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From Timber to Steel: Socio-demographic Drivers Underlying Homeowners' Change in Roof Truss Preferences in Ghana

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Abstract

Homeownership is an important factor in wealth-making and socio-economic mobility. However, decisions about construction materials, especially roof truss systems, are less studied in developing economies. The shift from timber to metal trusses in Ghana echoes wider economic, socio-demographic, and sustainability concerns. We investigated the socio-demographic factors that influence homeowners' choices for truss materials to provide information for sustainable housing policy and market development. Survey data were obtained from 300 homeowners purposively selected across two major urban cities. Logistic regression shows that marital status, gender, income, education, and third-party advice had significant effects on material preference. Women, unmarried individuals, and lower-income and less educated homeowners are more likely to select wood for truss construction. On the other hand, homeowners who received third-party advice and have higher levels of education and earnings above US$200 had greater odds of selecting metal trusses. Our findings indicate that socio-demographic micro-level considerations play a notable role in shaping timber-to-metal transitions by private residential builders.

Keywords: *homeownership, housing policy in Ghana, roof truss material preference, socio-demographic factors, sustainable construction*.

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1. Introduction

A building's roof is one of the largest, most important, and priciest components of any housing unit (Ejiga, 2010; Dashore, 2019). Its design, which often incorporates either trusses or rafters, is critical for carrying roof loads safely while safeguarding aesthetic appeal and durability. Trusses have replaced rafters in contemporary residential construction due to their ease of installation, superior strength and efficient load transfer to exterior walls, which relieves the interior walls of stress (Elliot, 2015). Furthermore, trusses support a large amount of load across wide spans compared to their weight. This makes them the preferred choice in modern roof construction (Tüfekci et al., 2020).

Several materials are available for roof truss construction. Each of these materials has unique properties and great implications for building performance (Jahan and Edwards, 2016; Akadiri, 2018; Selva, 2019). Since the type of material used for truss construction affects both the structural integrity and environmental sustainability of the building, its selection is a critical decision. Supporters of green construction stress the need for renewable and low-carbon materials, including wood, to reduce CO_2 emissions while promoting sustainable urban development (Seyfang, 2009; Bevan and Woolley, 2008; Høibø et al., 2015).

Conventionally, wood has been the dominant material for truss construction owing to its strength, light weight, and ease of installation (Tigue and Hoigard, 2011; Boadu and Antwi-Boasiako, 2016). However, current trends present a growing demand for metal trusses, particularly in urban and peri-urban cities in many countries in Sub-Saharan Africa (Parker, 2018; Appiah-Kubi and Tepketey, 2011). Metal trusses are said to provide a longer lifespan and higher durability compared to timber. Nevertheless, they are often more expensive and usually need additional insulation to reduce heat transfer (Narang, 2005). The shift from wood to metal as a material of choice in roof truss designs has raised greater concerns about material selection in the construction industry. It also brings into question compatibility with the United Nations' Sustainable Development Goal 11 as a drive towards safe, green, and inclusive housing. This shift signifies more than a change in structural preferences. It marks a broader reconfiguration of material culture in housing construction.

While several studies have examined the technical attributes of roofing truss materials, there remains a significant gap in understanding how socio-demographic characteristics shape these choices. Previous works have indicated that material preferences often involve complex trade-offs shaped by cost, cultural values, experiential knowledge, and environmental awareness (Engel et al., 1993; Chueh and Kao, 2004; Wastiels and Wouters, 2008; Ogunkah and Yang, 2012; Høibø et al., 2015; Antwi-Boasiako and Boadu, 2016). Wastiels and Wouters (2008) and Ogunkah and Yang (2012) found that material selection often involves a mix of objective and subjective criteria, ranging from affordability to perceived prestige and environmental values. Høibø et al. (2015) also noted that persons with strong ecological beliefs often prefer wood due to its perceived sustainability. These studies have largely emerged from European or North American contexts, where housing markets and resource availability differ considerably. The African context, particularly in fast urbanising cities such as Kumasi and Accra, is not well-researched. There, consumption decisions are progressively being shaped by a mixture of forces of modernisation, affordability considerations, and changing social desires.

In order to address this existing gap, the current study investigates the socio-demographic factors that drive homeowners' decisions to choose either wood or metal for roof trusses. By focusing on this material shift, our study aims to contribute to a better understanding of sustainable housing transitions in the African urban settings, while also informing construction practice and policy. The study also contributes to theoretical debates by applying the Sustainability Transitions Theory and the Material Choice Theory to explore the social-demographic drivers of roof material preferences in home construction.

2. Theoretical Framework

We relied on two interrelated theories to guide the current research: Sustainability Transitions Theory (STT) and Material Choice Theory (MCT). These theories together offer a robust framework for examining how the socio-demographic drivers influence homeowners' decisions in selecting truss materials and how these decisions relate to broader sustainability transitions within the built environment.

2.1 Sustainability Transitions Theory

The Sustainability Transitions Theory (STT), as developed by Geels (2002) and later expanded by Markard et al. (2012), explains society's transition from traditional to contemporary materials within the broad scope of environmental and economic sustainability. The theory provides a framework to understand previous transitions and to hypothesise how future transitions could occur (Scoones et al., 2020; Jacobsson and Bergek, 2011). In the context of housing, the shifts in material use, such as the movement from wood to metal trusses for roofs, are not isolated technical decisions but parts of broader changes in norms, markets, technologies, and environmental regulations. According to STT, transitions occur through action at three interacting levels: niche innovations, socio-technical regimes, and landscape (Geels, 2011). Historically, in Ghana, timber has dominated roofing systems. However, the growing concerns over forest depletion, changing urban aesthetics, rising maintenance costs, and rising availability of metal fabrication services are destabilising this regime. Thus, metal trusses have emerged as a niche innovation, gradually displacing wood due to their perceived modern appeal and durability. Social pressures from urban expansion, and changes in policy, which promote sustainable housing and increased access to imported materials, all act as landscape pressures facilitating this shift. The theory also highlights the influence of a mix of market forces and user preferences on the transitions, which aligns with the current study's examination of socio-demographic factors such as income, education, and social influence.

Research in related fields, such as urban development (Raworth, 2012), energy transitions (Kemp et al., 1998), and sustainable agriculture (Smith et al., 2005), highlights how market forces, policy levers, and socio-cultural shifts act synergistically to reshape material adoption based on the STT. Although STT has been used in previous studies, such as those mentioned, its application to housing material transitions in African cities remains very limited, particularly in relation to private homebuilders who dominate the housing supply in Ghana. In filling this gap, we applied the STT in the current housing study to provide a valuable lens through which we could interpret the interplay of the socio-demographic factors as they shape homeowners' decisions.

The timing of this study is critical because Ghana and most other African cities are presently undergoing rapid urbanisation, policy pressure towards SDG-conformant housing, and material supply realignments due to deforestation, tariffs on imports, and rising construction costs. It is therefore urgent to understand which factors are driving the switch from timber to steel, and why, in order to inform sustainable housing policy and climate-conformant building practices before current transitions become locked in.

2.2 Material Choice Theory

The Material Choice Theory (MCT) shows how individuals assess and choose materials based on both subjective and rational evaluations (Ashby, 2005). According to Ashby (2005), individuals often assess materials based on their cost, durability, aesthetics, environmental impact and ease of use. This theory has been extended to account for psychological and social influences. Kahneman and Tversky (1979), Wastiels and Wouters (2008), and Bui et al. (2025) noted that traditions, perceptions, and third-party recommendations significantly shape choices, especially in cases where users lack technical knowledge. This finding is particularly true in developing countries where access to material information is limited, and construction decisions often rely on artisans, family, or housing developers. In the context of this study, homeowners are not passive recipients of material trends. Rather, they navigate constraints and preferences to select materials that align with their socio-economic positioning. MCT also explains that material choice decisions are not always rational and instead are subject to loss aversion and perceived risk (Rao and Davim, 2008). In roofing decisions, for instance, the majority of homeowners perceive timber as familiar but risky (i.e., subject to termite infestation or fire), while metal is unfamiliar but potentially long-lasting. Framing material choices, particularly under the conditions of uncertainty and budget restraint, helps explain why certain socio-demographic groups choose certain materials.

MCT was applied to study low-carbon materials (Jahan and Edwards, 2016), wood housing (Høibø et al., 2015), and cities' building practices (Wastiels and Wouters, 2008). Despite the widespread use of MCT in previous studies, there is a notable gap in its application to the housing and construction sectors within Sub-Saharan Africa. This study fills the gap by linking socio-demographic variables to material choice within the transition from timber to metal trusses using the MCT. In doing so, we extend the theory into a new empirical and regional domain, African real estate and housing construction, where they have scarcely been operationalised.

3. Materials and Methods

3.1 Study Area

The study was conducted in Ghana's two major urban cities, Kumasi and Accra. These cities represent distinct socio-economic, ecological, and cultural profiles and have been undergoing rapid urbanisation (McCaskie, 2007), making them ideal for studying construction material preferences. The 2010 National Population and Housing Census puts the population of Accra at 1,848,614 (887,673 males; 960,941 females) and Kumasi at 2,035,064 (972,258 males; 1,062,806 females), with high literacy rates ranging between 89.1% and 91.3% (Ghana Statistical Service, 2012). Thirty-six percent and thirty-eight percent of the population of Accra and Kumasi, respectively, are married, while 46.1% and 44.4% respectively, are single/have never married. According to the

Ghana Living Standards Survey, the Ashanti region has an average annual per capita income of approximately GH₵8,000 (US$ 2,492.2) while Accra's average annual per capita income is about GH₵5,500 (US$ 1,713) (Ghana Statistical Service, 2014).

Urbanisation in both cities has increased the demand for self-built housing, with homeownership often considered a symbol of economic security. Historical statistics confirm that in 2010, approximately 42.7% of the housing stock comprised owner occupation (GC & B Bank Report, 2022), indicating that property ownership is a predominant tenure form. It raises all the more the importance of material choice decisions by property-owning individuals. For Accra and Kumasi, the building culture involves self-build and has an incrementality influence such that households (and not large building contractors) build in that way. For example, studies on housing supply from Ghana's cities confirm that self-builders are robust housing delivery actors by borrowing personal resources, savings, and informal materials and workspaces (Tipple and Korboe, 1998; LSE Cities and African Centre for Cities, 2021). This indicates that property-owning individuals, and not building contractors, often experience freedom in terms of material choice decisions to the extent that socio-demographic drivers become prominent. For Kumasi, the prevailing housing form is compound housing, where several households co-reside in one building and are often constructed from indigenous building materials and by indigenous building workers. Such types of buildings rely on freely available locally conceived materials and resultant building costs, wherein homeowners take personal decisions about truss materials. In Accra, houses utilise sandcrete block walls and aluminium or asbestos roofing as common building materials. These practices emanate from a building culture where traditional and contemporary materials both feature in roofing and building support, making the decision between timber and steel significant.

Accra and Kumasi reflect contrasting ecological zones: the Coastal Savannah in Accra and the Deciduous Forest in Kumasi, providing useful variation in climate and housing materials. Accra has two rainfall maxima with a prolonged dry season. The mean annual rainfall is between 740 and 890 mm (Agyirifo and Otwe, 2011). Kumasi is characterised by a tropical wet and dry climate, with relatively constant temperature throughout the year. It receives an average rainfall of about 1400mm per year. The socio-economic diversity and urban character of these towns made them ideal settings for examining material choices in roof truss construction.

3.2 Research design, sampling technique, and data collection method

The study employed a convergent mixed-methods research design, combining quantitative and qualitative techniques to enhance the robustness of findings. While the quantitative data helped uncover general patterns and statistically significant relationships, qualitative insights provided contextual depth on decision-making processes.

3.2.1 Sampling strategy

Due to the unavailability of a comprehensive database on truss material usage, a purposive sampling technique was used to identify 150 homeowners in each city who had constructed houses within the last 5–10 years. Initial respondents were identified through

snowball sampling and screened to ensure they had personally engaged in decisions regarding roof truss material.

3.2.2 Data collection

Respondents' socio-demographic data (i.e., sex, age, employment status, educational attainment, marital status, and monthly income) were collected with a semi-structured questionnaire. The questionnaire also asked respondents to confirm the material selected for truss construction (wood or metal), the cost of installation, whether advice was received (yes/no), and the source of that advice (e.g., family members, craftsmen, or architects). The questionnaire was tested for reliability and validity using the content validity approach before it was administered. Content validity was ensured by consulting subject-matter experts in housing studies and sustainability research.

In-depth interviews were conducted with a subset of 40 homeowners (20 from each city) to explore homeowners' reasoning for material choice. The homeowners selected for the interviews were drawn from the survey respondents using purposive sampling. Selection was based on their willingness to participate further, diversity in socio-demographic backgrounds, and contrasting choices of roof truss materials (timber and metal). This ensured a balanced representation of perspectives for deeper exploration of homeowners' reasoning behind material selection.

The administration of the questionnaires and the interview sessions was held in English. Verbal consent was obtained from all participants, and interviews were recorded and transcribed with permission.

3.3 Data analysis and presentation

3.3.1 Quantitative analysis

Descriptive statistics (frequencies and percentages) were used to summarise socio-demographic characteristics. The frequency and corresponding percentage of each data were presented in Table 1. To examine the influence of these characteristics on truss material choice, we conducted a binary logistic regression analysis using the Statistical Package for Social Sciences (SPSS) version 20. The dependent variable was coded as a binary outcome: Wood = 0; Metal = 1. The independent variables included gender, marital status, age group, education level, income range, and receipt of third-party advice.

The model performance was assessed using Wald's χ^2 test for statistical significance of the coefficients, Cox & Snell R^2, and Nagelkerke R^2 tests for explanatory power, and classification table accuracy to assess the model's predictive accuracy. The predictive accuracy of the model was subsequently evaluated by comparing the predicted homeowners' material choice (i.e., wood or metal truss) against the observed homeowners' choice (Pampel, 2000).

3.3.2 Qualitative data analysis

The qualitative responses were analysed thematically, using inductive content analysis, to extract recurring reasons and context-specific motivations for material choice. The steps in this analysis included open coding, category generation, and theme identification.

The codes were developed independently by two researchers and later reconciled to ensure intercoder reliability. The emerging themes centred on material performance, insulation, affordability, professional recommendations, and perceptions of longevity.

4. Results and Discussion

This section presents the evidence on the socio-demographic factors that drive homeowners' decisions between wood and metal trusses in Ghana. It also weaves together outcomes from both qualitative and quantitative analyses to determine how the socio-demographic variables and expert advice impact decisions and frame these in broader theoretical concepts of sustainability transitions and material choice theory. The data revealed several structural decision points within the roofing process, including: timber versus metal trusses and whether or not to consider third-party recommendations. These decisions are not made in a vacuum, but are filtered through the lens of household characteristics.

4.1 Socio-demographic profile of homeowners

The socio-demographic profile of homeowners in the current study is presented in Table 1. Out of the 300 homeowners, 71.7% were male, and 28.3% were female. The underrepresentation of females was a notable limitation that mirrors actual ownership patterns in Ghana's urban centres and was reflected in respondent selection through snowball sampling. This gender disparity was revisited later in the policy section to propose interventions that ensure greater equity in housing decision-making. Gender inequality in property ownership continues as a significant challenge across sub-Saharan Africa. Societal structures in Ghana conventionally make men the heads of households and property owners (Oduro et al., 2011). This highlights gendered control over housing properties, which has wider implications for economic security, wealth distribution, and policy strategies that target the promotion of gender fairness in property rights. Our finding is consistent with Adzorgenu-Amponsah (2019), who found that male homeownership in Ghana constituted about 86.7%. According to Gaddis et al. (2018), women are about 20 million less in property ownership when compared to men across the region. The authors attributed this inequality to biased societal norms and inheritance laws.

The respondents were predominantly within the 31–50 age range (72.6%). As Coulson (1999) noted, homeownership connects with life cycle stages, and there is a higher tendency for homeownership among individuals above 40 in Ghana (Ghana Statistical Service, 2013). This is because people within this age class often prioritise retirement planning. A related study by Asiedu (1999) in Kumasi found that 80.2% of homeowners were between 40 and 60 years old. A large portion of homeowners (55.3%) had undergraduate qualifications, which reflects similar patterns in the study by Adzorgenu-Amponsah (2019). Education relates to increased potential for income and informed decision-making in housing investments.

Almost all the homeowners (99.3%) were employed. An analysis of the income distribution shows that 17.7% of the respondents earned between US$20–200, while the majority earned above this range. The income profile observed in this study agrees with Adediran et al. (2020), who found that housing affordability is significantly influenced by income level in developing economies. The Material

Choice Theory suggests that affordability is a significant factor that influences material selection. Employment status is a key determinant of access to housing; the availability of economic resources allows property acquisition.

The homeowners in Accra showed a stronger preference for metal trusses (63%) compared to Kumasi (52%). This difference may be attributed to higher income levels in Accra than in Kumasi.

Table 1: Socio-demographic profile of homeowners involved in the study

Socio-demographic variable	Frequency			Percentage (%)
	Kumasi	Accra	Total	
Gender				
Male	105	110	215	71.7
Female	45	40	85	28.3
Age				
20 - 30 years	2	0	2	0.7
31 - 40 years	40	45	85	28.3
41 - 50 years	67	66	133	44.3
51 - 60 years	35	33	68	22.7
>60 years	6	6	12	4.0
Educational level				
Basic school	11	10	21	7
Senior High School	45	45	90	30
Undergraduate	84	82	166	55.3
Postgraduate	12	11	23	7.7
Marital status				
Single	30	33	63	21
Married	111	111	222	74
Widowed	8	7	15	5
Employment status				
Unemployed	2	0	2	0.7
Employed	149	149	298	99.3
Monthly income (US$)				
20 – 200	25	28	53	17.7
>200	123	124	247	82.3
Preference for roof truss material				
Wood	72	45	150	50
Steel/Metal	78	95	150	50

4.2 Socio-demographic determinants of material selection

This section presents the results of a binary logistic regression analysis, complemented by qualitative insights from homeowner interviews, to examine the extent to which socio-demographic factors influence homeowners' choice of roof truss material: wood or metal. The quantitative data used in the regression model included age, sex, educational level, marital status, monthly income, employment status, and whether or not the respondent received third-party advice. The dependent variable was the material choice (coded as 0 = timber, 1 = metal). The objective of this analysis is to statistically test for significance which of these factors play an important role in the decision to choose roof truss material and provide a basis for linking socio-economic characteristics with observed changes in material choices.

In addition to the statistical analysis, insights from in-depth interviews with selected homeowners were incorporated to provide context and explain the rationale behind these material choices. The objective of this mixed-methods approach is to both statistically identify significant demographic predictors and capture the narratives and subjective factors driving homeowners' material preferences. The combination of these approaches enables a richer understanding of how factors such as income, marital status, education, and gender interact with personal values, perceived durability, affordability, and access to expert advice. The findings aim to inform policymakers and industry stakeholders about which household segments are more likely to adopt sustainable and long-lasting roofing solutions and why.

Table 2 presents the logistic regression results. The model showed a predictive accuracy of 79.7%, with significant effects observed for marital status, education, gender, income level, and third-party suggestions ($p<0.05$). Other variables, such as age and employment status, were not statistically significant in the model. The Cox & Snell R^2 and Nagelkerke R^2 values of 0.406 and 0.542, respectively, show a substantial explanatory power of the model.

Regarding the variables with statistically significant effects on the choice of roof truss materials, the analysis proved that females were 2.1 times more likely to opt for wood over metal. This preference was supported by qualitative insights, as one female respondent in Kumasi noted: "I chose timber because it's what I am used to. The carpenter said it would work just fine, and I trusted him." Another female homeowner in Accra stated that: "I didn't want to go for metal because once they mentioned the cost, I stopped thinking about it. Wood is what I grew up seeing, and I trust it. For me, as long as it covers the house, I'm okay with timber." These quotes underscore the influence of familiarity, which aligns with the observed gendered pattern of material selection.

Unmarried individuals (i.e., single homeowners) were 56% less likely to select metal trusses compared to married individuals. A male respondent who was single stated: "I don't see the need to spend too much on metal if I am building just for myself. Maybe if I had a family, I would think differently." This reflection suggests how life stage and future planning can influence material choices. Homeowners earning between US$20–200 had 42.6 times greater odds of selecting wood trusses compared to respondents who earn above US$200. One homeowner made the following remarks:

"Trusses made from steel are more expensive than wood; however, they last longer in service. I decided to spend a little bit more because I could afford it." [Homeowner 12, Accra, November 2023].

Educational achievement also influenced preferences; senior high school graduates were 4.7 times more likely to choose wood over metal compared to undergraduates. One participant from Kumasi, who was a senior high school graduate, stated: "I went with timber because it was the cheapest, and I could not afford metal. It's a temporary house anyway… for me, metal is just safer and more lasting, but I had to wait until I could afford it. It is too expensive up front." [Homeowner 5, Kumasi, December 2023]. These responses reflect how affordability and perceived building permanence intersect with educational background and income to shape roof truss material choices.

The regression results further showed that those who received third-party advice leaned towards metal trusses. One respondent cited professional assistance: "A woodworker recommended metal trusses for my large, open-span rooms to avert sagging, which often occurs with wood." [Homeowner 100, Accra, November 2023].

Similarly, another respondent from Kumasi commented: "My brother is a building construction expert, and he advised me to use metal because it handles rain and termites better. I would not have known this on my own." These transcripts show how technical advice from informed sources can shift homeowners' preferences towards one material.

Our findings align with the Material Choice Theory, which suggests that cost and social influence are central to material selection (Ashby, 2005). Higher-income homeowners possess greater purchasing power to invest in long-lasting materials like metal, while married respondents may be more likely to prioritise family security and long-term value, thereby preferring durable roofing systems. The impact of third-party advice on material choice also suggests that access to expert knowledge may reduce reliance on traditional norms or cost-based decision-making. The integration of the qualitative responses underscores how socio-demographic variables translate into practical material selection decision pathways, blending economic realities, social influence, and personal values. Our study further responds to a significant gap by employing Sustainability Transitions Theory to examine how socio-demographic factors shape material transitions, particularly in self-constructed or informal urban housing, a common mode of domestic building in Ghana and across most of Africa. In contrast to the concentration of attention across STT-based studies toward technological or policy-initiated alterations, our findings indicate that socio-demographic micro-level considerations play a notable role in shaping timber-to-metal transitions by private residential builders.

Table 2: Logistic regression results of the socio-demographic factors that influence homeowners' choice of materials for roof truss construction

Predictor factor / Socio-demographic factor	B	SE	Wald	df	p-value	Exp(B)
Gender (Male – 0; Female – 1)	.730	0.369	3.923	1	.048	2.076
Educational level (Undergraduate)			23.939	3	.000	
Educational level (Basic education)	22.534	13152.403	.000	1	.999	61.96
Educational level (Senior High School)	1.564	.359	18.989	1	.000	4.777
Educational level (Postgraduate level)	-.572	.684	.699	1	.403	.564
Age (41 – 50 years)			4.548	4	.337	
Age (20 – 30 years)	19.964	26257.217	.000	1	.999	29.917
Age (31 – 40 years)	-.648	.382	2.875	1	.090	.523
Age (>60 years)	-.827	17462.340	.000	1	1.000	.437
Age (51 – 60 years)	.286	.412	.481	1	.488	1.331
Marital status (Married)			4.380	2	.112	
Marital status (Single)	-.829	.396	4.380	1	.036	.436
Marital status (Widow)	20.360	9217.683	.000	1	.998	56.928
Employment status (Employed – 0; Unemployed – 1)	19.832	25159.746	.000	1	.999	63.995
Monthly income (US$) (>200– 0; 20 – 200 – 1)	3.751	.593	40.023	1	.000	42.577
Third-party advice on material selection (No – 0; Yes – 1)	-.922	.342	7.271	1	.007	.398
Constant	-.947	.356	7.071	1	.008	.388

Note: χ^2 p value = 0.158

5. Conclusion and Policy Implications

This study examined the socio-demographic factors influencing homeowners' selection of roofing truss materials in two major Ghanaian cities, Kumasi and Accra. We found that marital status, education, gender, income level, and third-party suggestions significantly shape homeowners' decisions, while other factors, such as age and employment status, showed no statistical significance. These findings provide a nuanced understanding of the intersection between personal demographics and material choice in urban housing construction in Ghana. Our study's findings contribute to the scholarly discourse on material preference in sub-Saharan Africa by highlighting the influence of non-technical factors, such as socio-demographic characteristics and social advice, on structural construction decisions. This study brings forward the micro-level determinants that drive grassroots changes in material use, unlike existing literature, which focuses on technical structural attributes or policy environments. The implications of this research are particularly relevant given Ghana's ongoing urbanisation and increasing housing demand. In the face of the rapid expansion of the building construction industry, understanding the demographic dynamics behind roof truss material preferences offers a valuable entry point for both policy and practice towards achieving sustainability targets. Future research could broaden this study by investigating similar socio-demographic influences on material choices in other sub-Saharan African cities to validate and enrich these findings.

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Data availability

The authors confirm that the data supporting the findings of this study are available within the article.

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