



**SOCIO-ECONOMIC FACTORS AFFECTING THE ADOPTION OF STABILIZED EARTH BLOCKS IN HOUSING DEVELOPMENT IN CROSS RIVERS STATE**

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**ABSTRACT**

*This study examines the socio-economic factors influencing the adoption of stabilized earth blocks (SEBs) in housing development within Cross River State, Nigeria. SEBs are increasingly recognized as a sustainable and cost-effective alternative to conventional building materials; however, their adoption is constrained by multiple socio-economic conditions. Findings from recent studies indicate that income levels, educational attainment, cultural perceptions, and access to resources are critical determinants of acceptance and use of SEBs in the region. Institutional challenges, including limited technical training, weak policy support, and poor access to credit facilities, further hinder widespread adoption. By highlighting these socio-economic barriers, this research underscores the need for targeted interventions through awareness creation, policy integration, financial support mechanisms, and community participation. The study concluded that while SEBs present a cost-effective and sustainable solution to Nigeria's housing deficit, their uptake remains constrained by affordability issues, limited awareness, and societal attitudes toward alternative building materials. The study also recommended that it helps organize public sensitization programs to inform communities about the economic, environmental, and structural benefits of SEBs. Partnerships with local media, NGOs, and community leaders can help change cultural perceptions and encourage wider acceptance.*

**KEYWORDS: Socio-Economic Factors, StabilizedEarth Blocks, Housing Development, Cross Rivers State**

**INTRODUCTION**

The increasing demand for affordable housing in Nigeria has placed significant attention on alternative building materials such as stabilized earth blocks (SEBs). SEBs are environmentally friendly, low-cost, and locally sourced, making them a viable solution to housing deficits, particularly in regions like Cross River State. However, the adoption of SEBs is influenced by multiple socio-economic factors including income levels, educational background, cultural perceptions, and accessibility to resources (Ugwu & Nwafor, 2020; Akinkurolere et al., 2021). Studies suggest that while SEBs offer cost-effective and sustainable housing options, challenges such as lack of awareness, inadequate technical knowledge, and social acceptance hinder their widespread use (Adeleke et al., 2020).

Socio-economic factors are critical in shaping housing choices, particularly in developing regions where poverty levels and limited infrastructural support constrain access to conventional



housing. In Cross River State, factors such as household income, affordability, and employment status largely determine material preferences in housing development (Abisuga et al., 2020; Okafor et al., 2021). Moreover, education plays a vital role, as individuals with higher levels of education tend to embrace innovative building technologies more readily than those with limited literacy. Cultural perceptions also influence adoption rates, as traditional beliefs about housing durability and status often discourage residents from adopting unconventional materials like SEBs (Eze & Emenike, 2022).

In addition to individual socio-economic conditions, institutional and policy frameworks significantly impact SEB adoption. Government policies on affordable housing, availability of credit facilities, and the promotion of sustainable construction practices affect the extent to which SEBs are accepted in Cross River State (Adewuyi et al., 2020; Alabi et al., 2021). Furthermore, the lack of adequate technical training and institutional support limits the capacity of local builders to incorporate SEBs effectively. Therefore, understanding these socio-economic determinants is crucial in addressing housing deficits and promoting sustainable development in Nigeria's construction sector (Ogundipe et al., 2022).

## **CONCEPT OF HOUSING DEVELOPMENT**

The process of planning, creating, building, and maintaining residential units and associated infrastructure to satisfy a population's needs for shelter and settlement is known as housing development. It involves not only the physical construction of dwellings but also the integration of essential services such as water supply, sanitation, roads, electricity, schools, healthcare facilities, and recreational spaces (UN-Habitat, 2020). Given its intersection with social, economic, and environmental objectives, housing development is regarded as a crucial component of sustainable development. Modern approaches emphasize not just the quantity of housing units delivered, but also quality, environmental sustainability, inclusiveness, and resilience to climate change (Acheampong, 2021).

In order to create housing policies and delivery methods that complement regional demographic trends and international environmental goals, governments, commercial developers, and community organizations all play vital roles. Urbanization and economic growth are both caused by and influenced by housing construction. Adequate housing provides shelter, improves public health, and contributes to social stability, while poor housing conditions are linked to poverty, exclusion, and vulnerability (Tipple & Speak, 2016). Effective housing development must therefore balance affordability, accessibility, and sustainability.

The methodical process of creating suitable, reasonably priced, and long-lasting housing as a component of a larger plan for human settlement and socioeconomic development is known as housing development. According to Ibem and Aduwo (2017), housing development goes beyond the construction of physical structures; it incorporates access to essential services, environmental quality, community facilities, and the creation of livable neighborhoods. They stress that in order to effectively address the need for housing as well as concerns of affordability, inclusivity, and resilience against social and environmental difficulties, housing development must be in line with national urban plans and sustainability goals. As a result, housing development can be viewed as a complex process that includes design, construction, service delivery, and regulatory frameworks with the goals of enhancing social justice, fostering sustainable urban expansion, and improving quality of life.

The deliberate construction of housing units and associated infrastructure to satisfy a population's shelter, social, and economic demands in an urban or rural setting is known as housing development. According to Arku (2019), housing development should be seen not only as the supply of physical dwellings but also as an integral part of urban planning that addresses



affordability, accessibility, and sustainability. Arku emphasizes that building enough housing is essential to creating inclusive and equitable cities because it must keep up with the increasing urbanization, population increase, and poverty reduction. In order to enhance living circumstances and support sustainable human settlements, housing development is a multifaceted process that incorporates building, service provision, policy interventions, and community involvement.

## **CONCEPT OF SOCIO-ECONOMIC FACTORS**

The social and economic circumstances that affect people, communities, and groups, influencing their opportunities, actions, and standard of living, are known as socio-economic factors. These elements frequently influence decision-making procedures, resource accessibility, and general well-being. They typically include income, education, employment, occupation, housing, social class, cultural practices, and access to healthcare and public services (Galobardes, 2016). Human growth and societal outcomes are influenced by socioeconomic factors, which are the result of the interaction between social structures and economic reality. They are critical determinants of disparities in health, education, housing, and environmental exposure (Braveman, 2017). For example, individuals with lower income or education levels often face greater barriers to healthcare access, nutritious food, and safe living conditions, which directly affect their life chances and well-being (Marmot, 2020).

The interconnected social and economic circumstances that affect both individual and societal life outcomes—especially with regard to access to resources, opportunities, and services—are known as socio-economic factors. These factors include income, education, occupation, employment status, housing quality, healthcare accessibility, cultural background, and social capital, all of which collectively shape human well-being and social mobility (OECD, 2017). Socio-economic factors, then, can be viewed as the fundamental framework of social and economic causes that account for differences in societies, directing both scholarly research and governmental initiatives meant to lessen inequality and advance equitable development.

Socio-economic factors are the structural conditions that combine social attributes and economic resources to influence individual and collective opportunities, behaviors, and outcomes. These include education, employment, income, housing, health services, and social capital, which operate together to shape inequality and development trajectories (Pickett & Wilkinson, 2015). Scholars argue that socio-economic conditions form the “contextual determinants” of life chances, as they not only affect material well-being but also influence psychosocial stress, community cohesion, and political participation (Kawachi, Subramanian, & Almeida-Filho, 2018).

Socio-economic factors are the measurable social and economic attributes of individuals and populations that determine variations in health, education, employment, and overall well-being. These include variables such as income, education, occupation, and living conditions, which serve as critical indicators of inequality within and between societies (Adler & Stewart, 2016). According to Chen, Oster, and Williams (2016), these factors represent the broader determinants of opportunity, influencing life expectancy, quality of life, and the ability to access resources. Thus, socio-economic factors can be understood as the core set of social and economic determinants that systematically shape disparities in human development, health outcomes, and social mobility. The general social and economic conditions that impact people's health, education, employment, and general well-being as well as their place in a society are known as socio-economic factors. The interrelated social and economic influences that impact human development, health outcomes, and career prospects are known as socio-economic factors. According to Marmot and Allen (2020), these factors—such as education, employment, housing, and income—form the structural context within which individuals live and make choices. They argue that inequalities in socio-economic



conditions translate directly into disparities in health and well-being, demonstrating that “social injustice is killing people on a grand scale.”

The social and economic circumstances that define people's options, mould their behaviors, and affect population outcomes in domains like work, education, and health are known as socio-economic factors. As explained by Currie and Schwandt (2016), socio-economic circumstances—including income, parental background, neighborhood quality, and access to resources—play a decisive role in determining life chances and intergenerational mobility. They stress that these elements are strong predictors of inequality rather than just background variables, which explains why differences continue to exist throughout generations, even in high-income economies. According to this definition, socio-economic factors are the contextual and structural elements that influence human well-being, maintain or lessen inequality, and direct how opportunities are distributed among social groups.

## **TYPES OF SOCIO-ECONOMIC FACTORS**

Conditions that affect people's and communities' access to opportunities, resources, and general quality of life are known as socioeconomic factors. They are multifaceted, encompassing, among other things, health status, cultural norms, occupation, income, and education. Since these elements influence both individual well-being and country growth, an understanding of them is crucial in the fields of social science, public health, and policy analysis.

### **➤ Income and Economic Status**

One of the main socioeconomic determinants of access to necessities including food, housing, medical care, and education is income. While low income is linked to poverty, vulnerability, and exclusion, higher income is frequently connected with better living conditions and more social mobility. According to Akter and Basher (2021), income disparities remain a key determinant of social inequality, influencing household consumption patterns, child development, and access to health services.

### **➤ Education**

Education influences social and health awareness, job prospects, and skill sets. Higher educated people frequently have better access to high-quality occupations, better income possibilities, and enhanced decision-making abilities. Recent studies, such as that by Nhemachena and Murimbika (2020), highlight that education is directly linked to economic empowerment, particularly in developing countries, as it enhances entrepreneurship, innovation, and community resilience.

### **➤ Occupation and Employment Status**

People's socioeconomic status is greatly influenced by the kind of work they do and whether they are employed or not. Security comes from stable, well-paying employment, but financial instability is exacerbated by unemployment or informal work. As observed by Hernández-Moreno, (2022), employment not only affects income but also social identity, access to social networks, and mental health outcomes.

### **➤ Health and Access to Healthcare**

Access to healthcare and one's health are important socioeconomic determinants. While access to healthcare increases life expectancy and resilience against disease, poor health lowers quality of life and limits productivity. As explained by Akwaowo & Umoh (2024), a sustainable building avoids irreparable environmental damage, ensures that resources are distributed equally, and satisfies social and cultural demands. A study by Islam and Mondal (2021) emphasized that



inequalities in healthcare access remain a persistent socio-economic challenge, particularly in low- and middle-income countries where affordability and infrastructure gaps exist.

➤ **Housing and Living Conditions**

The neighborhood atmosphere and housing quality have a big impact on socioeconomic results. A study by (Isaac & Usanga, 2024) emphasized that Human health and well-being are positively impacted by natural surroundings. Overcrowding, poor sanitation, and health hazards are frequently associated with substandard housing. Good housing, on the other hand, promotes stability and enhanced mental health. According to Williams and Greene (2020), housing insecurity exacerbates social inequality, particularly among vulnerable groups such as migrants and low-income households.

➤ **Social and Cultural Capital**

Socioeconomic variables can include community relationships, cultural values, and social networks. They affect access to resources, educational possibilities, and work prospects. Weak networks frequently result in social exclusion, whereas communities with high social capital encourage cooperation and resilience. Alvarado, (2021) observed that cultural norms and community ties affect participation in economic activities, particularly in rural and marginalized settings.

➤ **Geographic Location and Environment**

The socioeconomic opportunities of individuals are influenced by their place of residence. Rural populations may experience systemic disadvantages, whereas urban dwellers frequently enjoy more access to jobs, healthcare, and education. Socioeconomic outcomes are also influenced by environmental factors including pollution and climatic threats. Social impact and environmental sustainability have become vital dimensions of human factors, (Akpan & Uko, 2025). As noted by Choudhury, (2021), geographic inequalities exacerbate the digital divide, access to markets, and vulnerability to climate change impacts.

## **EFFECTS OF SOCIO-ECONOMIC FACTORS ON STABILIZED EARTH BLOCKS IN HOUSING DEVELOPMENT**

For low-cost, low-carbon housing, stabilized earth blocks (SEBs), such as interlocking stabilized soil blocks (ISSBs) and compressed stabilized earth blocks (CSEBs), are being promoted more and more. Socioeconomic issues influence their actual diffusion, performance, and impact just as much as material science does. Affordability, the availability of local resources, labor and skills, supply networks, laws and regulations, social acceptance, financial stability, and macroeconomic instability are important motivators.

**Affordability and life-cycle cost.** SEBs can reduce upfront and life-cycle costs when soils are sourced locally and stabilizer content is optimized. According to Buildings (MDPI), an economic analysis of CEB wall systems found unit-area cost savings of 32–94% compared with masonry, adobe, and fired bricks, due to lower material and transport intensity and simplified construction systems (Gutiérrez-González, 2024). Similarly, a bibliometric synthesis in Sustainability explains that CSEB programs target low-income households because of environmental and economic benefits—especially where fired bricks are costly and fuel-intensive (Bui, 2023). In contexts such as Nigeria and Malawi, cost comparisons consistently show SEBs can undercut sandcrete or fired bricks when local soils and modest cement ratios are used (Nnadi, 2022/2024; Mtema, 2023). These affordability effects directly influence adoption rates and project viability.



**Local availability of inputs and transport costs.** The primary socioeconomic justification for SEBs is the substitution of local soils for imported or transported materials. As explained in Sustainability, UN-Habitat and allied initiatives encourage using local soil to cut costs and stimulate local value chains (Bui, 2023). Where suitable lateritic soils are abundant near sites, producers avoid long-haul transport, which improves cost reliability amid fuel price volatility—a major factor in many Global South markets (Bui, 2023; Mtema, 2023).

**Labor, skills, and employment effects.** In areas with underemployment, SEBs can be labor-intensive, which is beneficial from a socioeconomic standpoint. According to Frontiers in Built Environment, real-world earthen housing that used interlocking CSEBs and complementary low-material roof systems achieved cost-effectiveness partly by reducing highly skilled labor and imported components while opening opportunities for local training and jobs (Hegazy, 2023). Interlocking geometries can lower masonry skill thresholds, which broadens community participation and reduces labor bottlenecks (Hegazy, 2023). Conversely, where skills and simple mechanized presses are unavailable, labor constraints and inconsistent block quality can slow adoption (van der Burgt, 2023).

**Supply chains and stabilizer economics.** Stabilisers (usually cement or lime) and, more and more, agro-industrial fibres and byproducts are essential to EBS performance and cost. As explained in Construction and Building Materials, the choice and dosage of Stabilizers significantly affect mechanical strength, durability, and embodied cost; optimizing blends reduces cement dependence and price exposure (Fagone, 2024). In Malawi, the International Journal of Construction Education and Research shows that rational cement ratios maintain performance while curbing cost, making SEBs more affordable and scalable in low-income settings (Mtema, 2023).

**Codes, standards, and regulatory certainty.** Regulatory frameworks shape market confidence and mortgage ability. According to Building Research & Information, the existence of a national CSEB code (e.g., Egypt’s 2019 HBRC guideline) is an important enabler of scaled adoption—by standardizing quality, easing approvals, and reassuring clients and lenders (van der Burgt, 2023). Where codes are absent or permit processes are unfamiliar with earthen products, projects face delays and higher compliance costs, weakening the socio-economic case despite technical viability (van der Burgt, 2023).

**Cultural perceptions and user acceptance.** Social meanings attached to “earth” influence demand. A study on social representations of CEBs in Ouagadougou reports that, despite thermal comfort advantages in Sahelian climates, earth construction can be perceived as “poor people’s materials”, depressing willingness to pay and market visibility (Kaboré & Ouedraogo, 2021). In contrast, a 2024 Built Environment Project and Asset Management article finds that purchase intentions for CSEB products are shaped by multidimensional factors—environmental attitudes, perceived quality, and social influence—suggesting targeted marketing and demonstration housing can improve acceptance (Serdar, 2024).

**Finance, affordability thresholds, and housing policy.** Access to microfinance, subsidies, or public procurement can make or break SEB uptake. As explained in Sustainability (Bui, 2023) and Frontiers in Built Environment (Hegazy, 2023), SEBs fit affordability mandates in social housing, but require alignment with procurement standards, lender appraisals, and insurance. When lenders discount earthen walls or require heavy guarantees, households face higher effective costs even if material prices are lower. Public pilots that validate performance and lower perceived risk can crowd-in private finance.

**Macroeconomic volatility and price stability.** In many low- and middle-income countries, currency swings and energy price spikes raise the cost of cement, steel, and fired bricks. According to Nigerian comparative cost studies, SEBs’ lower dependence on energy-intensive materials can



buffer projects against inflation, offering more stable unit costs over time (Nandi, 2022/2024). This stability improves budget predictability and can accelerate delivery schedules for mass housing.

**Environmental and health co-benefits with social returns.** CSEBs' lower embodied energy and improved indoor thermal comfort translate into reduced operational energy costs for households, which is socio-economically meaningful where electricity tariffs or cooling costs are high (Bui et al., 2023; Gutiérrez-González, 2024). Lower energy bills free household income and improve resilience during heat waves—an increasingly important social benefit.

**Scaling constraints and pathways.** Despite advantages, diffusion gaps remain. A global review in Building Research & Information shows a negative correlation between national development level and earthen housing prevalence—modernization pathways often marginalize earthen techniques without supportive policies (Houben & Guillaud synthesis discussed by Ciancio, 2021). Current literature points to practical steps: (i) establishing clear standards and testing protocols; (ii) building local production clusters for presmoulds; molds; (iii) fostering training ecosystems; and (iv) blending social marketing with demonstration projects to reshape perceptions (van der Burgt, 2023; Serdar, 2024). Where these enablers are present, SEBs deliver affordability, local employment, a-carbon carbon housing at scale.

**Implications for housing development.** In sum, SEBs' socio-economic effects are two-way: the materials improve affordability, local employment, and cost stability, but their success depends on institutional and cultural conditions—codes, finance, and social acceptance—that must be developed alongside technical optimization. Aligning housing policy, standards, and finance with locally organized SEB value chains unlocks the full socio-economic promise of earth-based housing.

## **EFFECTS OF SOCIO-ECONOMIC FACTORS ON HOUSING DEVELOPMENT**

Both the demand for housing and the feasibility of delivering new stock are influenced by socioeconomic factors. Effective demand moves towards smaller, less expensive units and informal or crowded options while real earnings are stagnant, unemployment is high, and income inequality increases. As explained by Isaac & Edem (2025), This indicates poor revenue prospects for developers and dampens formal housing course (youth bulges, household formation), and rapid urbanization intensify demand, but if inequality rises faster than wages, price growth can decouple from broad affordability, creating markets where projects target narrow, high-income segments while most households are priced out (Haile Mariam, 2020) While city-level studies in the Global South show how household income, family size, and migration status condition both preferences and ability to access formal units, cross-country evidence demonstrates that distributional dynamics matter alongside macro trends. Long-run data also connect inequality to housing market dynamics.

Development outcomes are equally determined by finance and the cost of money. Moreover, the construction industry often faces challenges in attracting younger talent or providing ongoing training and development (Akpan & Peter, 2025) . On the demand side, the number of households that are able to convert housing demands into effective purchasing power is determined by interest rate levels, mortgage availability, and down payment restrictions. On the supply side, phase scheduling and feasibility margins are determined by the weighted average cost of capital for developers, inflation in building materials, and financing conditions. Kader (2022) highlights how interest-rate hikes and tighter credit propagate through the housing value chain—reducing pre-sales, slowing cash flows, widening financing gaps, and ultimately shrinking completions—whereas cheaper and more reliable credit can unlock latent demand and improve take-up of mid-income units. Crucially, these financial frictions interact with socio demographics: even in credit-rich



environments, households with lower incomes or those in informal employment have more severe borrowing restrictions, which limits inclusive development and reinforces fragmented markets

Socioeconomic realities are translated into where and what is actually developed by urban land, infrastructure, and regulatory frameworks. While low- and moderate-income demand spills into informal expansions in the periphery, developers gravitate towards premium locations and smaller, higher-margin projects in situations with limited supply of serviced land, high statutory fees, and drawn-out regulatory processes. Rauf & Weber (2022) also point to speculative dynamics—when capital chases land appreciation rather than end-user occupancy, supply skews toward investment-grade units and leaves affordability gaps unfilled. Long commutes, service shortages, and ingrained tenure insecurity at the urban edge are examples of how socioeconomic pressures manifest as spatial inequality in the absence of targeted reforms (such as trunk-infrastructure financing, streamlined permitting, and predictable developer levies), which can reduce delivered costs and realign private delivery with social need.

Lastly, socioeconomic considerations have a significant impact on human development and affect the resilience and quality of housing. Budget-stressed households put off quality, settling for inferior materials, insufficient ventilation, or climate-vulnerable sites, which raises lifespan costs and health hazards. According to recent research, affordable, sustainable housing is a social determinant of health because physical and mental healths are jointly determined by factors like affordability, tenure security, and neighborhood access to services. Improving these factors also increases productivity and educational attainment, which in turn boosts local housing markets.

## **CONCLUSION**

In conclusion, the adoption of stabilized earth blocks (SEBs) in housing development in Cross River State is largely shaped by interrelated socio-economic factors such as income, education, cultural perceptions, and institutional support. While SEBs present a cost-effective and sustainable solution to Nigeria's housing deficit, their uptake remains constrained by affordability issues, limited awareness, and societal attitudes toward alternative building materials. Strengthening public awareness campaigns, integrating SEB technology into housing policies, and providing technical training for local builders could significantly enhance acceptance. Moreover, improved access to financial support and proactive government intervention are essential to overcoming the socio-economic barriers that currently hinder widespread adoption, thereby fostering sustainable and affordable housing development in the region.

## **RECOMMENDATIONS**

1. It helps organize public sensitization programs to inform communities about the economic, environmental, and structural benefits of SEBs. Partnerships with local media, NGOs, and community leaders can help change cultural perceptions and encourage wider acceptance.
2. It help to provide hands-on training for local builders, artisans, and construction workers to enhance technical knowledge of SEB production and application. Establishing training centers will ensure that skills are locally available and reduce reliance on external expertise.
3. The government should incorporate SEBs into housing policies, building codes, and affordable housing schemes. Offering tax rebates, subsidies, or incentives for using SEBs can promote adoption across both private and public housing projects.



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