

Models for the Sustainability of World Bank-Assisted Development Projects in Nigeria

Echeme, Ibeawuchi Ifeanyi¹
Okwara Ihuoma, Deborah²
Okangba, Stanley³

1. Ag. Head, Department of Project Management Technology, Federal University of Technology, Owerri, Nigeria.
2. Department of Project Management Technology, Federal University of Technology, Owerri, Nigeria.
3. Research Fellow, University of the Witwatersrand, Johannesburg; South Africa

Corresponding Author: **Dr. Echeme Ibeawuchi Ifeanyi**

Abstract

Issues: The sustainability of World Bank-assisted development projects in Nigeria is very low. This has affected the socio-economic development of the country and the wellbeing of the citizens. Insecurity, training, ownership, funding, etc. were highlighted as constraints. **Methods:** The study objectives are to: determine the key elements that constrain the sustainability of World Bank-assisted development projects in Nigeria; ascertain the variables that contribute to the sustainability of World Bank-assisted development projects in Nigeria. The study used descriptive Survey design. Primary data were collected via the Questionnaire. Multiple Discriminant Analysis and Analysis of Variance were adopted in analyzing the collected data. **Findings:** The study results show that: funding is the only element that can constrain the sustainability of World Bank-assisted projects; Users training, research consideration in policy making, funding, ownership, project monitoring, sustainability costs, insincerity and insecurity level contribute to the sustainability of World Bank assisted development projects in Nigeria. **Conclusions:** Sufficient and steady funding, because funding is like an oil that removes clogs in the wheel of sustainability of projects; The Federal Government of Nigeria (FGN) and the World Bank should put more efforts on Research & Development (R&D) to fashion out the best method that will improve the rate of implementation and sustainability of development projects for national development; and strict implementation of Community Driven Development approach as contained in the World Bank Project Implementation Policy and Programmes is advocated. However, the study generated Fisher's Discriminant models to serve as the Project Sustainability Profile (PSP) for the sustainability management of the World Bank-assisted projects in Nigeria and the conceptual framework was modified based on the findings made in this study.

Keywords: 1. World Bank-assisted projects, 2. Development Projects, 3. Project Sustainability Management, 4. Funding, Beneficiaries.

1.0 Introduction

Development initiatives supported by the World Bank are carried out for the socioeconomic good of the people at little or no expense. But despite the fact that these initiatives are meant to benefit the public for a long time, the majority of them cease to function soon after handover and commissioning. As a means of achieving the Sustainable Development Goals (SDGs) in developing nations, including Nigeria, project sustainability management is currently dominating most national and international conversations. (1) defines project sustainability as an instance in which the demands made on the project by the users can be met without impeding the ability of the project to meet the expectations of subsequent users. As a result, a project's goods and services must be sustainable. Hence, for a project to be sustainable, its products and services should be made available not for a short-term duration, rather in a long term so that the project can assist in improving the socio-economic wellbeing of the people, reduce illiteracy, cost of distribution, rural/urban migration, etc. (2).

Governments and various Non-Governmental Organizations (NGOs) like the World Bank, United Nations, etc. have been working hard to improve Nigeria, especially the rural communities, in order to achieve the SDGs (3). The level of financial instability is still rising; therefore, it is still unclear to what extent these initiatives have changed the socioeconomic wellbeing of the people over the long run. In order to create a model that will aid in reaching the necessary sustainability and developmental goals through the World Bank-assisted projects in Nigeria, it is crucial to evaluate the numerous factors that affect the sustainability of World Bank-assisted projects. In order to develop a model that will assist in achieving the desired sustainability and developmental goals via the World Bank-assisted projects in Nigeria.

According to recent studies, there has been widespread worry about the appalling sustainability level of development projects in Nigeria and the extent of underdevelopment they have caused. It has been attributed by numerous scholars to subpar sustainability management techniques used in developing nations, emphasizing inadequate administrative and technical capabilities to carry out and sustain development programs (4; 5; 6). Nigeria's situation has grown more concerning because the nation continues to experience a high level of insecurity and volatility in her development processes. Since these problems with insecurity and instability have persisted for so long, it appears that the nation's capacity to support initiatives has been debilitated (7). It is crucial to remember that the issue of project sustainability as a strategy for rural development in line with national development cannot be treated in absolute terms; instead, more emphasis should be placed on the causal factors, of which insecurity and inadequate funding seem to be a crucial composite measure (8). The issue is whether these two components— insecurity and funding—are the sole ones that cause conflict. Arguments from a variety of sources claim that insecurity, erratic government policies, and a high degree of citizen and government dishonesty frequently lead to issues and reduce the durability of development programs in Nigeria (9). The World Bank and the Federal Government of Nigeria (FGN) have been working together to implement development projects in order to achieve the desired development through sustainability of those programs. To address the issue of sustainable development in Nigeria, the World Bank has also developed a number of country development organizations, including the Local Empowerment and Environmental Management Projects (LEEMP), Community and Social Development Projects (CSDP), and Fadama project. These World Bank organizations seek to improve the social and economic well-being of the populace by bolstering rural areas through the provision of infrastructure (10). According to Wilton's study from 2020, one of the main responsibilities of the World Bank and other governments is to finance and create the conditions that would contribute to the improvement of the socioeconomic well-being of the general public. This improvement can be made if projects are successfully carried out and maintained, particularly in rural areas. (7) assert that rural poverty, illiteracy, and low maintenance culture are significant barriers to the implementation and durability of development programs in Nigeria and other developing countries.

Unquestionably, the World Bank Group has allocated a significant amount of funding for the implementation and upkeep of numerous development projects in order to help the FGN reach its developmental objectives. Due to the low sustainability level of the micro projects, it appears that these significant resources were unable to aid the government in attaining the desired development up until this point. As a result, the rural poor have not yet benefited from such interventions or assistance. However, the majority of these micro-projects have been shelved due to

sustainability issues that prevented them from providing long-term benefits to the beneficiaries. By creating the "ten-factor model" to serve as a project implementation profile in the past, (11) and (12) highlighted several factors that can help with project implementation (PIP). Unfortunately, the factors that influence project delivery, maintenance, and sustainability in rural areas of developing nations like Nigeria were not taken into account by their model. (3) assert that this ten-factor model has been used as the project implementation profile for the majority of World Bank projects, explaining the reason for the programs' persistently poor implementation and sustainability in Nigeria.

It is against this background that this research is set to re-examine the problem and identify the sustainability challenges based on the realities and nature of the rural communities in Nigeria. The study analyzed these sustainability challenges of development projects in the remote rural communities that are associated with high level of illiteracy, poverty, low maintenance culture and low development mentality. Base on the relevant past researches, this study seeks to develop models that will serve as project sustainability profile (PSP) for World Bank-assisted development projects in Nigeria.

Content analysis through the literature review indicates that; users training, research consideration in policy making, funding, ownership, project monitoring, sustainability costs, insincerity and insecurity level are the major elements that associated with sustainability of World Bank assisted development in Nigeria.

Relevant writers like (13) investigated sustainability aspects: a true approach to road maintenance, but their research was unable to identify the factors that need to be prioritized for sustainability improvement. A different study by (14) asserts that project sustainability should be sought as a system, but the study did not make a distinction between the factors that are favorable or unfavorable to project sustainability. For reaching a high level of project sustainability in Africa, (2) once again produced a model known as the Total Management model. The model, however, was unable to identify the factors that must be taken into account to increase the sustainability of development programs. (15) also looked into the variables influencing project sustainability in Kenya's Nairobi City County's non-governmental organizations. Unfortunately, they were unable to identify the elements that lead to NGOs' projects in Kenya remaining viable. (16) attempted to separate the elements that can assist project sustainability from those that cannot by using a system dynamics approach to the sustainability factors. The recommendations of these authors, however, were unable to improve Nigeria's development initiatives' enduringly poor level of sustainability. Therefore, the goal of this study is to assess the issue and create a predictive model that can quantify sustainability factors and identify those that support or detract against the sustainability of World Bank-funded development projects in Nigeria.

2.0 Literature Review

In 1987, Brundt and created the idea of sustainable development, which states that human civilizations must exist and satisfy their own needs without harming the capacity of future generations to satisfy their own needs. The Brundt and definition establishes the ethical principle of realizing fairness between the current and future generations and is based on the long-term component of the sustainability concept. In particular, sustainable development is a strategy for structuring society in a way that will allow it to endure over the long haul. It cannot be underlined enough that the rate of growth of any nation depends on the rate at which rural areas improve thanks to effective project planning and execution. However, if rural initiatives are successfully carried out and maintained, the ideal level of national development can be attained (3). It is important to note that the World Bank collaborates with the Federal Government of Nigeria through its development organizations in order to achieve the necessary development in the nation.

The Community Driven Development (CDD) approach was created and embraced by (17) in order to ensure the success and sustainability of World Bank initiatives. The strategies of CDD give World Bank-assisted project beneficiaries the chance to actively participate in the execution and sustainability of development projects in their community by taking the lead in: Determining and prioritizing their needs; Deciding and preparing the micro projects necessary to address the identified needs; co-funding the small-scale projects; Continue to run and maintain the microprojects to ensure their sustainability; Teach people to take care of themselves so that their capacities grow;

The active involvement of beneficiaries in every stage of the microproject cycle ensures ownership of the programs. The World Bank Group recognizes the necessity for microproject sustainability, as suggested by the CDD approach.

2.1 Conceptual Framework

The conceptual framework used in this study acknowledges the possibility of independent or dependent variables. The sustainability of development projects supported by the World Bank is the dependent variable. Users' training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity and level of insecurity are the independent variables.

Following the above explanations, the conceptual framework for this study is as follows;



Fig. 1: Conceptual Framework

2.2 Theoretical Review

This study is based on the systems theory by Ludwig von Bertalanffy, and contingency theory by Fred Fielder.

Systems Theory

The fundamental tenet of a system is that the whole is greater than the sum of its parts, which aids in the development of strategies to maintain the system's advantages (Sang, 2015). A system is a collection of two or more

interconnected variables, each of which affects how the system as a whole function (18). However, if an outside organization does not objectively support the system, it will not work. So, in order to maintain the system's structure and functionality, there must be well-planned and coordinated actions (19). Other concepts related to project management emerged as a result of the development of systems theory, such as the open and closed input-output analyses created by Wassily Leontief in the 1930s (20). Thus, as stated by Ludwig von Bertalanffy, the father of systems theory, the environment of project management fits within a system (20). Sustainability has emerged as a crucial issue because achieving successful results is any organization's primary goal when starting a project. Since the project's stated aim is to have a good impact on the environment, the systems theory is applicable to this study because such an impact can only be felt if the project's results are sustainable.

Contingency Theory

Through the contingency theory of efficacy, Fred Fielder first put forth this hypothesis in the early 1960s. The premise of contingency theory is that any situation's outcome depends on the needs of that circumstance at any given moment (15). No project can be thoroughly studied without taking into account its surroundings (21). However, as contingency theory cannot adequately address the vast majority of factors that can influence an event, it should be used with caution. This study is based on contingency theory, where projects are thought of as unique and their sustainability is affected by several elements depending on the contextual circumstances of the country. The sustainability of these multiple projects is thought to be decided by individual circumstances in various nations given that projects are temporary endeavors embarked upon for a specific aim and given that the World Bank development projects exist in many countries. Therefore, it is determined that contingency theory is pertinent to our investigation. Additionally, depending on their context, projects face a variety of problems (22). It is important to note that some projects are sustainable while others are not. The challenge is to identify the key factors that have the greatest influence on a project's sustainability, especially development programs in Nigeria supported by the World Bank.

3.0 Objectives of the Study

The major goal is to create a framework for Nigerian development projects with World Bank assistance. The particular goals are to:

- i. identify the major factors that limit the sustainability of development initiatives supported by the World Bank in Nigeria;
- ii. identify the factors that support the sustainability of development projects supported by the World Bank in Nigeria.

3.1 Research Hypotheses

The following hypotheses have been put forth:

H01: Users' training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity, and level of insecurity do not limit the sustainability of World Bank-assisted development initiatives in Nigeria.

H02: The sustainability of World Bank-supported development projects in Nigeria is not impacted by user training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity, or security levels.

4.0 Method of the Study

This study used a survey design approach. The survey is intended to be both exploratory and observational. Understanding the competing factors that previously hampered project sustainability is made easier by the observational design (3). In order to determine the impact of the highlighted constraints on the sustainability of World Bank-assisted initiatives in Nigeria, a questionnaire was created using a 5-point Likert scale. The exploratory method was used to see how well the Multiple Discriminant Analysis (MDA) model might be used to analyze the

sustainability of development initiatives supported by the World Bank. Since we are aware of the multiple factors that are connected to project sustainability and have the potential to positively or negatively impact people's socioeconomic development, this has become critically important.

As a result, data from both primary and secondary sources were gathered for the study. The questionnaire serves as the primary source, and secondary sources for the data include official World Bank project reports and statistics, books, journals, internet searches, etc.

The study population is anticipated to consist of 430 participants in initiatives supported by the World Bank. They include members of the World Bank Project Support Team, Contractors, Consultants, leaders of Town Unions in the communities that will benefit from the projects, and those who will actually profit from them. The study sampled 207 respondents using the Taro Yamane sample size formula: $n = \frac{N}{1 + Ne^2}$, where N is the population size and e is the error margin (5%). Purposive sampling technique was used in this as well.

Additionally, according to the projects' geographic locations, the researchers chose two (2) World Bank projects from the Federal Capital Territory (Abuja) and seven (7) World Bank-assisted projects from each of Nigeria's six (6) geopolitical zones. As a result, the study sampled forty-four (44) micro projects, 13 of which were sustainable, and 31 of which were not, using purposive sampling. The assessments were therefore based on the degree of sustainability of 44 microprojects supported by the World Bank.

The five-point Likert scale questionnaire design was used as the research instrument for the study. (23), assert that the Likert summed scale is a list of statements related to the variables, with each statement requiring the respondents to indicate whether they agree or disagree. Each level of agreement or disagreement is given a numerical score. The overall score for each respondent was calculated by adding the scores from each of the statements. However, (24) claim that behavior is complex and challenging to evaluate since people often appear to make poor judgments in trying circumstances. Therefore, the Likert scale, which improves attitude measurement, is ideal.

Reliability Test

The test-retest method was employed. In this instance, fifteen respondents from the respondent group completed the questionnaire. After compiling their responses, the same respondents were given the identical instrument three weeks later. The reliability coefficient of Cronbach was used. The Cronbach's Alpha () coefficient of 0.826 when compared to the reliability criterion of 0.700 shows the validity of the study instrument utilized for data collection. In Table 1, the acronyms for the discovered variables that were used to create the study's model are listed.

Table 1 Description of the Identified Variables

S/No.	Variables	Acronyms
1	Users training	X ₁
2	Research Consideration	X ₂
3	Insecurity level	X ₃
4	Ownership/responsibility	X ₄
5	Monitoring	X ₅
6	Sustainability costs	X ₆
7	Funding	X ₇
8	Insincerity	X ₈
9	Sustainability of World Bank Development Projects	S
10	Unsustainability of World Bank Development Projects	U

Multiple Discriminant Analysis (MDA) Function and Analysis of Variance were used to analyze the data (ANOVA). The results of the MDA indicated the differentiating factors that limit or support the sustainability of projects supported by the World Bank.

Accept the null hypothesis if the p-value is smaller than the level of significance established for this investigation, which is 5%.

5.0 Data Analysis

207copies of the questionnaire were given out to the chosenrespondents. 178copies were correctly filled and returned showing a response rate of 86%. However, the 178 respondents’ scores were harmonized with the 44 micro projects selected for analysis.

Discriminant Analysis for Sustainability of World Bank-assisted Projects.

This study recognizes that development projects are either sustainable or not. Accordingly, a score of **1** for sustainability and **-1** for unsustainability of projects were adopted for the analysis (project sustainability = 1 and project unsustainability = -1).

Testing the Significance of Group Means

Equality of group means test whether the group means is statistically significant or not.

Table 2. Test of Equality of Group Means

Variables	Wilks' Lambda	F	df1	df2	Sig.
X ₁	.898	.105	1	42	.615
X ₂	.895	.234	1	42	.512
X ₃	.857	1.271	1	42	.193
X ₄	.881	.466	1	42	.363
X ₅	.844	2.172	1	42	.151
X ₆	1.010	.002	1	42	.843
X ₇	.828	3.801	1	42	.050
X ₈	.895	.169	1	42	.567

The findings of Table 2 show that the only variable that is significant at the 0.05 level of significance between the two group means is funding (X7) (sustainability and unsustainability of projects). The consequence is that finance is the only factor that distinguishes between the two groups of project status among all the variables emphasized in describing the sustainability and unsustainability of World Bank-assisted projects. The results show that, as a result of "poor finance," the majority of NGOs, including the World Bank, whose mission is to reduce poverty through the implementation of sustainable initiatives, have not yet succeeded in Nigeria. In their research, Akpan et al. (2017) supported this conclusion.

Table 3 Discriminant Analysis of World Bank-assisted Projects (Case-wise)involving All the Variables

Case Number	Actual Group	Highest Group					Second Highest Group			Discriminant scores
		Predicting Group	P	df	P(G= d)	Squared Mahalanobis Distance to Centroid	Group	P(G= d)	Squared Mahalanobis Distance to Centroid	
1	1	-1**	.302	1	.624	1.041	1	.235	.001	-.760
2	1	-1**	.583	1	.733	.032	1	.307	.723	.122
3	1	-1**	.35	1	.664	.104	1	.104	.061	.715

			3							
4	1	-1**	.17 2	1	.207	.033	1	.464	.187	-1.170
5	1	1	.16 8	1	.363	.122	-1	.231	.107	-2.201
6	1	-1**	.77 6	1	.502	1.014	1	.375	.001	-.738
7	1	-1**	.66 7	1	.811	.189	1	.135	2.062	.704
8	1	-1**	.22 9	1	.532	1.417	1	.431	.059	-.968
9	1	1	.56 4	1	.455	.231	-1	.485	2.302	-1.252
10	1	-1**	.42 5	1	.566	.755	1	.354	.021	-.588
11	1	1	.34 0	1	.609	.842	-1	.303	.004	-.663
12	1	-1**	.48 2	1	.645	.518	1	.315	.074	-.456
13	1	-1**	.65 6	1	.619	.355	1	.231	.157	-.334
14	-1	-1	.06 7	1	.714	2.359	-1	.215	6.950	-2.558
15	-1	-1	.43 4	1	.578	.540	1	.302	.033	-.530
16	-1	-1	.76 6	1	.745	.095	1	.135	1.620	.561
17	-1	-1	.57 5	1	.734	.282	1	.276	.212	-.261
18	-1	-1	.38 2	1	.286	.019	1	.064	.352	.568
19	-1	-1	.85 0	1	.656	.039	1	.234	.648	.072
20	-1	1**	.32 6	1	.650	.877	-1	.350	3.217	-1.690
21	-1	-1	.71 6	1	.722	.077	1	.238	.416	-.001
22	-1	-1	.08 4	1	.673	2.132	1	.087	6.776	2.056
23	-1	-1	.32 9	1	.638	.953	1	.372	.000	-.706
24	-1	-1	.25 5	1	.960	1.614	1	.062	5.197	1.536
25	-1	-1	.45 7	1	.376	.037	1	.114	.227	.071
26	-1	-1	.02 6	1	.916	5.759	1	.024	11.127	3.037

Innovations, Number 71 December 2022

27	-1	-1	.57 3	1	.839	.452	1	.116	2.504	.857
28	-1	-1	.47 8	1	.571	.584	1	.369	.028	-.563
29	-1	-1	.21 2	1	.960	1.637	1	.062	5.156	1.559
30	-1	-1	.57 8	1	.862	.278	1	.118	2.305	.797
31	-1	-1	.66 3	1	.732	.180	1	.248	.318	-.166
32	-1	-1	.47 4	1	.960	.502	1	.102	2.814	.985
33	-1	-1	.36 5	1	.273	.124	1	.157	.305	.616
34	-1	-1	.84 9	1	.754	.042	1	.176	1.626	.473
35	-1	-1	.27 1	1	.358	.010	1	.072	.043	.279
36	-1	-1	.95 7	1	.722	.006	1	.167	1.072	.309
37	-1	-1	.21 7	1	.506	1.641	1	.464	.092	-1.007
38	-1	-1	.54 5	1	.898	.354	1	.142	2.481	.857
39	-1	-1	.34 8	1	.655	.809	1	.355	.006	-.630
40	-1	-1	.37 4	1	.344	.002	1	.066	.381	.258
41	-1	-1	.50 2	1	.875	.462	1	.115	2.745	.923
42	-1	-1	.24 1	1	.945	1.347	1	.081	4.320	1.373
43	-1	-1	.87 9	1	.826	.962	1	.484	.061	-1.800
44	-1	-1	.60 9	1	.863	.125	1	.189	1.751	.606

**Misclassified Cases

Table 4 Classification Results^a

		ProjStatus	Predicted Group Membership		Total
			-1.00	1.00	
Original	Count	-1.00	28	3	31
		1.00	10	3	13
	%	-1.00	90.3	9.7	100.0
		1.00	76.9	23.1	100.0

Summary of Sustainability Prediction World Bank-assisted Development Projects

From Table 3, Table 5 was generated.

Table 5 Predicted World Bank-assisted Development Project Function (Coefficient)

Projects	Discriminant Function 1	Assessment
1	-.760	Unsustainable
2	.122	Sustainable
3	.715	Sustainable
4	-1.170	Unsustainable
5	-2.201	Unsustainable
6	-.738	Unsustainable
7	.704	Sustainable
8	-.968	Unsustainable
9	-1.252	Unsustainable
10	-.588	Unsustainable
11	-.663	Unsustainable
12	-.456	Unsustainable
13	-.334	Unsustainable
14	-2.558	Unsustainable
15	-.530	Unsustainable
16	.561	Sustainable
17	-.261	Unsustainable
18	.568	Sustainable
19	.072	Sustainable
20	1.690	Sustainable
21	-.001	Unsustainable
22	2.056	Sustainable
23	-.706	Unsustainable
24	1.536	Sustainable
25	.071	Sustainable
26	3.037	Sustainable
27	.857	Sustainable
28	-.563	Unsustainable
29	1.559	Sustainable
30	.797	Sustainable
31	-.166	Unsustainable

32	.985	Sustainable
33	.616	Sustainable
34	.473	Sustainable
35	.279	Sustainable
36	.309	Sustainable
37	-1.007	Unsustainable
38	.857	Sustainable
39	-.630	Unsustainable
40	.258	Sustainable
41	.923	Sustainable
42	1.373	Sustainable
43	-1.800	Unsustainable
44	.606	Sustainable
Net	0.004	

According to the findings in Tables 3 and 4, certain World Bank-supported initiatives that were first deemed to be sustainable were actually statistically unsustainable, and vice versa. To give an example, in the projected group analysis, ten out of the thirteen projects that were initially categorized as sustainable projects in the actual group were statistically unsustainable (see Table 3). Only projects 5, 9, and 11 have their sustainability statistically verified. On the other hand, only Project No. 20 proved to be sustainable in the anticipated group situation out of the 31 projects that were previously deemed unsustainable in the actual group. After conducting a case-wise research on 44 Nigerian development projects with World Bank assistance, this finding was made.

According to Table 5, 0.004 is anticipated for the sustainability level of World Bank-supported initiatives (see the Net Discriminant Function). This is incredibly low and cannot help Nigeria's socioeconomic development or fight against poverty.

The Mahalanob is Technique to Include All the Discriminating Variables

This technique was used to first evaluate the importance of each discriminating variable.

Table 6 Standardized Canonical Discriminant Function Coefficients

Variable	Coefficient	Impact on Project Sustainability
X ₁	.196	*
X ₂	.685	*
X ₃	.482	*
X ₄	.273	*
X ₅	.490	*
X ₆	-.452	**
X ₇	.694	*
X ₈	-.139	**

Note: *Positive and ** Negative

From Table 6, the generated standardized canonical discriminant model for all the variables is;

Fisher's Linear Discriminant Function = 0.196X₁ +0.685X₂ +0.482X₃ +0.273X₄ +0.490X₅ -0.452X₆ +0.694X₇ -0.139X₈..... (1)

Two variables have the potential to have a detrimental impact on the sustainability of World Bank initiatives, according to the created model (1), given their negative coefficients. Six variables contribute positively (favorably) to the sustainability of the project. Fisher's Linear Discriminant Function was thus utilized to create the models for predicting whether a project would be considered viable or not.

Table 7 Classification Function Coefficients

	ProjStatus	
	-1.00	1.00
X ₁	1.341	1.299
X ₂	1.475	1.299
X ₃	1.892	1.780
X ₄	1.882	1.796
X ₅	.699	.592
X ₆	2.082	1.932
X ₇	.152	.183
X ₈	.098	.056
(Constant)	-101.544	-92.669

Fisher's linear discriminant functions

Fisher’s Linear Discriminant Function for unsustainability of World Bank-assisted development projects is given as:

$$\text{Unsustainability (U)} = -101.544 + 1.341X_1 + 1.475X_2 + 1.892X_3 + 1.882X_4 + 0.699X_5 + 2.082X_6 + 0.152X_7 + 0.098X_8 \dots\dots\dots (2)$$

Fisher’s Linear Discriminant Function for sustainability of World Bank-assisted development projects is also given as:

$$\text{Sustainability (S)} = -92.669 + 1.299X_1 + 1.299X_2 + 1.780X_3 + 1.796X_4 + 0.592X_5 + 1.932X_6 + 0.183X_7 + 0.056X_8 \dots\dots\dots (3)$$

Based on their positive coefficients for the sustainability and unsustainability classification, the Fisher's Linear models (2) and (3) suggest that users training (X1), research consideration in policy making (X2), insecurity level (X3), ownership (X4), project monitoring (X5), sustainability costs (X6), funding (X7), and insincerity (X8) are potential elements for addressing the challenges of sustainability and unsustainability of World Bank-assisted projects in Nigeria. The result is that depending on how the World Bank-assisted projects are managed while they are in operation, all of the differentiating factors may contribute to their sustainability or unsustainability.

Testing the Significance of Fisher’s Function

To test the significance of Model 3, Wilk’s Lambda and Chi-square statistics were used.

Table 8 Wilk’s Lambda and Chi-square statistics

S	Wilk’s Lambda	Chi-square	df	Sig.
Prediction of Sustainability	0.601	21.631	8	0.006

Table 8 indicates a Chi-square value of 21.631 for the Wilk’s Lambda coefficient of 0.601 is greater than the Chi square tabulated value of 18.3. Therefore, the Fisher’s Linear Function is a significant model for predicting sustainability of World Bank-assisted projects.

Test of Hypotheses

The F-values generated from the equality of group means test on Table 2, was used.

Hypothesis One (H₀₁): Users' training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity, and level of insecurity do not limit the sustainability of World Bank-assisted development initiatives in Nigeria.

At 5% level of significance, only funding (X_7) is significant. Hence, the study accepts the null hypothesis and conclude that users training, research consideration in policy making, insecurity level, ownership, project monitoring, sustainability costs, and insincerity do not constrain the sustainability of World Bank-assisted development projects in Nigeria.

Hypothesis Two (H_{02}): The sustainability of World Bank-supported development projects in Nigeria is not impacted by user training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity, or security levels.

ANOVA extracted from multiple regression analysis was used to test hypothesis two.

Table 9 Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2091.200	8	261.400	18.985	.000 ^b
	Residual	2726.183	198	13.769		
	Total	4817.383	206			

Table 9 displays an F-value of 18.985, which, at a 0.05 level of significance, is significant, supporting the validity of hypothesis two. The study rejects the null hypothesis and comes to the conclusion that the sustainability of World Bank-assisted development projects in Nigeria is influenced by factors such as users' training, research consideration in policymaking, funding, ownership, project monitoring, sustainability costs, sincerity, and level of insecurity.

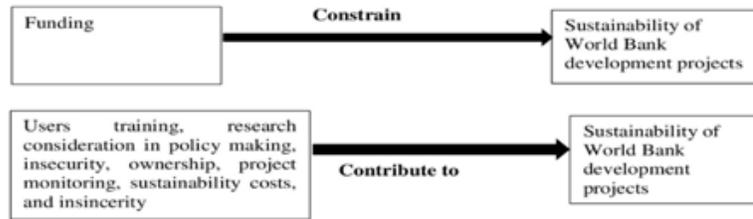


Fig 2: Model of Variables on Sustainability of World Bank-assisted Development Projects.
Source: Field Study, 2022

6.0 Conclusions

Based on the findings, the study recommends that;

- 1.) Funding that is adequate and consistent, as funding works like oil to clear snags in the wheels of project sustainability. A suitable framework should be set up to guarantee fast and sufficient funding for sustainability management, particularly for projects supported by the World Bank. Stakeholders should develop new, profitable commercial sources of funding for the projects' upkeep and sustainability.
- 2.) In order to find the best approach that will accelerate the implementation and sustainability of development projects for the benefit of national development, the Federal Government of Nigeria (FGN) and the World Bank should devote more resources to research and development (R&D). The R&D should emphasize the importance of properly taking into account research findings on World Bank projects when formulating new policies or amending existing ones in order to improve the implementation of development projects and sustainability management.

Lastly, it is recommended to adhere strictly to the CDD strategy as outlined in the World Bank's project implementation policies and programs. The beneficiaries will receive proper training and retraining in sustainability management as a result of the implementation of CDD. The end result will be an improved sense of ownership and responsibility, adequate finance, and an improved degree of sincerity and security of the community projects supported by the World Bank.

Contributions to Knowledge

On the basis of the variables discovered, the study has been able to create different discriminant models to forecast the level of sustainability, or lack thereof, of World Bank-assisted projects in Nigeria.

Additionally, an advanced multivariate method of multiple discriminant functions has been empirically applied to explain the sustainability characteristics of World Bank-assisted projects, and as a result, the conceptual framework has been modified in light of the results. The end result is a model that explains the factors and how they affect the sustainability of Nigerian initiatives supported by the World Bank;

Given the modified conceptual framework, the study has empirically supported a belief held by many project professionals, research experts, and organizations but not previously empirically supported by any research: that the sustainability of projects is influenced by a lack of user training, research consideration in policy making, insecurity level, lack of ownership/responsibility, no or inadequate monitoring, high sustainability costs, poor funding, and a high level of insincerity.

References

- (1) Bakkes, J. (2012). *Bellagio Sustainability Assessment and Measurement Principles –Significance and Examples from International Environment Outlooks*. Retrieved on 2/3/2022 from (www.iisd.org/pdf)
- (2) Morfaw, J. (2014). *Fundamentals of project sustainability*, Paper presented at PMI® Global Congress 2014—North America, Phoenix, AZ. Newtown Square, PA: Project Management Institute.
- (3) Echeme, I.I. (2017) *Critical Factors Hindering Successful Implementation of World Bank-assisted Local Empowerment and Environmental Management Projects in Imo State*; *Project Management World Journal*, Vol. VI, Issue 9, September Edition.
- (4) Nwachukwu, P.F. (2018): *Achieving National Development through Sustainability of Development Projects*; *American Journal of Scientific and Industrial Research*, Vol. 1, Issue 8, April, USA, pp.247,
- (5) Olaiye, K.A. (2019): *Survey of Nigeria Development Processes (2010-2017)*, *Journal Applied Scientific Studies*, 2(8), April Edition, pp.15-17.
- (6) Okereke, A.C. (2015): *Developing Countries and their Drive Towards Adopting Project Management Principles for Sustainable Development*, *International journal of technology and development*, 3(7), 32-47.
- (7) Akpan, E.O.P, Echeme, I.I. and Ubani, E.C. (2017) *Situational Analysis of Time and Cost Performance of World Bank-assisted Local Empowerment and Environmental Management Project (LEEMP) in Imo State, Nigeria*; *Project Management World Journal*, Vol. VI, Issue 3, March, pp. 31.
- (8) Whang, Y.K. (2019): *Project Sustainability and Community Development: A Panacea for National Development*; *The Development Studies*, vol. 15(3); pp.38.
- (9) Echeme, I.I. and Nwachukwu, C.C. (2010) *An Investigation on the Impact of FADAMA II Project Implementation in Imo State*, *American Journal of Scientific and Industrial Research*, Vol. 1, Issue 3, December, USA, (www.scihub.org)
- (10) Wilton, J. (2020) *Can Sustainability of Small Projects Make a Big Difference? Development Marketplace*; *World Bank Speaks Out*; Retrieved on 1/2/2022 from (www.worldbank.org/project-success/) pp. 21

- (11) Pinto, J.K. & Slevin, D.P. (1987): *Critical Success Factors in Effective Project Implementation; Balancing Strategy and Tactics in Project Implementation*; Willey and Sons, New York; pp. 479.
- (12) Schwalbe, K. (2008): *Project Phases and the Project Life Cycle; Information Technology Project Management*, 4th edition, Cengage Publishing Ltd, New Delhi, pp. 55.
- (13) Shu, L. and Xiang, K (2019): *Sustainability indicators: a compass on the road towards sustainability*, *Journal of Applied Scientific Research*, IV(III), August Edition.
- (14) Boswell, P. (2019) *Project Sustainability Management: A Systems Approach*, FIDIC, Geneva, PGB, July.
- (15) Shivairo, L.K. and Were, S. (2017) *Factors Affecting Project Sustainability in Non-Governmental Organisations in Nairobi City County, Kenya*, *International Journal of Novel Research in Humanity and Social Sciences* Vol. 4, Issue 5, pp: 57-70, September – October Edition.
- (16) Nabaraj, G. (2013) *Analyzing the Sustainable Development Indicators of Nepal using System Dynamics Approach*, a dissertation submitted to Hankuk University of Foreign Studies, South Korea.
- (17) World Bank Group (2008): *The Role of Communities in Sustainable Development; Special Issues*, Vol. 15, No. 9; pp.8
- (18) Fredman, B., and Neuman, K. (n.d.). *System Theory*. Retrieved May 20, 2022, from Sage Publications: (www.sagepub.com)
- (19) Laszlo, A., and Krippner, S. (1998). *Systems Theory and a Priori Aspects of Perception*. Amsterdam: Elsevier Science.
- (20) Sang, P.K. (2015). *Sustainability of World Bank Funded Projects in Kenya*, A Thesis Submitted to the School of Business, Kenyatta University, October.
- (21) Hanisch, B., and Wald, A. (2012). *A bibliometric view on the use of Contingency Theory in project management research*. *Project Management Journal*, 3(3), pp.4.
- (22) Heupers, E. (2015). *Towards Situational Project Management Method Engineering for SMEs, A Case Study at Nibag*, B.V. University of Twente: Unpublished Thesis.
- (23) Gujarati, D.N. and Sangeetha, (2007): *Introduction to Discriminant Analysis; Basic Econometrics*, 4th Ed.; Tata McGraw-Hill Publishing Company, Ltd, New Delhi; pp.34.
- (24) Nwachukwu, V.O. (2008) *Principles of Statistical Inference (3rd Edition)*, Zelon Enterprises, Rivers State, Nigeria.

**Email: ibeawuchi.echeme@futo.edu.ng; ibeecheme@yahoo.com
okwaraid@gmail.com
Stanley.okangba@gmail.com**