

THE ROLE OF EMPLOYEE SCHEDULING PRACTICES ON WELL-BEING AND MOTIVATION IN NIGERIA: (A STUDY OF WORKERS IN OMOTOSHO POWER PLANT, ONDO STATE, NIGERIA)

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Abstract

Some manufacturing activities require that employees are scheduled to work shifts to meet up with demand. However, assigning employees to work shift has physical and psychological implications. In this study, appropriate scheduling practices have been seen an essential resource or inputs to reduce the implication of job demands. Thus, three (3) scheduling practices considered were work-rest scheduling, job rotation scheduling, and personnel scheduling. The unit of analyses were plant engineers and operators of Omotosho Power Plant who operates on four (4) shifts. The study selected forty (40) respondents for the use of closed-ended questionnaires. The data were analyzed with linear regression and Pearson correlation test. Findings showed that well-being was predicted by the employee scheduling practices ($R\text{ Square} = 0.031$). The regression coefficients also show that personnel scheduling contributed mostly and positively to the prediction of employee well-being ($\beta = 0.079$), followed by work-rest scheduling ($\beta = 0.015$). However, only job rotation scheduling practice appears to have contributed at least, negatively (-0.0339) to the model prediction. It was also noticed that positive relationship exist between employee well-being and their motivation towards work ($r = 0.439 < 1.00$) of which result was reliable at ($p = 0.005 > \alpha = 0.05$) statistical significance. Based on the findings, the study concludes that the design of appropriate scheduling practices is resources that reduces the exigencies or costs of job demands. Therefore, the need to control disorders associated with work shift through employee scheduling practices becomes imperative to organizations and should attract research attention. Some of the recommendations were design of scheduling models directed at minimizing physical and psychological disruptions associated with work shifts by interested managers and researchers.

Keywords: Employee Scheduling, Work-Rest Scheduling, Personnel Scheduling, Employee Well-Being, Employee Motivation

1.0. Introduction

How to design and organize a place of work that maximizes employee well-being to achieve productivity are issues discussed in human resources management, industrial engineering and management, operations and production management and research. These disciplines consider the human elements of an organization in such a manner that overall productivity goals and other performance measures are achieved.

Employee scheduling is a process that involves the assignment of employees and jobs performed to various work schedules (Lodree & Norman, 2006). Compendium of empirical literature have shown that employee scheduling practices consider issues such as scheduling times used for task performance (Clark, 1942; McKay & Wiers, 2003; McKay & Wiers, 2003), materials used (Banjoko, 2009) and nature or types of job performed (Hagberg, Siversterin, Wells, Smith, Hendrick, Carayon & P'erusse, 1995; Tayyari & Smith, 1997; Kuijer, Visser & Kemper, 1999; Handerson, 1992; Catnahan, 2000). It also considers scheduling of tools used by employees to production events (Clark, 1942, Banjoko, 2009), scheduling of personnel or staff (Ernst, Jiang, Krishnamoorthy & Sier, 2004) and their relaxation time (Chengular, Rodgers & Bernard, 2004; Van Dieen & Vrieling, 1996; Konz, 1998). It specifies the orders

and operational sequences that employees must follow to a complete the task assigned in an organized manner and at the required time (Herrmann, 2006).

Employee motivation and well-being are states of employee behavior useful for the achievement of operational, strategic goals. Employee well-being, on the one hand, describes the state of employee physical and mental conditions at work (Ryff, 1989; Lee & Taguchi, 2013; Wright & Cropanzano, 2000). On the other hand, employee motivation describes the state of readiness of employee towards the achievement of a goal as influenced by external and internal forces (Taghippur & Dejban, 2013; Deevadass, 2011). How to achieve these states and much more through the implementation of various organizational practices has been focus of a compendium of academic literature.

This study diagnoses the possibility of links between the above-described states of motivation and employee well-being, scheduling of work rest, job rotation, and personnel. This study is imperative in today's contemporary work structure in Nigeria where economic situation and the need for satisfaction of needs propel employees to take up job responsibilities, sometimes beyond their capacities. To ensure that tasks are carried out appropriately, managers have the responsibility to organize work systems and structure with the requisite managerial philosophies. This study is an avenue to create awareness from the organizational perspectives of scheduling.

1.1. Statement of Problem

Extended personnel work shifts in manufacturing organizations lead to some problems that are ergonomic, mental and sociological. One of this is circadian disruption which is a shift or fluctuation of physical and mental conditions that are governed by the earth's day to night cycles (Wickens, Lee, Liu & Gordon-Becker, 2004). The implication of this according to Kostreva, Mcnelis & Clemens (2002) is that it leads to gastrointestinal disorders, cardiovascular disorders, and fatigue. Some researcher exclaimed that unplanned work shifts schedules lead to reduced individual and organizational productivity, heart diseases, depression and deprivation (Chengular et al., 2004). Extant literature indicates that personnel scheduling considers the organization of start and end times of work, patterns of morning shift and night shift, direction and duration of work shift (Smith, 1998; Knauth, 1993, Monk, 2000).

An imbalance between work and rest cycle times in organizations affect the physical and mental well-being of employees as it causes fatigue, stress, and motivational problems (Lodree & Norman, 2006). The time employees have to spend on work and rest for work recovery has not been studied (Konz, 1998). More so, empirical literature has shown that work-rest cycles of employees differ as activities differ (Van Dieen & Vrielink, 1996; Kontz, 1998). No study in Nigeria has been conducted to determine the appropriate work-rest schedules of employees in manufacturing plants.

Manufacturing plants operate on flow shop or job shop pattern of production (Bankoko, 2009; Stevenson, 2013). For the flow shop manufacturing, patterns required for task performance are often repetitive. Due to lack of job rotation scheduling practices, employees are exposed to a risk of their well-being problems such as occupational illness, injury and cumulative trauma disorders when performing repetitive tasks for every hour work day (Haberg et al., 1995). A study showed that a source of back injury in a manufacturing organization is caused by the manual process of continuous material handling which also leads to motivational problems such refusal to work, making organizations to face the cost of lost days at the workplace (Lilies and Deivananyagam, 1984). Some manufacturing activities also require continuous movements and lifting of pounds and tons of materials in minutes and in some cases such as sawmills, workers are affected by noise (Lodree & Norman, 2006). It is argued that job rotation scheduling reduces the monotonous tendencies of a continuous or repetitive task, as workers perform different tasks every day (Lodree & Norman, 2006). It also leads to learning and motivation as new related ideas and techniques for manufacturing are acquired over time by employees. Job rotation practice is not common in Nigerian manufacturing plants, thus, employee well-being and motivational issues.

1.2. Research Objectives and Questions

The objective of this study is to examine the nexus between employee scheduling design, employee well-being and motivation. Specifically, it attempts to shed light on whether scheduling of work-rest and job rotation are predictors of employee well-being and motivation.

2.0. Conceptual Framework

This section discusses the concept of employee scheduling, well-being and motivation. The conceptual model was used to establish links between the variables of the study.

Employee Scheduling

Organizations control various type resources which appears in form of human, material and financial resources. Organization of these resources to structures and functions is done through effective allocation or apportioning processes or procedures. Assigning resources to function in an orderly manner within a specified time is scheduling. Appropriate scheduling approach deals with the time with which an activity starts, and the time it ends (Cox, Blackstone & Spencer, 1992; Herrmann, 2006).

Manufacturing organizations or manufacturers see scheduling as a tool most especially when scheduling decisions contributes to productivity. Scheduling practices relate with organizational performance indicators such as the ability of the organization to meet customer order timely, reduced lag in time and reduced waste and production lead time, which is the time between which an order is placed and received (Vollman, Berry, Whyback, 1998; Wiers, 1997). Employee scheduling involves the assignment of employees to the starting and completion of various tasks optimally. It specifies the orders and operational sequences that employees must follow to complete tasks assigned in an organized manner and at the required time (Herrmann, 2006). Perspectives on employee scheduling considered in this research are the scheduling of work-rest, job and individual employees.

Employee work rest scheduling

Employee work-rest defines their time off work or simply, their break time. Rest is inevitable at work in order to prevent fatigue on employees on their job (Vollman, Berry, Whyback, 1998; Wiers, 1997). However, planning for the timing of work rest has a lot role to play in determining employee efficiency and motivation towards work. Work rest scheduling considers the appropriate time needed for employees to recover the strength for the completion of the remaining task within work schedule. Literature has shown that work rest scheduling varies as the type of job or task performed varies at work shift.

Employee Job Rotation

There are some tasks that are multiple in nature which requires that employee perform them. Some of these tasks may require the use of various set of skills and as well comes with different risks. The job is organized in such a manner that a task performed can be according to the skill requirement as employees are assigned to perform various tasks needed for the completion of the same job. Through job rotation, labour is divided and different employees would perform an independent but related task. An advantage of job rotation is that it reduces job monotony and ensures that labour is divided amongst employees and their job risks are shared (Cox, Blackstone & Spencer, 1992; Herrmann, 2006).

Personnel Scheduling

Ernst et al., (2004) notes that personnel scheduling deals with the assignment of labour to routines, pointing out that it is a veritable tool to avoid overstaffing and understaffing. Personnel scheduling therefore deals with the assignment of employees to work shifts such that minimum staff level requirements are satisfied, cost of labour is minimized and work stipulated agreements are achieved.

Employee Scheduling Practices

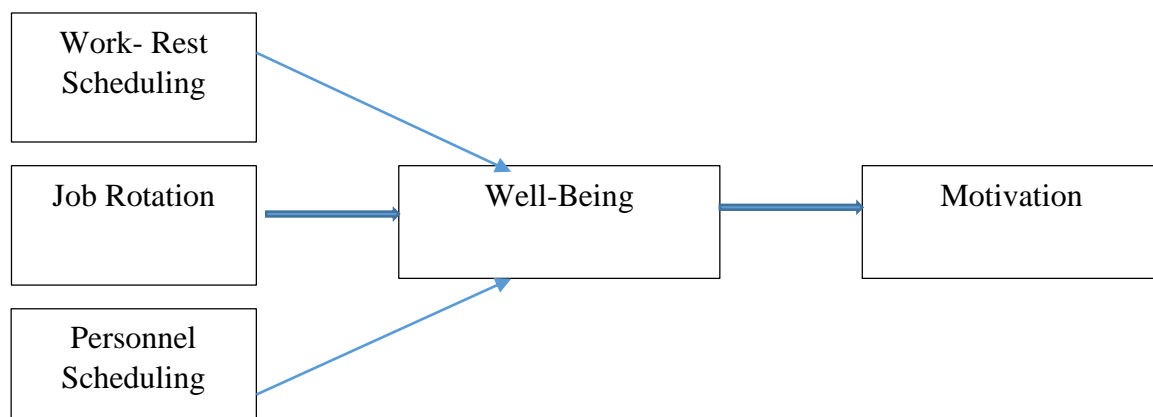


Figure 1: Conceptual Model on Employee Scheduling, Well-Being and Motivation. Source: Researcher

Employee well-being

It has been argued that one of the most persistent topics of human debate is what constitutes human interest, happiness or well-being (Wright & Cropanzano, 2000). The idea of well-being of employee is traced to academic disciplines such as organizational behaviour, industrial and organizational psychology and other behavioural sciences area of specialization.

Well-being explains an employees' physical state of wellness, happiness, sense or a state of conditions at work or any personal engagement. Employee well-being can also be psychological. This is seen from the perspective of the general individual mental functioning (Wright & Cropanzano, 2000).

The study of psychological well-being came after two diverse views of which the first address issues associated with positive disposition or happiness and the other, deals with the actualization of human potential eudaimonic well-being (Lee & Taguchi, 2013). Psychological well-being (PWB) reflects the eudaimonic perspective of well-being. Specifically, the construct of PWB denotes toward observed self-achievement and functioning (Ryff, 1989; Lee & Taguchi, 2013).

Employee motivation

Motivation is a term subjected to multidimensional definitions. Motivation is a phenomenon that describes the force, course, and persistency of an individual towards the achievement of a goal (Syafii, Thoyib & Djumahir, 2015). Motivation as stated by Taghipour & Dejban (2013) "is an inner drive or an external inducement to behave in some particular way, typically a way that will lead to rewards". Managers employ motivational strategies to ensure that employee performance in the organization increases. From the perspectives of a driving force within a person, Devadass (2011) sees work motivation those intrinsic and extrinsic factors influencing work-related behavior, adding that motivation addresses peculiar issues within a work environment. Similarly, Seniwoliba & Nchorbono (2013) point out that motivation forms the force that drives an individual towards achieving set organizational goals. This implies that motivation stimulates a behavioral state necessary for the achievement of business performance/objectives.

2.1. Theoretical Framework

There are three theories in this section, and they are the theory of scheduling and job demands-resources theory. The underpinning of these theories is explained hereunder.

Theory of Scheduling

The theory stipulates that feasible schedules occur when work sequences errors are reduced through reassignment of work patterns and sometimes resolving of job ties. In achieving these, practices are directed at testing the feasibility of work (Mckay, & Wiers, 2003, Mckay, & Wiers, 2006) and the generation of sequencing parameters within work schedules (Mckay, & Wiers, 2003, Mckay, & Wiers, 2006). Thus, work manipulations, adjustments, and assignments would be done in such a tactical in such a manner that appropriate sequences of work are achieved within required work schedules.

Job Demands-Resources Theory

The job demands-resources theory states that although job demands are not necessarily negative, they may turn into hindrance demands when meeting those demands requires high effort from which the employee has not adequately recovered (Meijman & Mulder, 1998; Bakker & Demerouti, 2014; Nachreiner, & Schaufeli, 2001). It added that the physical, psychological, social, and organizational aspects of a job are functional in achieving work goals; reduce job demands and the associated physiological and psychological costs. More so, they stimulate personal growth, learning, and development (Bakker, 2011; Bakker & Demerouti, 2007).

Adopting this theory, the organizational requirements for the suppression of job demands and the cost of job demands as used in this study scheduling practices. While job rotation scheduling reduces stress and illness caused by the performance of repetitive or continuous tasks, it also increases the satisfaction and motivation need for the job (Handerson, 1992). Work rest scheduling practices repair circadian disruptions, reduces cardiovascular and other mental issues on the one hand, and increasing the recovery time an employee needs for task completion (Konz, 1998). More so, personnel or shift scheduling reduces fatigue and monotony on the job, it also increases the learning need for the job (Ernst et al., 2004).

2.2. Empirical Review

Compendium of empirical literature has established links between employee scheduling practices such as work-rest scheduling, scheduling of employee jobs through job rotation approaches and how personnel scheduling leads to employee well-being in various work environment (Hagberg et al, 1995; Tayyari & Smith, 1997). However, the extent to which the drive to work which is motivation is determined or predicted by the state of psychological well-being of employee has been ignored in extant researches. Empirical literature as reviewed hereunder shows that creating a balance between the time employees spend at work and rest determined related with their well-being because it shows how much employees can recover to perform other assigned tasks (Bechtold & Sumners, 1988; Bechtold & Thompson, 1993; Gentzler et al., 1977). Instances where rotation of jobs and personnel determines well-being are reviewed (Norman, 2004; Carnaham, 2000, Molleman & Slomp, 1999). Moreover, only a few pieces evidence in literature have given instances where achievement of well-being, through organizational practices-employee scheduling leads to motivation.

Work Rest Schedule and Well-Being

Extant literature has revealed that work-rest scheduling can be done for the various task performed by employees. In order word, scheduling sequences vary as task performance vary. The study carried out by Van Dieen and Vrieling (1996) on the work scheduling of poultry inspectors show that they least preferred a 60-15 work rest cycles as compared to other work rest cycles such as 45-15, 30-15 and 30-30. However, statistical differential comparisons show that no significant difference exist between the later three schedules.

Generating optimum work-rest schedules has also been the motivation of past researchers. For example, Eilon (1964) examined work rest cycles by developing a mathematical model which used functions to represent two work phenomenon. The first is when human performance depreciated because of fatigue experience during work on one hand. On the other hand, it shows how humans recover from fatigue during off work period such as rest time. The developed model revealed the optimal time for work-rest and was used to express relationships with total productivity. Similar studies have been carried out by Bechtold and Sumners (1988), Bechtold and Thompson (1993), Gentzler et al, (1977), amongst others.

Job Rotation and Well-Being

Job rotation has its principal motive which is the reduction of the likelihood that injuries sustained by employee at work. Continuous performance of tasks lead to illness, back injuries and affects the daily productivity as scheduled. These injuries are due to lifting, moving or movement, or placement of materials and other work tools from one work area to another. Continuous performance of such task according to Hagberg et al (1995) might lead to sustenance of body injury. Therefore, job rotation ideals help to reduce the likelihood of such damages through three methods proposed by Tayyari and Smith (1997) and these are job redesigning or the use of automated or mechanized work system, implementation of management control measures amongst which are employee work-rest scheduling, job rotation, personnel scheduling amongst others.

Empirical studies have shown how job rotation has helped in the reduction of work injuries at diverse work settings. Literature has shown that job rotation have proved operative in various work environments. Compendium of academic literature has shown that job rotation has proved effective in refuse collecting, cashiering, poultry amongst others (Kuijer, et al, 1999; Hinnen et al., 1992). Other researchers like Norman (2004), Carnaham (2000), Molleman and Slomp (1999) has applied mathematical models to job rotation.

Personnel Scheduling and Well-Being

Arguments in personnel scheduling are that shift work has psychological, sociological and ergonomic effects. Chengular et al (2004) showed that shift work affects employee productivity, has links with heart diseases and causes some behavioral disorders like depression and disorders. Similar results were found in Wickens et al. (2004) who showed that shift works have links with circadian rhythms which are the natural fluctuation of physical and mental conditions regulated by earth circle day and night. Personnel scheduling themes address speed rotation of employees and the direction of speed rotation such as backward and forward rotation at work shifts (Chengular et al, 2004; Konz, 1998).

Employee Well Being and Motivation

Extant researches have expressed significant relationships between well-being and motivation with the use of various units of analyses, and organization of study. For example, a longitudinal study was carried out by Jordalen and Lemyre (2015) which examined the state of athletes' well-being due to motivations such as autonomy, competence, and relatedness. Findings showed that the athletes' were mostly motivated to training because of the need for autonomy and competence which also has a positive relationship with their well-being for a period. It also showed that the experiences faced by those athletes during training such as stress, exhaustion, due to the fact that they were motivated, has significant changes to their well-being.

Kaur (2013) examined the role of psychological well-being and its impact on the motivational level of employees in the information technology sector. The study interviewed 100 employees with the use of questionnaire while data collected were analysed with the use of descriptive and experimental approach. Findings revealed that psychological well-being plays a significant role in the prediction of employee motivation.

Further, Hasse, Heckhausen and Siibereisen (2012) verified the interplay between the occupational motivation and well-being during transition from university to work. Proxies of occupational motivation as used in the study were goal engagement, and goal disengagement while well-being of employee was measured with satisfaction with life, satisfaction with work and satisfaction with partnership, amongst others. The study gathered data from 498 university graduated and analysed with latent growing curve modelling. Analyses showed that extent to which university graduates deal with their occupational goals closely relates with their well-being.

Most of these studies only establish links between organizational practices or motivation pursuits that leads determines the states of well-being of the units of analyses examined. However, these studies has not revealed by how much motivational drive towards an organization is predicted or determined by organizational practices such as employee scheduling that leads to well-being. This gap defines the focus of this study is to examine how employee work rest scheduling, job rotation and personnel scheduling would improve employee physical and psychological well-being and how it would produce a motivation workforce.

3.0. Methods

The research design of this survey considers the time horizon, idea behind the choice of population, samples, and decisions for the data collection analytical methods deployed. As

regards the time horizon, the design is such that cross-sectional survey approach which was used to investigate observed event at one point in time. The study focus on factory engineers, and plant operators in manufacture.

Relationship and differential analytical techniques were used to study the pattern of relationships and differences inherent in the responses of the observed subjects and variables. The population of study consists of staff of Omotosho Power Plant in Ondo State, Nigeria. It includes operators, and plant managers in all units of the station. The plant operates on four (4) shifts and the total number of plant managers, and operators that works in all the shifts is 45 employees. Stratified sampling technique was used to ensure adequacy of the sample size.

The questionnaire was the instrument of data collection, and it was designed in a closed-ended format. It captured information on the study variables. Response to the variables were weighed on Five Point Likert Rating Scale coded as follows: Strongly agree = 5, Agree = 4, Undecided = 3, Disagreed = 2 and Strongly Disagreed = 1.

Data collected were analyzed with the use of relationship and differential analytical techniques. The relationship analytical technique used was correlation and regression analyzes and supported with the use of Analysis for Variance Techniques (ANOVA).

4.0. Data Presentation and Analyses

This section the presentation and analyses of data presented. Data were analyzed with regression, correlation an ANOVA technique.

Research Objective 1: To explain how employee well-being is predicted by the scheduling of work-rest, jobs and personnel or work shift.

H_{01} : Employee well-being is not predicted by the scheduling of work-rest, jobs and personnel.

Table 1: Model Summary of Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.175 ^a	.031	-.050	.76394

a. Predictors: (Constant), Work Rest Schedules, Job Rotation Scheduling, Personnel Scheduling

Analysis of the results on table 1 shows that R square value is .031 at a standard error of estimate of 0.76394. This implies that the predictor variables which were work rest schedules job rotation scheduling, and personnel scheduling predicts employee well-being by 31% while the remaining 69% employee well-being can be adduced to other factors not considered in the model.

Table 2: ANOVA of Regression Analyses

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.661	3	.220	.378	.770 ^b
	Residual	21.010	36	.584		
	Total	21.671	39			

a. Dependent Variable: Employee Well-Being

b. Predictors: (Constant), Work Rest Schedules, Job Rotation Scheduling, Personnel Scheduling

Table 2 is the analyses of variance, and it shows the differences in prediction of change in dependent variables by the predictor variables. The table shows that ($F = 0.378$ at $p\text{-value} = 0.770 < 0.05$). This implies no differences in prediction of the dependent variables on the independent variables.

Table 3: Coefficients of Regression Analyses

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
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		B	Std. Error	Beta		
1	(Constant)	5.032	1.530		3.289	.002
	Personnel Scheduling	.079	.403	.038	.196	.846
	Job Rotation Scheduling	-.339	.349	-.187	-.971	.338
	Work Rest Schedules	.015	.123	.020	.119	.906

a. Dependent Variable: Employee Well-Being

The coefficient of regression analyses on Table 3 makes the comparison in relationships between scheduling of work-rest, job rotation and personnel on well-being. The beta section of the unstandardized coefficients shows that personnel scheduling contributed to the prediction at ($\beta = 0.079$, $t = 0.196$; $p \text{ sig.} = 0.846 > \alpha = 0.05$). Also job rotation scheduling negatively contributed to the prediction at ($\beta = -0.339$, $t = -0.971$; $\text{sig.} = 0.338 > \alpha = 0.05$). Further, work-rest scheduling positively contributed to the prediction at ($\beta = 0.015$, $t = 0.119$; $\text{sig.} = 0.906 > \alpha = 0.05$). The table further showed that the p-value of the constant is ($0.002 < \alpha = 0.05$).

It can be inferred that employee well-being is predicted by the scheduling of work-rest, jobs and personnel. Therefore, the null hypotheses is rejected.

4.1. Research Objective 2: To determine if employee motivation to work is significantly determined by their state of well-being.

H_{02} : Employee motivation to work is not significantly determined by their state of well-being.

Table 4: Correlations between Well-Being and Motivation

		Employee Motivation	Employee Well-Being
Employee Motivation	Pearson Correlation	1	.439**
	Sig. (2-tailed)		.005
	N	40	40
Employee Well-Being	Pearson Correlation	.439**	1
	Sig. (2-tailed)	.005	
	N	40	40

** . Correlation is significant at the 0.01 level (2-tailed).

Analyses on Table 4 above shows that the correlation value is ($r = 0.439 < 1.00$) and it implies positive relationship between the variables. More so, this relationship was significant because the Sig. (2-tailed) of 0.005 is less than the alpha value at ($p = 0.005 > \alpha = 0.05$). Therefore, the null hypotheses is rejected and it can be stated that employee motivation is significantly determined by their states of well-being.

5.0 Discussion of Findings

The study examine how employee scheduling practices are veritable determinants of employee well-being and how it leads to employee motivation to work in manufacturing plants. Findings based on the specific objectives reveals various relationships which has empirical and theoretical justifications. Findings show that employee well-being is predicted by the scheduling of work-rest, jobs and personnel or work shift by 31% within the predictive capacity of the model. It also adducing the effects of other factors constituting 69% not captured in the model, as determinants of employee well-being. Various empirical studies has revealed links between well-being and scheduling practices.

The findings that employee well-being is positively predicted by work-rest scheduling has empirical confirmation. In the study of Van Dieen and Vrieling (1996), poultry inspectors preferred a 60-15 work rest cycle amongst others. Elion (1964) showed how a well-being variable such as the appropriate recovery time for work was determined through a design of work-rest scheduling model. The study also revealed how productivity is determined through work-rest optimization. Bechtold and Sumners (1988), Bechtold and Thompson (1993), Gentzler et al, (1977), has also verified the importance of work-rest scheduling on well-being.

This study shows that personnel scheduling practices has positively links with employee well-being. This also means that the development of appropriate personnel scheduling practices or methods would minimize the effects of associated with assigning personnel to work shift. Such methods has been developed by Chengular et al (2004) and Konz (1998) who developed various methodologies of minimizing the effects of shift schedules or personnel schedules.

Findings show that employee well-being was negatively predicted by job rotation schedules as shown in this study. This is not consistent with empirical findings of Tayyari and Smith (1997) which showed that job rotation ideals helps to reduce the likelihood of body injuries. Other studies proved job rotation as effective in the process of refuse collecting, cashiering, poultry amongst others (Kuijer, et al., 1999; Hinnen et al., 1992). However, the inconsistency between results of empirical literature and that of this study can be adduced to occupational differences and organizational preferences or practices. In the power plant observed employees are not allowed to perform multiple task than assigned which is the goal of job rotation.

This study showed that positive relationship exist between employee well-being and their motivation towards work as opposed to result of some empirical studies. Thus, it affirms that the more the well-being of employees increases, the more motivated they are to undertake task assigned. A study showed that psychological well-being plays a significant role in the prediction of employee motivation (Kaur, 2013). Other studies showed that motivation comes first before well-being. Hasse, Heckhausen and Siibereisen (2012) revealed that motivation to achieve a goal has also been linked to occupational well-being. In the study of athletes', findings showed that athletes were mostly motivated to training because of the need for autonomy and competence which also has positive relationship with their well-being for a period of time (Jordalen & Lemyre, 2015).

6.0. Conclusion

Well-being in this study has been seen as a state of physical and mental wellness of employees which is reached through employee scheduling practices. More so, motivation of employees towards work increases as their well-being increases, and vice versa. Thus, in line with the job demands- resources theory, the design of appropriate scheduling practices appear as resources that reduces the exigencies or costs of job demands. More so, designing employee schedules should be in line with some basic principles in scheduling theory which states that feasible schedules occur when the errors work sequences are reduced through reassignment of work patterns and sometimes resolving of job ties. In achieving these, practices would be directed at testing the feasibility of work (MCKay, & Wiers, 2003, MCKay, & Wiers, 2006) and the generation of sequencing parameters within work schedules (MCKay, & Wiers, 2003, MCKay, & Wiers, 2006). Therefore, the need to control disorders associate with work shift through employee scheduling practices becomes imperative to organizations. This has proved positive and veritable for their well-being which also leads to their motivation.

6.1. Recommendations and Suggestions

Recommendations: Based on the findings, the study recommends that managers in the manufacturing plants most especially characterized by shift practices should design employee work schedules. This is in order to minimize physical and psychological disruptions associated with work shifts on one hand, and to increase their motivation.

Suggestions: Interested researchers should develop other scheduling methodologies that serves as models with which organization in various industries could adopt in its organizing employees. Such models could be developed through the use of mathematical models. More studies could be furthered to examine other employee scheduling parameters not considered in this study.

7.0. References

- Bakker, A. B. & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309–328
- Bakker, A. B. & Demerouti, E. (2014). *Jobs Demands- Resources Theory*. John Wiley & Sons, Ltd. Published 2014 by John Wiley & Sons, Inc.
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20, 265–269.
- Banjoko, S. A. (2009). *Production and operations management*. Ibadan: Oluseyi Press Limited.
- Bechtold, S. E. & Sumners, D. L. (1988). Optimal work-rest scheduling with exponential work-rate decay. *Management Science*, 34(4), 547-552.
- Bechtold, S.E. & Thompson, G.M. (1993). Optimal scheduling of a flexible-duration rest period for a work group. *Operations Research*, 41(6), 1046-1054.
- Brooks, I. (2006). *Organisational behaviour*. London: Pearson Education Limited.
- Camahan, B. Norman, B.A. & Redfem, M.S. (2000). Designing safe job rotation schedules using optimization and heuristic search. *Ergonomics*, 43(4):543-560.
- Campbell G. M. & Diaby, M. (2002). Development and Evaluation of an assignment heuristic for allocating cross-trained workers. *European Journal of Operational Research*, 138, 9-20.
- Chengalur, S. N., Rodgers, S. H. & Bernard, T. E. (2004). *Kodak's Ergonomic Design for People at Work*. 2nd Edition, John Wiley & Sons, Inc., Hoboken, NJ.
- Clark, W. (1942). *The Gantt Chart, a Working Tool of Management*, second edition. Sir Isaac Pitman & Sons, Ltd., London.
- Cox, J. F., Blackstone, J. H. & Spencer, M. S. (1992), *APICS Dictionary*, American Production and Inventory Control Society, Falls Church, Virginia.
- Demerouti, E., Bakker, A. B., Nachreiner, F. & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.
- Devadass, R. (2011). Employees Motivation in Organizations: An integrative literature review. *International Conference on Sociality and Economics Development IPEDR vol.10. Press, Singapore. pg. 566-570*
- Eilon, S. (1964). On a mechanistic approach to fatigue and rest periods. *International Journal of Production Research*, 3, 327-332.
- Ernst, A. T., Jiang, H., Krishnamoorthy, M. & Sier, D. (2004). Staff scheduling and rostering: A review of applications, methods and models. *European Journal of Operational Research*, 153, 3-27.
- Ernst, A. T., Jiang, H., Krishnamoorthy, M., Owens, B. & Sier, D. (2004). An annotated bibliography of personnel scheduling. *Annals of Operations Research*, 27, 21- 144.
- Gentzler, G. L., Khalil, T. M., and Sivazlian, B. B. (1977). Quantitative models for optimal rest period scheduling. *Omega*, 5, 215-220.
- Günaydın, H. (2007). *Ekonomik psikoloji*. İstanbul: Elit
- Hagberg, M., Silverstein, B., Wells, R., Smith, M. J., Hendrick, H. W., Carayon, P. & P'erusse, M. (1995). *Work Related Musculoskeletal Disorders (WMSDs): A Reference Book for Prevention*. Taylor&Francis, Great Britain, 31
- Hasse, C. M, Heckhausen, J. & Siibereisen, R. K (2012). The Interplay of Occupational Motivation and Well - Being During the Transition from University to Work. *American Psychological Association*, 48(6), 1739–1751.
- Henderson, C. J. (1992). Ergonomic job rotation in poultry processing. *Advances in Industrial Ergonomics and Safety*, 4:443-450.
- Herrmann, J. W. (2006). *Handbook of production scheduling*, USA, Springer.

- Hinnen, U., Laubli, T., Guggenbuhl, U. & Krueger, H. (1992). Design of check-out systems including laser scanners for sitting work posture. *Scandinavian Journal of Work, Environment and Health*, 18:186-194.
- Jordalen, G. & Lemyre, P.N. (2015). A longitudinal study of motivation and well-being indices in marathon runners. *International Journal of Sport and Exercise Science*, 7(1), 1-11
- Kaur, J. (2013). Role of psychological well-being and its impact on the motivational level of the employees in IT Sector. *International Journal of Advanced Research in Management and Social Sciences*, 2(6), 43-51.
- Knauth, P. (1993). The design of shift systems. *Ergonomics*, Vol. 36, pp. 15-28.
- Konz, S. (1998). Work/rest: Part II - The scientific basis (knowledge base) for the guide. *International Journal of Industrial Ergonomics*, 22, pp. 73-99.
- KoKostreva, M., Mcnelis, E., & Clemens, E. (2002). Using a circadian rhythms model to evaluate shift schedules. *Ergonomics*, 45(11), 739 -763.
- Kuijjer, P. P. F.M., Visser, B. & Kemper, H.C.G. (1999). Job rotation as a factor in reducing physical workload at a refinery collecting department. *Ergonomics*, 42(9): 1167-1178.
- Lee, H., E. & Taguchi, E. (2013). A Cross-Cultural Validation of the Six-Factor Model of Psychological Well-Being: Texas.
- Liles, D. & Deivanayagam, S. (1984). A job severity index for the evaluation and control of lifting injury. *Human Factors*, 26(6):683-693.
- Lodree, E. J., Geiger, C. D. & Jiang, X. (2006). Taxonomy for integrating scheduling theory and human factors: Review and research opportunities. *Journal of Scheduling, Under Review*.
- Mckay, K. N. & Wiers, V.C.S. (2003). Planning, scheduling and dispatching tasks in production control. *Cognition, Technology & Work*, 5, 82-93.
- Mckay, K. N. & Wiers, V. C. S., (2006). The human factor in planning and scheduling. USA: Springer.
- Meijman, T. F. & Mulder, G. (1998). Psychological aspects of workload. In P. J. Drenth, H. Thierry, & C. J. de Wolff (Eds.), *Handbook of work and organizational psychology* (2nd ed.; pp. 5-33). Hove, U.K.: Erlbaum.
- Molleman, E. & Slomp, J. (1999). Functional Flexibility and Team Performance. *International Journal of Production Research*, 37(8), 1837- 1858.
- Monk, T. H. (2000). What can the chronobiologist do to help the shift worker? *Journal of Biological Rhythms*, 15, 86-94.
- Norman, B. A., Tharmmaphomphilas, W., Needy, K. L., Bidanda, B., & Warner, R. C. (2002). Worker Assignment in Cellular Manufacturing Considering Technical and Human Skills. *International Journal of Production Research*, 40(6), 1479 – 1492
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.
- Seniwoliba, A. J. & Nchorbono, A. D. (2013). Examining the role of motivation on employee performance in the public sector in Ghana, *Merit Research Journal of Education and Review*, 1(10): 227-249.
- Smith, L., Hammond, T., Macdonald, L. & Folkard, S. (1998). 12-h shifts are popular but are they a solution? *International Journal of Industrial Ergonomics*, 21, 323-331.
- Stevenson, W. (2013). *Operations management: Theory and Practice (11th ed)*. Glasgow: Bell and Bain Ltd.
- Syafii, L. I., Thoyib, A. & Djumahir, N. (2015). The role of corporate culture and employee motivation as a mediating variable of leadership style related with the employee performance *Procedia Social and Behavioural Sciences*, 211, 1142-1147.

- Taghipour, A. & Dejbani, R. (2013). Job Performance: Mediate Mechanism of Work Motivation. *Procedia - Social and Behavioral Sciences* 84, 1601 – 1605.
- Tayyari, F. & Smith, J. L. (1997). Occupational Ergonomics Principles and Applications. Chapman and Hall, London, UK.
- Turabik, T. & Baskan, G.A. (2015). The importance of motivation theories in terms of education systems. *Social and Behavioural Sciences*, 186.1055-1063.
- Van Dieen, J. & Verielink, H., 1996b, Evaluation of workrest schedules with respect to postural workload in standing work. In: Mital et al. (Ed.), *Advances in Occupational Ergonomics and Safety, International Society for Occupational Ergonomics and Safety, Cincinnati, OH*, 394-399.
- Vollmann, T. E., Berry, W. L. & Whybark, D. C. (1988). *Manufacturing planning and control systems*. Homewood, IL: Irwin.
- Wickens, C. D., Lee, J. D., Liu, Y. & Gordon-Becker, S. E. (2004). *An Introduction to Human Factors Engineering*. 2nd Edition, Prentice Hall, Upper Saddle River, NJ
- Wiers, V. C. S. (1997). Human-computer interaction in production scheduling: Analysis and design of decision support system for production scheduling tasks, Ph.D. Thesis, Eindhoven University of Technology.
- Wright, T. A. & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology*, 5(1), 84-94.
- Zamecnik, R. (2014). The measurement of employee motivation by using multi-factor statistical analysis, *Procedia - Social and Behavioral Sciences* 109, 851 – 857.