Open Constr. Build. Technol. J.
DOI: 10.2174/0118748368514661261022100332, 2026, 20, e18748368514661
ISSN: 1874-8368

SUPPLEMENTARY MATERIAL **OPEN ACCESS**

Architects' Awareness and Adoption of Internet of Things (IoT) in Smart Housing in Lagos, Nigeria

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Cite as: Akinola A, Daisi O, Fowosere P, Ladokun C, Akinola E. Architects' Awareness and Adoption of Internet of Things (IoT) in Smart Housing in Lagos, Nigeria. Open Constr Build Technol J, 2026; 20: e18748368514661. http://dx.doi.org/10.2174/0118748368514661261022100332

Received: June 18, 2026
Revised: August 27, 2026
Accepted: September 02, 2026
Published: November 05, 2026

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EVALUATION OF ARCHITECTS' AWARENESS AND ADOPTION OF INTERNET OF THINGS (IOT) IN SMART HOUSING IN LAGOS, NIGERIA

QUESTIONNAIRE

Dear Respondent,

We are final-year undergraduate students of the Department of Architecture at Covenant University. This questionnaire is designed to evaluate the level of knowledge, perception, and challenges associated with IoT adoption in architectural practice. This study is part of the requirements for us to be awarded the Bachelor of Science (B.Sc.) degree in Architecture by Covenant University. All information provided is for this research and will be kept confidential and used solely for academic purposes. Thank you for your time and participation.

SECTION A: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

Please tick as appropriate [ ]

1. Gender:

Male [ ] Female [ ]

2. Age Range:

Below 25 years [ ] 25-34 years [ ] 35-44 years [ ] 45-54 years [ ] 55 years and above [ ]

3. Years of Experience in Architecture:

Less than 5 years [ ] 5 – 10 years [ ] 11 – 15 years [ ] Above 15 years [ ]

4. Highest Educational Qualification:

B.Sc. in Architecture [ ] M.Sc. in Architecture [ ] Ph.D. in Architecture [ ] Other (Please specify):_____

SECTION B: AWARENESS OF IOT TECHNOLOGIES AMONG ARCHITECTS

5. Have you heard of the Internet of Things (IoT) for smart housing?

YES [ ] NO [ ]

6. What are your primary sources of information about IoT in architecture?

(Tick all that apply) Seminars and Conferences [ ] Online Courses [ ] Colleagues and Peers [ ] Academic Journals [ ] Social Media [ ] Other (Please specify): _____

7. How aware are you of the following IoT Smart Technologies?

	IOT Technologies	Very Aware	Aware	Neutral	Unaware	Very Unaware
Energy Efficiency & Smart Lighting	Smart Thermostats and HVAC Systems					
	Automated lighting systems with motion sensors					
	Solar energy monitoring system,					
	Smart Meters					
Smart Home Automation	Voice-controlled home assistants (Alexa, Google Home)					
	Automated window blinds and curtains					
	Smart Appliances(smart Refrigerators, ovens, TVs)					
Smart Security & Surveillance	Smart locks with remote access					
	Surveillance Cameras					
	Biometric authentication systems					
Water & Waste Management	Smart water heaters for efficiency					
	Automated garbage disposal system					
	Smart irrigation systems for gardens					

8. Have you ever incorporated IoT smart features into a housing project? YES [ ] NO [ ]

9. If No, why not? *(Tick all that apply)*

Lack of awareness [ ] High cost of implementation [ ] Lack of client interest [ ] Limited technical knowledge [ ] Infrastructure limitations [ ] Other (Please specify): _____

10. How often do clients request IoT smart features in their housing projects?

Never [ ] Rarely [ ] Sometimes [ ] Often [ ] Always [ ]

11. Do you believe IoT-enabled designs will increase property value?

YES [ ] NO [ ] MAYBE [ ]

SECTION C: FACTORS INFLUENCING THE ADOPTION OF IOT TECHNOLOGIES

12. How important is IoT-enabled smart housing design in Lagos? Not Important [ ] Slightly Important [ ] Moderately Important [ ] Very Important [ ] Extremely Important [ ]

13. How much do you agree that the following factors influence your decision to adopt IoTs for smart housing?

	Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Technological Factors	Perceived ease of use (how easy IoT technologies are to install and operate)					
	Perceived usefulness (how beneficial IoT is to housing projects)					
	Compatibility with existing housing infrastructure and designs					
	Fit with users' lifestyles and needs (IoT aligning with daily routines					
Economic Factors	Cost of IoT devices and installation					
	Cost of retrofitting existing buildings					
	Availability of financial incentives (*e.g.*, government subsidies)					
Institutional & Policy Factors	Perception of long-term cost savings					
	Government policies supporting IoT adoption					
	Availability of professional training on IoT technologies					
	Regulatory frameworks ensuring IoT compliance and security					
	Incentives from government and industry to adopt IoT					
Social & Cultural Factors	Client demand					
	Perceived prestige or modernity associated with IoT-enabled smart housing					
	Adoption of IoT by colleagues and other professionals in the field					

14. Do you believe IoT will significantly impact the future of architecture in Nigeria?

YES [ ] NO [ ]

SECTION D: CHALLENGES HINDERING THE ADOPTION OF IOT TECHNOLOGIES

15. How much do you agree that the following challenges hinder your decision to adopt IoTs for smart housing?

16. How willing are you to adopt IoT smart solutions in future projects?

Not Willing [ ] Slightly Willing [ ] Moderately Willing [ ] Very Willing [ ] Extremely Willing [ ]

	Challenges	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Technological Challenges	Interoperability issues (device compatibility problems across IoT platforms)					
	Cybersecurity vulnerabilities (*e.g.*, risk of hacking and data breaches)					
	Complexity of integrating IoT devices into architectural workflows					
Economic Challenges	High cost of IoT devices and infrastructure					
	Maintenance and operational costs of IoT systems					
	Limited affordability for low- and middle-income households					
Institutional & Policy Challenges	Absence of supportive government policies and regulations					
	Limited availability of professional training on IoT					
	Weak regulatory frameworks for IoT security and privacy					
Social & Cultural Challenges	Cultural resistance to adopting new technology					
	Limited public awareness of IoT benefits					
	Social influence (lack of peer or client encouragement)					
Security & Privacy Concerns	Concerns about data privacy and ethical data usage.					
	Fear of potential cyber-attacks and data breaches					

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