating room for autonomy and flexibility in decision making.

6. Improvement of reward system: Management should improve the current reward system to include more intrinsic factors like gain sharing/profit-sharing to ensure a sense of ownership in employees decision making.

7. Improvement of internal communication channels: Management should establish additional channels of internal communication to ensure the free flow of information especially those that lubricates participative decision making.

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COMPETING INTERESTS

The authors have declared that no competing interests exist.

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