PROJECT AND RESOURCE MANAGEMENT COMPETENCIES FOR SUSTAINABLE JOB CREATION IN WOOD-BASED MICRO AND SMALL-SCALE ENTERPRISES IN NIGERIA

Shuaibu Saminu[1], Hassan A.M.[2], Kareem W.B.[3] Mohammed B.M.[4]
Department of Technical Education, Faculty of Education,
Northwest University, Kano[1]
Department of Industrial and Technology Education,
Federal University of Technology, Minna[2,3,4]
Shuaibu772@gmail.com
08036933849

Abstract

This study investigated the project and resource management competencies required for sustainable job creation in wood-based Micro and Small-Scale Enterprises (MSEs) in Nigeria. A cross-sectional survey research design was employed to collect data from a representative sample of 229 respondents comprising woodwork lecturers, teachers, and enterprise owners across the North-West geopolitical zone of Nigeria. Data were collected using a researcher-developed questionnaire structured on a five-point rating scale, with 13 items focused on project management competencies and 14 items on resource management competencies. The instrument's validity was confirmed by experts in Technology and Vocational Education, while reliability tests conducted in Bauchi State yielded Cronbach's Alpha coefficients of 0.821 and 0.832, indicating high internal consistency. Data analysis involved the use of Mean statistics to answer the research questions and Analysis of Variance (ANOVA) to test the null hypotheses at a 0.05 level of significance. The findings revealed that essential project management competence skills for sustainable job creation include resource planning and utilization, personnel engagement, integration of process and technology, adherence to standards, and the application of relevant knowledge, skills, and foresight in project execution. Similarly, critical resource management competencies identified include effective scheduling and supply of materials, proper inventory control, strategic workforce deployment, planning for skill development, fostering interpersonal relationships, and aligning resource functions with enterprise growth objectives. The results also showed no significant difference in the mean responses of lecturers, teachers, and entrepreneurs regarding the required project and resource management competence skills. Based on these findings, the study recommended that technical and vocational training institutions collaborate with relevant government agencies to develop practical training programs that equip MSE operators with the competencies necessary for effective project and resource management. Strengthening these competencies is essential for improving enterprise sustainability, enhancing productivity, and creating sustainable job opportunities within Nigeria's wood-based MSE sector.

Keywords: Project Management, Resource Management, Competence Skills, Wood-Based Enterprises, MSEs, Sustainable Job Creation

Introduction

Micro and Small-Scale Enterprises (MSEs) have been widely acknowledged as critical drivers of economic growth, employment generation, and poverty alleviation in developing nations, with Nigeria being no exception. These enterprises promote the production of goods and services, create jobs, and contribute significantly to national income, thereby supporting the country's economic advancement (Holcombe, 2017). The World Bank classifies micro enterprises as those employing one to nine persons, while small enterprises are those with a workforce ranging from ten to forty-nine individuals (World Bank, 2022). Among these, wood-based MSEs have become a vital source of employment, providing opportunities for

self-reliance and economic empowerment, particularly for technical college graduates and other skilled individuals engaged in the production of wood products for domestic and commercial use (Bhavani, 2016; Adedokun *et al.,* 2005).

Despite their enormous potential, the contribution of wood-based MSEs to sustainable job creation in Nigeria remains largely underdeveloped. Available reports indicate that nearly 80% of small and medium enterprises in Nigeria collapse within the first five years of operation (SMEDAN, 2015). Scholars such as Olabiyi and Uzoka have pointed to factors such as weak management structures, poor planning, and ineffective resource utilisation as major contributors to this high failure rate. In particular, the absence of essential management competencies, especially in project and resource management, continues to undermine the sustainability and job creation capacity of wood-based enterprises across the country.

Project management has been described as a systematic process that involves planning, organising, and coordinating resources to achieve defined objectives efficiently (Laslo, 2010; Vidal & Marle, 2008). Within the wood-based enterprise sector, project management competencies are indispensable for coordinating personnel, materials, and technology to meet production deadlines and ensure customer satisfaction. As Smith and Jones (2022) highlighted, failure to develop these competencies often results in production delays, uncertainty, and resource wastage, all of which threaten enterprise performance and survival. Roy (2007) similarly emphasised that the fragility of project requirements and inadequate control mechanisms contribute significantly to the failure of small projects, particularly in technical sectors such as wood-based production.

Closely related to project management is resource management, which refers to the systematic planning, acquisition, allocation, and control of material, human, and financial resources required for enterprise operations (Anyadike, 2014). According to Armstrong, beyond simply identifying available resources, entrepreneurs must possess the skills to allocate and manage them effectively to enhance productivity and sustain operations. In wood-based enterprises, where access to quality raw materials, effective workforce mobilisation, and sound inventory management are central to production efficiency, resource management competencies are essential for ensuring enterprise sustainability (Smith & Jones, 2022).

Unfortunately, many wood-based MSEs in Nigeria operate without a structured management framework to guide project execution and resource utilisation. Moon and Desouza (2011) noted that the absence of formal management structures within small enterprises often leads to operational inefficiencies, while Mintzberg (2009) underscored the need for managers to understand how to coordinate action, people, and information effectively. Without these competencies, the ability of wood-based enterprises to survive, grow, and create sustainable jobs remains severely constrained. In response to these challenges, this study sought to identify the specific project and resource management competencies required for sustainable job creation within wood-based MSEs in Nigeria.

Statement of the Problem

Wood-based Micro and Small-Scale Enterprises (MSEs) are globally acknowledged as a major pillar for socio-economic development, wealth creation, and job opportunities in both developing and developed nations (MMSEs Survey, 2017). These enterprises play a significant role in employment generation, income redistribution, and poverty alleviation. Despite their immense economic contributions, the survival and growth of wood-based MSEs, particularly in Nigeria, remain a concern for policymakers, practitioners, and researchers alike. Globally, micro and small enterprises account for almost 90% of businesses (Gherghina *et al.,* 2020), while in Nigeria, over 41 million such enterprises employ nearly 60 million people, contributing about 50% to the nation's Gross Domestic Product (NBS, 2019).

However, available evidence reveals that most MSEs in Nigeria, especially those within the wood-based sector, fail to survive beyond the first five years of operation (MSEsDAN, 2015; Olatutu, 2021).

This alarming failure rate has been largely attributed to deficiencies in essential management competencies required for sustaining enterprise growth. Notably, poor project and resource management skills hinder the capacity of these enterprises to plan, organize, utilize resources effectively, and drive sustainable job creation. Without the requisite project management competencies, such as resource planning, personnel engagement, and integration of technology, alongside sound resource management practices, including effective material scheduling, workforce deployment, and skill development, these enterprises remain vulnerable to stagnation and collapse. This situation not only results in the continuous closure of wood-based MSEs but also contributes to high unemployment rates, reduced revenue generation, and loss of job opportunities in Nigeria. Therefore, it has become imperative to examine the project and resource management competencies necessary for sustainable job creation in wood-based MSEs in Nigeria.

Aim and Objectives of the Study

The aim of the study was to investigate the project and resource management competencies necessary for sustainable job creation in wood-based MSEs in Nigeria. Specifically, the objectives of the study were to determine the:

1. Project Management Competence for Sustainable Job Creation in Wood-Based MSEs in Nigeria
2. Resource Management Competence for Sustainable Job Creation in Wood-Based MSEs in Nigeria

Research Questions

The following research questions were raised and answered:

1. What are the project management competence skills required for sustainable job creation in wood-based MSEs in Nigeria?
2. What are the resource management competence skills required for sustainable job creation in wood-based MSEs in Nigeria?

Hypotheses

The following null hypotheses were formulated and tested at .05 level of significance:

H_{01}: There is no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the project management competence skills required for sustainable job creation in MSEs in Nigeria.

H_{02}: There is no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the resource management competence skills required for sustainable job creation in MSEs in Nigeria.

Methodology

The study adopted a cross-sectional survey research design to collect relevant data from a wide range of respondents at a single point in time. This design was considered appropriate because it enabled the researcher to elicit information from different categories of stakeholders involved in wood-based MSEs in Nigeria. The study was conducted in the North-West geopolitical zone of Nigeria. The population for the study consisted of 536 respondents, including 26 woodwork lecturers from Colleges of Education, 12 woodwork lecturers from Universities, 76 woodwork teachers from Technical Colleges, and 422 owners of wood-based MSEs within the study area. From this population, a representative sample of

229 respondents was determined using Yaro Yamane's statistical formula at a 0.05 level of precision.

Data collection was carried out using a researcher-developed questionnaire. The questionnaire consisted of two sections designed to collect data on project management competence skills and resource management competence skills. It was structured on a five-point rating scale of Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1), and No Opinion (0). The instrument contained 13 items for project management competence and 14 items for resource management competence. To ensure the validity of the instrument, three experts from the field of Technology and Vocational Education were consulted to review the items for relevance, clarity, and alignment with the research objectives. For reliability, a pilot test was conducted in Bauchi State, which falls outside the study area, involving 35 respondents consisting of subject matter experts, college lecturers, technical teachers, and wood-based enterprise owners. The reliability of the instrument was established using Cronbach's Alpha, which yielded coefficients of 0.821 and 0.832. These values indicated high internal consistency and suitability of the instrument for the main study.

Data collection was carried out by the researcher with the assistance of seven trained research assistants. The assistants were adequately trained on the study objectives, the administration of the questionnaire, and ethical considerations to ensure uniformity and accuracy in the data collection process. The administration and retrieval of the questionnaires were completed within one week. Data analysis was performed using the Statistical Package for Social Sciences (SPSS) version 27. The research questions were answered using Mean statistics, with the decision rule based on the real limits of numbers. Analysis of Variance (ANOVA) was employed to test the two null hypotheses at a 0.05 level of significance. A 2-tailed significance value greater than 0.05 indicated no significant difference in the mean responses among lecturers, teachers, and entrepreneurs, while a value less than 0.05 indicated a significant difference.

Research Question 1

What are the project management competence skills required for sustainable job creation in wood-based MSEs in Nigeria? The results for answering research question one are presented in Table 1.

Table 1: Mean and standard deviation of respondents' responses on the project management competence skills required for sustainable job creation in wood-based MSEs in Nigeria

S/N	Items	Mean	SD	Decision
1.	Ability to plan effective utilization of resources for successful project execution.	3.65	.93	Agreed
2.	Ability to organize and control project resources efficiently.	3.71	.89	Agreed
3.	Ability to engage personnel effectively for timely project accomplishment.	3.71	.88	Agreed
4.	Ability to coordinate effective interpersonal interactions within project teams.	3.61	.96	Agreed
5.	Ability to harmonize processes and technology in project execution.	3.62	.97	Agreed
6.	Ability to apply command strategies for efficient project delivery.	3.74	.87	Agreed
7.	Ability to follow and enforce project best practices.	3.76	.87	Agreed
8.	Ability to adhere to and ensure compliance with project	3.64	.95	Agreed

	standards.			
9.	Ability to implement project guidelines consistently.	3.58	1.02	Agreed
10.	Ability to apply relevant knowledge and skills in executing project tasks.	3.65	.93	Agreed
11.	Ability to provide supportive cultural environments for project success.	3.71	.89	Agreed
12.	Ability to adopt relevant project methodologies based on project type.	3.71	.88	Agreed
13.	Ability to apply foresight and insight in project system management.	3.62	.94	Agreed
	Grand Mean	**3.67**	**.93**	**Agreed**

Table 1 shows the mean and standard deviation values of respondents' responses on the project management competence skills required for sustainable job creation in wood-based MSEs in Nigeria, with mean values ranging between 3.58 and 3.76, and standard deviation values between 0.87 and 1.02, with a grand mean value of 3.67 and a standard deviation of 0.93. These values indicated that the respondents generally agreed that all the listed project management competence skills are required for sustainable job creation in wood-based MSEs in Nigeria.

Research Question 2

What are the resource management competence skills required for sustainable job creation in wood-based MSEs in Nigeria? The results for answering research question two are presented in Table 2.

Table 2: Mean and standard deviation of respondents' responses on the resource management competence skills required for sustainable job creation in wood-based MSEs in Nigeria

S/N	Items	Mean	SD	Decision
6.	Ability to schedule material purchases appropriately.	3.63	.95	Agreed
7.	Ability to ensure the timely supply of materials.	3.74	.87	Agreed
8.	Ability to implement effective material receiving processes.	3.76	.87	Agreed
9.	Ability to coordinate transportation of materials efficiently.	3.64	.93	Agreed
10.	Ability to manage inventory accurately within the enterprise.	3.58	1.00	Agreed
11.	Ability to identify and make materials available for production on time.	3.65	.93	Agreed
12.	Ability to utilize human resources judiciously.	3.71	.89	Agreed
13.	Ability to assign responsibilities based on human resource strengths.	3.71	.88	Agreed
14.	Ability to mobilize the workforce to meet production targets.	3.71	.88	Agreed
15.	Ability to plan strategically for acquiring current and future job-related skills.	3.76	.87	Agreed
16.	Ability to build positive interpersonal and social relationships within the enterprise.	3.63	.95	Agreed
17.	Ability to develop employees' dedication and capacity for competitive advantage.	3.61	.99	Agreed
18.	Ability to manage individual and organizational development effectively.	3.65	.93	Agreed

19.	Ability to perform strategic functions in enterprise resource planning.	3.71	.89	Agreed
	Grand Mean	**3.68**	**.92**	**Agreed**

Table 2 shows the mean and standard deviation values of respondents' responses on the resource management competence skills required for sustainable job creation in wood-based MSEs in Nigeria, with mean values ranging between 3.58 and 3.76, and standard deviation values between 0.87 and 1.00, with a grand mean value of 3.68 and a standard deviation of 0.92. These values indicated that the respondents generally agreed that all the identified resource management competence skills are essential for promoting sustainable job creation in wood-based MSEs in Nigeria

Hypothesis One

There is no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the project management competence skills required for sustainable job creation in MSEs in Nigeria. The results for testing hypothesis one are presented in Table 3.

Table 3: Analysis of Variance for the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the project management competence skills required for sustainable job creation in MSEs in Nigeria

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.453	2	1.726	2.005	.137*
Within Groups	194.599	226	.861		
Total	198.052	228			

Table 3 shows the Analysis of Variance (ANOVA) results for the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs on the project management competence skills required for sustainable job creation in wood-based MSEs in Nigeria, with an F-value of 2.005 and a significance value of 0.137. These values indicated that there is no significant difference among the mean responses of the groups on the required project management competence skills.

Hypothesis Two

There is no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the resource management competence skills required for sustainable job creation in MSEs in Nigeria. The results for testing hypothesis two are presented in Table 4.

Table 4: Analysis of Variance for the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the resource management competence skills required for sustainable job creation in MSEs in Nigeria

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.014	2	1.007	1.286	.278*
Within Groups	176.964	226	.783		
Total	178.978	228			

Table 4 shows the Analysis of Variance (ANOVA) results for the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs on the resource management competence skills required for sustainable job creation in wood-based MSEs in Nigeria, with an F-value of 1.286 and a significance value of 0.278. These values indicated that there is no significant difference among the mean responses of the groups on the required resource management competence skills.

Findings

1. Key project management competence skills required for sustainable job creation in MSEs in Nigeria include resource planning and utilization, personnel engagement, integration of process and technology, adherence to standards, and the application of relevant knowledge, skills, and foresight in executing projects effectively.
2. There was no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the project management competence skills required for sustainable job creation in MSEs in Nigeria.
3. Key resource management competence skills required for sustainable job creation in MSEs in Nigeria include effective scheduling and supply of materials, proper inventory control, strategic workforce deployment, planning for skill development, fostering interpersonal relationships, and aligning resource functions with enterprise growth objectives.
4. There was no significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the resource management competence skills required for sustainable job creation in MSEs in Nigeria.

Discussion of Findings

Findings on the project management competence skills required for sustainable job creation in MSEs in Nigeria revealed that resource planning and utilization, personnel engagement, integration of process and technology, adherence to standards, and the application of relevant knowledge, skills, and foresight in executing projects effectively are the core capabilities needed. This insight highlights the complex and integrative nature of project management in wood-based MSEs, where aligning human resources, material inputs, and operational procedures is crucial for achieving job creation and sustainability. This result reveals the operational realities of small-scale enterprise leadership, where the competence to design and execute structured projects can determine long-term viability. It supports Banjo *et al*. (2017), who noted that enterprises equipped with strong planning and execution capabilities were better positioned to foster employment growth and operational success. Adedokun *et al*. (2005) similarly emphasized that in the Akure wood-processing sector, project coordination and effective resource use significantly contributed to economic development. Manish (2016) further adds that institutionalizing project and quality management practices helps smaller firms achieve measurable performance gains. Unlike the findings of Ekhuemelo *et al*. (2017), which highlighted weak management practices in Gboko's wood enterprises due to informality and poor exposure to modern tools, this present study reflects increasing formalization and competence among MSEs. A plausible explanation for this positive development is the rise in vocational training programs, government-led enterprise support schemes, and growing market demand for quality-driven service delivery. The implication here is that promoting project management skills in wood-based MSEs could act as a catalyst for increasing their productivity and enhancing their role as engines of sustainable employment. Thus, enterprise development policies and educational interventions should prioritize the integration of these competencies within capacity-building frameworks.

In addition, the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the project management competence skills required for sustainable job creation in MSEs in Nigeria revealed that there was no statistically significant difference. This finding indicates a shared understanding among these stakeholders regarding the essential managerial skills needed for effective project delivery in the wood sector. This convergence supports the conclusions of Nwite (2019), who noted that entrepreneurial education in Nigerian tertiary institutions increasingly mirrors industry needs and expectations. It also resonates with Oluwabusolami (2021), who found that collaboration between educational and business stakeholders enhances innovation and adaptation in small enterprises. Aiyeloja *et al*. (2022) also confirmed that such alignment in the wood-based sector fosters consistent standards and improved productivity. By contrast, Mohammed *et al*. (2021) reported disconnections between theoretical instruction and practical application in MSEs management, which this study appears to counter, suggesting that stakeholder perspectives are becoming increasingly harmonized. The implication of this alignment is noteworthy; it not only validates the proposed project management competencies but also signals readiness for their institutionalization in formal education and enterprise development programs. It reinforces the importance of stakeholder collaboration in curriculum design and in shaping policy that reflects practical business realities. Ultimately, this agreement lays the groundwork for scaling up management training that is both contextually relevant and widely endorsed within Nigeria's wood-based MSE ecosystem.

Findings on the resource management competence skills required for sustainable job creation in MSEs in Nigeria revealed that effective scheduling and supply of materials, proper inventory control, strategic deployment of human resources, continuous planning for workforce skill development, and fostering of positive interpersonal relationships are critical components. This finding highlights that sustainable job creation in the wood-based sector depends not only on operational efficiency but also on the ability of MSEs to anticipate workforce needs and maintain harmonious internal dynamics. This outcome supports the findings of Adedokun *et al*. (2005), who reported that the performance of wood-based enterprises in Ondo State was strongly influenced by their ability to plan resource use effectively. Similarly, Ekhuemelo *et al*. (2017) found that resource management practices, especially inventory control and workforce engagement, significantly contributed to the viability of wood-based businesses in Gboko, Benue State. Moreover, the emphasis on human resource optimization and skills development is consistent with Nwite (2019), who emphasized the importance of entrepreneurial education in equipping individuals with the competencies needed to manage resources and create employment opportunities post-graduation. Unlike earlier studies such as James (2015), which emphasized the financial impact of small-scale enterprises without detailing internal operational practices, this study brings to the fore the interdependence of material flow, labor efficiency, and enterprise growth. A possible reason for this difference is the evolving operational landscape of MSEs, where material scarcity, high labor costs, and skill gaps necessitate a more comprehensive resource strategy. Olatutu (2021) similarly pointed out that survival strategies among Nigerian micro-enterprises increasingly depend on internal capacity to manage both human and physical assets effectively. The implication of this finding is that any management competence framework targeting MSEs in the wood sector should integrate practical strategies for inventory control, material logistics, and staff development. It suggests that training programs should not be limited to technical skills but must also include modules on interpersonal management and strategic resource alignment to boost enterprise sustainability and job creation potential.

In addition, the test of significant difference among the mean responses of lecturers, teachers, and entrepreneurs in the wood-based sector on the resource management competence skills required for sustainable job creation in MSEs in Nigeria revealed no statistically significant variation. This indicates a unified perception among the various respondent categories on the relevance and importance of resource management skills in the context of sustainable enterprise operation. This finding aligns with that of Alu Chituru *et al*. (2022), who reported broad stakeholder agreement on budgeting and operational practices necessary for MSEs sustainability. It also resonates with Mohammed *et al*. (2021), who found that resource-related challenges are universally acknowledged as critical barriers to MSEs performance across sectors. The convergence of perspectives implies that the identified competencies are not only theoretically sound but also practically endorsed by those involved in both the educational and business aspects of wood-based enterprise development. In summary, the shared understanding of resource scheduling, inventory accuracy, workforce mobilization, and developmental planning as key drivers of sustainability confirms their essential role in the proposed management competence framework. This uniformity in perception among stakeholders enhances the credibility of the framework and supports its application in capacity-building efforts aimed at improving employment outcomes and operational resilience among wood-based MSEs in Nigeria.

Conclusion

This study has provided empirical insights into the project and resource management competencies required for sustainable job creation within wood-based MSEs in Nigeria. The findings revealed that project management competence skills such as effective resource planning and utilization, personnel engagement, integration of processes and technology, strict adherence to standards, and the application of relevant knowledge and foresight are essential for ensuring the sustainability and growth of these enterprises. Similarly, resource management competence skills, including timely scheduling and supply of materials, proper inventory control, strategic workforce deployment, continuous skill development, and alignment of resources with enterprise objectives, are crucial for achieving sustainable operations. The study also established that there was no significant difference among the mean responses of lecturers, teachers, and entrepreneurs on these required competencies, suggesting a consensus among key stakeholders regarding the management skills needed to drive sustainable job creation in the sector. These findings underscore the need to strengthen capacity-building efforts and integrate these competencies into vocational training and enterprise development initiatives to enhance the performance and sustainability of wood-based MSEs in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Technical and vocational training institutions, in collaboration with the Ministry of Labour and Employment, should train enterprise owners and prospective entrepreneurs in resource planning and utilization, personnel engagement, integration of process and technology, adherence to standards, and applying knowledge, skills, and foresight through hands-on project management modules.
2. The Industrial Training Fund (ITF), local government enterprise support departments, and cooperative unions should organize enterprise clinics and training sessions focused on effective scheduling and supply of materials, inventory control, strategic workforce deployment, skill development, interpersonal relationship building, and aligning resource functions with enterprise growth objectives.

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