

**ASSESSING DAM INFRASTRUCTURE AND
HAPPINESS OF RURAL DWELLERS: A CASE OF
SHIRORO HYDRO ELECTRICITY DAM COMMUNITY
IN NIGERIA**

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DWELLERS: A CASE OF SHIRORO HYDRO ELECTRICITY DAM
COMMUNITY IN NIGERIA**

By

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**Thesis Submitted to
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of Doctor of Philosophy**

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ABSTRACT

Since independence, Nigeria has adopted the central planning approach to development and structural transformation as a deliberate strategy to influence and control the principal sectors of the economy in order to achieve growth and development for the well-being of the citizenry. It was in this spirit that the Shiroro Hydro Electricity Dam was installed in Shiroro village within Niger State in 1990. However, important aspects like the happiness of the host community and the internal security of the installed dam and the likely repercussions such as vandalization of the dam by the host community has often been ignored. The idea behind this research work therefore, is to ascertain the impact of the Shiroro Hydro Electricity Dam on the happiness of the Shiroro community. In order to accomplish this research objective, the study analyzed the socio-economic variables of state of mind, household per capita income, physical environment and social amenities as yardsticks of generating happiness from the treatment and control groups. The study used the Propensity Score Matching technique and the Binary Probit Model to analyze the data. The result obtained indicates that the income level of the community has increased by 18 per cent. However, the community's happiness status is found to be negative due largely to the loss of farmland, and environmental predicaments like flood and inadequate rural infrastructure amenities. Therefore, the study recommends that the government introduce a flood forecast structure of early warnings to minimize flood damage, introduce farm-education schemes to change the community's perception of their proneness to local resources opportunities, and introduce a Rural Infrastructure Trust Fund to overcome the social amenity predicament in the community. It is concluded that these support schemes would not only serve as compensation to the dam- created negative externalities but also would go a long way at reducing violence and crime, hence improving the happiness of the host community.

Keywords: happiness, infrastructure, host community, Shiroro dam

ABSTRAK

Sejak merdeka, Nigeria menerima pakai pendekatan perancangan pusat dalam pembangunan dan transformasi struktur sebagai strategi untuk mempengaruhi dan mengawal sektor ekonomi utama dalam mencapai pembangunan dan pertumbuhan ekonomi bagi tujuan kesejahteraan rakyat. Berdasarkan semangat berkenaan, Empangan Hidro Elektrik Shiroro dibina di perkampungan Shiroro di dalam negeri Niger pada tahun 1990. Bagaimanapun, aspek penting seperti isu kebahagiaan masyarakat tuan rumah dan keselamatan dalaman untuk empangan yang dipasang serta kemungkinan kesan vandalisme yang dilakukan oleh masyarakat tuan rumah ke atas infrastruktur yang dibina seringkali diabaikan. Objektif utama penyelidikan ini, adalah untuk melihat kesan Empangan Hidro Elektrik Shiroro ke atas kebahagiaan masyarakat Shiroro. Dalam usaha untuk mencapai objektif penyelidikan, kajian ini menganalisis pemboleh ubah sosio-ekonomi seperti keadaan minda, pendapatan isi rumah per kapita, persekitaran fizikal dan kemudahan sosial sebagai ukuran kebahagiaan ke atas kumpulan rawatan dan kawalan. Kajian ini menggunakan teknik skor kecenderungan sepadan dan model probit binari dalam menganalisis data. Hasil kajian menunjukkan bahawa paras pendapatan masyarakat telah meningkat sebanyak 18 peratus. Bagaimanapun, status kebahagiaan masyarakat adalah berkurangan, sebahagian besarnya disebabkan oleh masalah kehilangan ladang, masalah alam sekitar seperti banjir dan masalah kemudahan infrastruktur luar bandar yang tidak mencukupi. Oleh itu, kajian ini mencadangkan agar pihak kerajaan memperkenalkan struktur amaran awal peramalan banjir bagi meminimumkan kesan kerosakan banjir, mengadakan skim pendidikan ladang bagi mengubah persepsi masyarakat daripada kawasan bencana kepada peluang sumber tempatan dan memperkenalkan tabung dana amanah infrastruktur luar bandar bagi mengatasi masalah kemudahan sosial di luar bandar. Kesimpulannya, kesemua skim sokongan ini bukan sahaja dapat menampung ganti rugi disebabkan oleh pembinaan empangan tetapi juga membantu dalam mengurangkan jenayah dan keganasan dan seterusnya meningkatkan tahap kebahagiaan masyarakat tuan rumah.

Kata kunci: kebahagiaan, infrastruktur, masyarakat tuan rumah, empangan Shiroro

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LIST OF ABBREVIATIONS

AHI	Average Happiness Index
ATE	Average Treatment Effect
ATT	Average Treatment effect on the Treated
ATU	Average Treatment effect on the Untreated
BC	Before Christ
CHI	Chinese Happiness Inventory
ECN	Electricity Corporation of Nigeria
FCT	Federal Capital Territory
GDP	Gross Domestic Product
GHN	Gross National Happiness
GNP	Gross National Product
GPP	Global Poverty Project
HDI	Human Development Index
HHY	Household Per Capita Income
ILO	International Labour Organisation
KGM	Kernel Gaussian matching
LGA	Local government Area
MHS	Marital Happiness Scale
NDA	Niger Dam Authority
NDP	National Development Plan
NEEDS	National Economic Empowerment and Development Strategy
NEPA	National Electric Power Authority
NESCO	Nigerian Electric Supply Company
NNNPC	Nigerian National Petroleum Corporation
NNM	Nigerian Electric Supply Company

NSG	Niger State Government
OECD	Organization for Economic Co-operation and Development
OHI	Oxford happiness Inventory
PEV	Physical Environment
PHCN	Power Holding Company of Nigeria
PSM	Propensity Score Matching
QOL	Quality Of Life
RM	Radius Matching
SAP	Structural Adjustment Program
SIA	Social Impact Assessment
SOM	State Of Mind
UNICEF	United Nations International Children's Emergency Fund
USA	United States of America
WDR	World Development Report
UK	United Kingdom

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CHAPTER INTRODUCTION

1.1 Introduction

“All men seek happiness. There are no exceptions. However different the means they may employ, they all strive towards this goal. The reason why some go to war and some do not is the same desire in both, but interpreted in two different ways. They will never take the least step except to that end. This is the motive of every act of every man, including those who go and hang themselves” - Alexander Pope in (Ahmed, Teferra, Yuya, & Melese, 2014; Kesebir & Diener, 2009).

Early man began his keen economic desires wandering all day for survival on natural resources. The act of wandering for livelihood came to a halt when he realized fruit seeds grow around his immediate environment. This marked the beginning of farming, formation of city-states and man’s attempt to dominate earth – technology and growth.

Infrastructure is one of the major pilots of growth in every economy. The services provided by infrastructural capital stock are fundamental to global political economy as it provides social and economic benefit to the global community (Ness, 2007). The impact of infrastructure on economic growth has been marvellously spelt out by some past studies in some big economies of the world like UK, Japan, USA etc (WDR, 1994), that investment in this aspect leads to reduced cost of production which translates to economic growth.

Global political economy is the relations of economy to broader social conditions, including the distribution of power (and its sources) and the ways by which individual lives are bring together to the demands of social transformation. Hence, Political economy at all times work toward growth and development, which is important within broader contexts of social and economic change. Of course, it is

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