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EDUCATIONAL DEVELOPMENT AND WORK FORCE PLANNING IN MANUFACTURING FIRMS IN RIVERS STATE

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ABSTRACT

The study examined Educational development and workforce planning in manufacturing firms in Rivers State. Two research questions and three research hypotheses guided the study. The study participants comprised of management staff of manufacturing firms in Rivers State. A sample of 90 study participants where purposely selected from nine manufacturing firms in Rivers State. The instrument for data collection was a self-developed questionnaire titled: Educational Development and Work Force Planning (EDWFE) response options include, Strongly Agree, Agree, Disagree, Strongly disagree. The instrument was validated by experts who ensured that the instruments meets required standards, a reliability coefficient index of 0.862 was obtained using cronbach alpha statistics, the descriptive statistics of mean and standard deviation was used to analyze the research question while spearman rack order and independent t-test was used to test the hypotheses at 0.05 alpha level. Major findings of the study revealed a significant relationship between educational development and work force planning in manufacturing firms in Rivers State. Based on the findings, the study recommended that staff of manufacturing firms should be encouraged to undergo regular training and seminars to develop their knowledge and skills in job performance.

INTRODUCTION

In the rapidly evolving business landscape of today, manufacturing firms in Rivers State, Nigeria, face intense competition and pressure to innovate (Adeyemi & Adeyinka, 2020). To remain competitive, these firms must prioritize educational development and workforce planning (WFP) to ensure their employees possess the necessary skills and knowledge (OECD, 2019). Educational development encompasses two critical dimensions: access and equity, and quality and relevance (UNESCO, 2019).

Access and equity in educational development ensure that all employees have opportunities to acquire knowledge and skills, regardless of their background or socio-economic status (World Bank, 2020). Quality and relevance, on the other hand, focus on the standards and applicability of education and training programs (ILO, 2018).

Effective workforce planning is crucial for manufacturing firms to achieve their strategic objectives (Cascio, 2018). Two essential measures of WFP are training and development, and infrastructure and resources. Training and development programs enhance employees' skills and knowledge, while infrastructure and resources support the implementation of WFP strategies (Armstrong & Taylor, 2020).

The concept of job-employee fit can serve as a moderating variable in the relationship between educational development and workforce planning. Job-employee fit refers to the degree to which an individual's skills, knowledge, and qualifications match the requirements of their job role (Kristof-Brown et al., 2005). When employees are placed in positions that match their qualifications, they are more likely to perform well, leading to improved organizational performance.

This study aims to investigate the relationship between educational development and workforce planning in manufacturing firms in Rivers State, with a focus on job-employee fit as a moderating variable. By exploring these concepts, this research seeks to provide insights into how manufacturing firms can optimize their workforce planning strategies to achieve competitive advantage.

Statement of the Problem

Despite the crucial role of educational development and workforce planning in enhancing organizational performance, manufacturing firms in Rivers State, Nigeria, continue to face significant challenges. These challenges include inadequate access to quality education and training, leading to skill gaps among employees (Afolabi & Adebayo, 2020). The dimensions of educational development, specifically access and equity, and quality and relevance, are critical in addressing these issues (UNESCO, 2019).

Access and equity in educational development ensure that all employees have opportunities to acquire knowledge and skills, regardless of their background or socio-economic status (World Bank, 2020). However, many manufacturing firms in Rivers State struggle to provide equitable access to training and development programs, resulting in disparities in employee performance (Okoroafor & Nwankwo, 2019).

Quality and relevance of education and training programs are also essential for enhancing employee skills and knowledge (ILO, 2018). Yet, many manufacturing firms in Rivers State face challenges in providing high-quality training programs that are relevant to the needs of their employees and the organization (Adeyemi & Adeyinka, 2020).

Effective workforce planning is critical for manufacturing firms to achieve their strategic objectives (Cascio, 2018). Measures of workforce planning, such as training and development, and infrastructure and resources, are essential for enhancing employee performance and organizational productivity (Armstrong & Taylor, 2020). However, many manufacturing firms in Rivers State struggle to implement effective workforce planning strategies, leading to skill gaps and poor employee performance (Okoroafor & Nwankwo, 2019).

The concept of job-employee fit can serve as a moderating variable in the relationship between educational development and workforce planning. Job-employee fit refers to the degree to which an individual's skills, knowledge, and qualifications match the requirements of their job role (Kristof-Brown et al., 2005). When employees are placed in positions that match their qualifications, they are more likely to perform well, leading to improved organizational performance.

Purpose of the Study

The main purpose of this study is to assess the educational development and work force planning of manufacturing firms in Rivers State.
Specifically, the study sought to do the following;
1. To examine the relationship between educational development and workforce planning in manufacturing firms in Rivers State.
2. To investigate the impact of access and equity, and quality and relevance of educational development on workforce planning in manufacturing firms.
3. To explore the moderating effect of job-employee fit on the relationship between educational development and workforce planning.

Research Questions

The following research questions guided the study:
1. What is the relationship between educational development and workforce planning in manufacturing firms in Rivers State?
2. How do access and equity, and quality and relevance of educational development influence workforce planning in manufacturing firms?

3. Does job-employee fit moderate the relationship between educational development and workforce planning in manufacturing firms?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1.There is no significant relationship between educational development and workforce planning in manufacturing firms.

2. Access and equity, and quality and relevance of educational development have no significant impact on workforce planning in manufacturing firms.

3.Job-employee fit does not significantly moderate the relationship between educational development and workforce planning in manufacturing firms.

Conceptual Review

Educational development and workforce planning are crucial for manufacturing firms to stay competitive and drive organizational growth (Adeyemi & Adeyinka, 2020). In Rivers State, manufacturing firms face unique challenges that require strategic workforce planning (Okoroafor & Nwankwo, 2019). This review explores the relationship between educational development and workforce planning, focusing on access and equity, quality and relevance, training and development, infrastructure and resources, and job-employee fit as a moderating variable.

Dimensions of Educational Development

- Access and Equity: Ensuring equal access to education and training programs is vital for developing a skilled workforce (UNESCO, 2019). This dimension involves providing opportunities for employees to acquire new skills and knowledge, promoting diversity and inclusion in the workplace (World Bank, 2020).
- Quality and Relevance: The quality and relevance of education and training programs significantly impact workforce productivity (ILO, 2018). Manufacturing firms need to invest in programs that address specific skill gaps and industry needs, ensuring employees are equipped to drive innovation and efficiency (Adeyemi & Adeyinka, 2020).

Measures of Workforce Planning

- Training and Development: Effective training and development programs enable employees to acquire new skills and adapt to changing industry demands (Armstrong & Taylor, 2020). This measure involves identifying skill gaps, designing targeted training programs, and evaluating their impact on workforce productivity (Cascio, 2018).
- Infrastructure and Resources: Adequate infrastructure and resources are essential for supporting workforce development (Armstrong & Taylor, 2020). This includes investing in technology, equipment, and facilities that facilitate employee learning and innovation.

Job-Employee Fit as a Moderating Variable

Job-employee fit refers to the alignment between an employee's skills, abilities, and interests and the requirements of their job (Kristof-Brown et al., 2005). A good job-employee fit can enhance employee satisfaction, productivity, and retention. In the context of educational development and workforce planning, job-employee fit can moderate the relationship between training programs and workforce outcomes.

Key Elements of Workforce Planning

Effective workforce planning involves several key elements, including :

- Demand Forecasting: Anticipating future workforce needs based on business objectives and industry trends.
- Skills Assessment: Identifying skill gaps and developing targeted training programs to address them.
- Capacity Planning: Optimizing resource allocation to meet production demands.

- Scenario Modeling: Simulating various workforce scenarios to mitigate risks and devise contingency plans.
- Performance Analytics: Tracking key performance indicators to evaluate workforce productivity and efficiency.

Educational development and workforce planning are interconnected and crucial for manufacturing firms in Rivers State. By investing in access and equity, quality and relevance, training and development, infrastructure and resources, and considering job-employee fit, manufacturing firms can develop a skilled and productive workforce. Effective workforce planning involves demand forecasting, skills assessment, capacity planning, scenario modeling, and performance analytics (Gillespie, 2024). By adopting a strategic approach to workforce planning, manufacturing firms can drive growth, innovation, and competitiveness.

Educational Development

Educational development is crucial for human capital development, enabling individuals to acquire knowledge, skills, and competencies necessary for personal and professional growth (UNESCO, 2019). It encompasses:

Access and Equity

Access to education refers to availability of educational opportunities, while equity ensures fair distribution (World Bank, 2020). Disparities in access persist, particularly in developing countries (UNESCO, 2020).

Quality and Relevance

Quality education imparts relevant knowledge and skills (OECD, 2018). Relevance aligns educational programs with labor market needs (World Bank, 2018). Quality and relevance are crucial for employability and economic growth (ILO, 2019).

Workforce Planning

Workforce planning ensures organizations have the right talent and skills (Cascio, 2018). Measures include:

Training and Development

Training enhances employee skills and competencies (Noe, 2017). Investing in employee development improves job performance and productivity (Aguinis & Bradley, 2015).

Infrastructure and Resources

Infrastructure and resources support organizational operations (Bharadwaj, 2000). Investing in infrastructure improves performance and competitiveness (Brynjolfsson & Hitt, 2000).

Job-Employee Fit

Job-employee fit aligns individual skills and abilities with job requirements (Kristof-Brown et al., 2005). Job-employee fit impacts job satisfaction, performance, and organizational commitment (Verquer et al., 2003).

Conceptual Framework

Educational Development (Access and Equity, Quality and Relevance) → Workforce Planning (Training and Development, Infrastructure and Resources)

Job-Employee Fit (Moderating Variable)

Theoretical Review

Human Capital Theory

Human Capital Theory (Becker, 1964) posits that investments in education and training enhance an individual's productivity and earnings. This theory is relevant to our study as it highlights the importance of educational development in improving workforce productivity.

- Access and Equity: Human Capital Theory suggests that equal access to education and training programs can enhance employee productivity and organizational performance.
- Quality and Relevance: The theory emphasizes the importance of high-quality education and training programs that address specific skill gaps and industry needs.

Resource-Based View (RBV) Theory

The RBV Theory (Barney, 1991) suggests that organizations can gain a competitive advantage by leveraging their internal resources, including human capital. This theory is relevant to our study as it highlights the importance of workforce planning in achieving organizational goals.

- Training and Development: RBV Theory suggests that investing in employee training and development can enhance organizational performance and competitiveness.
- Infrastructure and Resources: The theory emphasizes the importance of adequate infrastructure and resources in supporting workforce development and productivity.

Person-Environment Fit Theory

Person-Environment Fit Theory (Kristof-Brown et al., 2005) suggests that a good fit between an employee's skills, abilities, and interests and the requirements of their job can enhance employee satisfaction, productivity, and retention. This theory is relevant to our study as it highlights the importance of job-employee fit in moderating the relationship between educational development and workforce planning.

Relevance of the Theories to the Study

The theories reviewed above provide a framework for understanding the relationship between educational development and workforce planning in manufacturing firms. The Human Capital Theory highlights the importance of investing in education and training, while the RBV Theory emphasizes the importance of leveraging internal resources to achieve organizational goals. The Person-Environment Fit Theory suggests that job-employee fit can moderate the relationship between educational development and workforce planning.

By applying these theories to this study, we can gain insights into how manufacturing firms in Rivers State can develop effective educational development and workforce planning strategies to enhance organizational performance and competitiveness.

Empirical Studies

Dimensions of Educational Development

- Access and Equity: Research suggests that equal access to education and training programs enhances employee productivity and organizational performance. Studies have shown that organizations that prioritize employee development tend to have better job satisfaction and reduced turnover rates (Ojebola et al., 2020).
- Quality and Relevance: High-quality education and training programs that address specific skill gaps and industry needs are crucial for organizational success. A study on organizational citizenship behavior (OCB) found that employees who exhibit extra-role behaviors, such as self-development, contribute significantly to organizational effectiveness (Tambe, 2014).

Measures of Workforce Planning

- Training and Development: Investing in employee training and development is essential for enhancing organizational performance and competitiveness. Research has shown that training programs can improve employee skills, job satisfaction, and productivity (Falola et al., 2018).
- Infrastructure and Resources: Adequate infrastructure and resources are necessary for supporting workforce development and productivity. A study on OCB found that organizational characteristics, such as flexibility and staff support, can foster employee behaviors that contribute to organizational success (Kasa & Hassan, 2016).

Job-Employee Fit as a Moderating Variable

Job-employee fit can moderate the relationship between educational development and workforce planning. Research suggests that when employees' skills and abilities align with job requirements, they tend to exhibit higher levels of job satisfaction, productivity, and organizational commitment (Kristof-Brown et al., 2005).

Educational development and workforce planning are crucial for the growth and competitiveness of manufacturing firms in Rivers State, Nigeria (Nwobike Aruchi et al., 2023; Igweagbara & Saue, 2018). Here are some key empirical studies and findings:

Dimensions of Educational Development

Access and Equity

Research highlights the importance of equal access to quality education in enhancing organizational performance. A study on business education graduates in Rivers State found that operational skills acquired by graduates significantly impact their employability in a changing economy (Nwobike Aruchi et al., 2023). Ensuring equal access to quality education can bridge the gap between graduate capabilities and employer requirements.

Quality and Relevance

Studies emphasize the need for educational programs to align with labor market expectations. Research on employability skills required by education graduates in Rivers State universities stresses the importance of tailoring academic programs to meet industry needs, promoting economic growth and development (Igweagbara & Saue, 2018).

Measures of Workforce Planning

Training and Development

A study on organizational learning capability and employee performance in manufacturing firms in Rivers State found a significant relationship between training and development practices and employee performance (EMOH, 2023). Investing in employee development can lead to improved job performance and organizational productivity.

Infrastructure and Resources

Research on strategic planning and organizational performance in manufacturing firms in Rivers State highlights the importance of adequate infrastructure and resources in supporting workforce planning and driving business growth (Madume et al., 2024).

Job-Employee Fit as a Moderating Variable

Job-employee fit can play a crucial role in moderating the relationship between educational development and workforce planning. When employees' skills and abilities align with job requirements, it can lead to improved job satisfaction, performance, and organizational commitment.

Educational development and workforce planning are crucial for the growth and competitiveness of manufacturing firms in Rivers State, Nigeria. Here are some key empirical studies and findings:

Dimensions of Educational Development

Access and Equity

A study on up-skilling and re-skilling industrial workforce via school-industry relations for effective work preparation of students in technical institutions in Rivers State found that respondents agreed to a high extent that up-skilling and re-skilling industrial workforce can be achieved through 60+40 training systems, school-industry administrative links, and industry-based activities (Ikechukwu Chidiebere Odogwu et al., 2024). This suggests that equal access to quality education can enhance organizational performance.

Quality and Relevance

Research on relevance and adequacy syndrome of technical vocational education and training curriculum highlights the need for educational programs to align with labor market expectations (Olabiyi, 2014). A study on managing the challenges facing technical and vocational education programs in Rivers State emphasizes the importance of tailoring academic programs to meet industry needs, promoting economic growth and development (EBETE et al., 2020; Olabiyi, 2014).

Measures of Workforce Planning

Training and Development

Studies emphasize the importance of training and development in enhancing employee performance and productivity (Ohiri, 2002; Njoku, 2007). A study on the impact of training and development on workers' productivity found a positive relationship between training and development practices and employee performance. Training programs can improve employee behavior and performance on the job, leading to increased productivity and effectiveness.

Infrastructure and Resources

Research highlights the need for adequate infrastructure and resources to support workforce planning. A study emphasizes the importance of providing necessary resources to ensure effective program implementation (no direct citation available, but relevant to the discussion).

Job-Employee Fit as a Moderating Variable

Job-employee fit can play a crucial role in moderating the relationship between educational development and workforce planning. When employees' skills and abilities align with job requirements, it can lead to improved job satisfaction, performance, and organizational commitment.

METHODOLOGY

Research design: the study adopted cross sectional survey design.

Population of the study: the population of the study is made up of management staff of all the nine manufacturing firms in Rivers State.

Sample and sampling technique: A sample of 9 respondents where purposely selected proportionally, with each firms getting 10 staff which were randomly selected to represent the firm.

Instrument for data collection: the researcher developed an instrument titled Educational Development and Work Force Planning In Manufacturing Firms Questionnaire (EDWPMFQ). The instrument elicited data on both the demographic variables of respondents and on the questionnaire items, the response options include; Strongly agree, Agree, Disagree, Strongly disagree.

Validity of the instrument: The instrument was duly validated by experts who ensured that the variables were adequately covered in its contents.

Reliability of the instrument: cronbach alpha statistics was used to obtain coefficient index of 0.862 which was deemed reliable for the study.

Method of Date Analysis: the descriptive statistics of mean and standard deviation were used to analyze the data on the research questions, while spearman ran k order correlation and independent t-test analysis was used to test the hypothesis at 0.05 significance level.

RESULTS

Research Question One: what is the relationship between educational development and work force planning in manufacturing firms in Rivers State?

Table 1: mean and Standard deviation scores on the relationship between educational development and work force planning in manufacturing firms.

S/N	Items	Sum	X	SD	Remarks
1	Educational development through a work force planning develops training programmes.	263	2.922	1.709	Agreed
2	Effective workforce planning enhances productivity and skill development.	266	2.955	1.719	Agreed
3	Educational development help boost productivity of the work force	273	3.033	1.741	Agreed

4	Educational development improves efficiency of employees to achieve organizational goals.	254	2.822	1.679	Agreed

Data collected on table one showed that items 1-4 had all the mean score above the criterion mean of 2.5 indicating that educational development relates with work force, meaning that manufacturing firms through training programmes enhances efficiency, productive workforce through skill development.
Research question two: how does access, equity, quality and relevance of educational development influence workforce planning in manufacturing firms in Rivers State?

Table 2: Mean and standard deviation: scores on the influence of access, equity, quality and relevance on work force planning.

S/N	Items	Sum	X	Sd	Remarks
5	Access, equity, quality increases job satisfaction of employees	2.74	3.044	1.744	Agreed
6	It adapts quickly to changing market demands	255	2.833	1.683	Agreed
7	It cuts operational costs to maximize profits.	239	2.655	1.629	Agreed
8	Access, equity, quality enhance work force planning by identifying potential talents that improves efficiency at workplace.	256	2.844	1.686	Agreed

Analysis in table 2 revealed that items 5-8 had all the mean scores above criterion mean of 2.5 showing that access, equity, and quality influences work force planning by increasing job satisfaction, cuts operational costs to maximize profits and enhances work force planning by identifying potential talents that improves efficiency at work place.
Hypothesis One: there is no significant relationship between educational development and work force planning in manufacturing firms in Rivers State.

Table 3 Spearman rank order (rho) on the relationship between educational development and work force planning.

		Edu. Dev.	Work force
Spearmans rho	Educational development		
	Correlation coefficient	1.000	.859
	Sig. (2 failed)		.000
	N		
	Work force planning	45	45
	Correlation coefficient	.859	
	Sig (2 failed)		
	N	0.000	
		45	45

Analysis of data in table 3 revealed that the value of 0.859 using 2 failed test p= 0.000 at $p<0.05$ significance level showing it is positively correlated. Hence, there is a strong and significant

relationship between educational development and work force planning, thus the null hypothesis was rejected and alternate hypothesis accepted. There is therefore a significant relationship between educational development and work force planning in manufacturing firms in Rivers State.
Hypothesis two: Access, equity, quality and relevance of educational development has no significant impact on work force planning in manufacturing firms in Rivers State.

Table 4: independent t-test analysis on the impact of Access, equity, quality of educational development on work force planning.

Variables	N	X	SD	Tcal	T critical	Remarks
Access, equity, quality	45	2.816	1.678			
				2.51	1.96	Not sig
Workplace planning	45	2.762	1.661			

Table 4 data analysis showed that the t-calculated value of 2.51 is greater than the t-critical value of 1.96 at 0.05 level of significance. Hence, the null hypothesis was rejected meaning Access, equity, quality and relevance of educational development significantly impact on work force planning in manufacturing firms in Rivers state.
Hypothesis Three: Job employee fit does no significantly moderate the relationship between educational development and work force planning in manufacturing firms in Rivers State.
Table 5 rho moderating relationship between educational development and work force planning

	Edu Dev			Work force		
Control variables	correlations	2tailed	Df	Correlations	2tailed	Df
Job employee fit	1.000		0	.836	.000	88
	.836	.000	88			

Analysis of data in table 5 revealed that the rho value is 0.836using a 2tailed test, p> 0.000 at 0.05 level of significance, meaning it is showing a significant effect of the moderating variables job employee fit on the relationship between educational development and work force planning, thus the null hypothesis was rejected and alternate hypothesis accepted. Hence, job employee fit significantly moderates effectively on the relationship between educational development and work force planning of manufacturing firms in Rivers State.

DISCUSSION OF THE RESULTS

The results on findings on research question one and hypothesis one revealed that there is a significant relationship between educational development and workforce planning in manufacturing firms In Rivers State. showing that educational development enhances the skill of the work force to improve with job requirement which tends to exhibit higher levels of job satisfaction, productivity and organizational commitment. The implication is that employees who acquires higher skills performs better than those who do not acquire more skills. This findings agrees with falola et at (2018) who posited that training programmes improves employees skill, job satisfaction and productivity, this implies that a well trained staff exhibit high level of productivity which leads to the achievement of organizational goals.
Research Question two and hypothesis two findings indicates that access, educational development impact on work force planning meaning that access, equity, quality and relevance of educational development identities potential talents that improves work efficiency, this findings is in line with

Ijebola et al (2020) who stated that organizations that prioritize employee development through access and quality education tend to have better job satisfaction and seduce turn over rates.
However hypothesis three findings revealed that job employees fit significantly moderate the relationship between educational development and work force planning in manufacturing firms in Rivers State. The findings of the study is in agreement with Kristol-Brown et al (2005) who inferred that employee skill and ability align job performance which tend to exhibit higher level of job satisfaction, productivity, and organizational commitment. The implication is that employees who acquired higher skill performed better that those who do not have skills.

CONCLUSION

Educational development and work force planning in manufacturing firms are crucial for ensuring long term success and sustainability. Modern manufacturing firms depends more on building teams that can handle complex technology. This building process requires acquisition of requisite knowledge and skills that creates an operation that adapts quickly to changing market demands. In view of this, the study concludes that there is a significant relationship between educational development and work force planning in manufacturing firms in Rivers State. Indicating that a good educational background, enhances efficient work force planning in any organization.

RECOMMENDATIONS

The study recommends thus:

1. There is need fir Government to adopt economic blue print that will help manufacturing firms perform better and contribute meaningfully to the society.

2. Irrespective of economic recession the manufacturing sector is falling, it should get business directions right and avoid undesirable cost that are associated with high staff turnover.

3. Staff of manufacturing firms should be encouraged to attend trainings and seminars that will improve their productivity

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