SECTION A – BACKGROUND INFORMATION

Instruction: Please complete this section by writing or ticking the relevant answers as appropriate.

1. **Gender:** (a) Male [✓] (b) Female [ ]
2. **Age** (a) Less than 20 years [ ] (b) 21-30 years [ ] (c) 31-40 years [ ] (d) 41-50 years [✓] (e) Over 50 years [ ]
3. **Highest Educational Qualification**: (a) OND [ ] (b) B.Sc./HND [ ] (c) PGD/MSc. [✓] (e) Ph.D. [ ] (f) Others (Please indicate) _____
4. **Current Position in the Office**: (a) Junior Staff [ ] (b) Senior Staff [✓]
5. **Years of Experience**: (a) Less than 5 years [ ] (b) 6 – 10 years [ ] (c) 11-15 years [ ] (d). 16-20 years [✓] (e). Over 20 years [ ]
6. **Company's age:** (a) 1-5 years [ ] (b) 6 – 10 years [✓] (c) 11-15 years [ ] (d) 16-20 years [ ] (e) Over 20 years [ ]
7. Number of employees:(a) 1-5 [✓] (b) 6 – 10 [ ] (c) 11-15 [ ] (d) 16-20 [ ] (e) Above 20 [ ]
8. The following items describe the digital technologies that are normally used for construction projects. Please rate the extent of usage digital technologies that you have adopted in your construction projects. (Please tick all that is applicable).

	Very High	High	Average	Low	Very Low
Building Information Modelling (BIM)		✓			
Internet of Things (IoT)	✓				
Cloud Computing		✓			
Augmented Reality (AR)		✓			
Virtual Reality (VR)					
Mobile Technology (Smart Phones)		✓			
Project/Construction Management Software		✓			
Unmanned aerial vehicle (Drone Technology)		✓			
Blockchain Technology		✓			
Additive Manufacturing (3D Printing)		✓			

SECTION B – ADOPTION OF DIGITAL TECHNOLOGIES

This is to measure the adoption of digital technologies in well construction in the Nigerian oil and Gas industry. Kindly tick (✔) the spaces provided as appropriate using the scale below.
KEY: 5= Strongly Agree, 4=Agree, 3= Moderately Disagree, 2=Disagree, 1= Strongly Disagree

SECTION C – DETERMINANTS OF DIGITAL TECHNOLGY ADOPTION IN CONSTRUCTION INDUSTRY

	Statement	Strongly Agree	Agree	Moderately	Disagree	Strongly Disagree
	Digital Technologies Applications	**5**	**4**	**3**	**2**	**1**
1	Our firm uses digital technologies to streamline project data collection processes.		✓			
2	Digital tools are effectively employed in analysing construction project trends and comparable.	✓				
3	Our firm utilizes digital platforms for real-time communication with clients during construction projects.	✓				
4	We integrate digital mapping and geographic information systems (GIS) in construction site analysis.		✓			
5	Our firm employs Building Information Modelling (BIM) to support project planning and execution.	✓				
	Digital Technology Infrastructure	**5**	**4**	**3**	**2**	**1**
1	Our firm possesses the necessary hardware and software to support advanced digital construction processes.		✓			
2	We have a robust IT infrastructure that enables seamless data sharing among construction team members.		✓			
3	Our firm invests in regular updates and upgrades to maintain a modern digital technology environment.	✓				
4	Digital tools are integrated into our workflow, allowing for efficient data processing and analysis.		✓			
5	The firm's digital infrastructure ensures data security and protection of project information.	✓				
6	Our IT resources facilitate remote access to construction project management systems and databases.	✓				
	Digital Technology Policy	**5**	**4**	**3**	**2**	**1**
1	Our firm has a clear policy in place that outlines the acceptable use of digital technologies for construction projects.	✓				
2	Employees receive training on the proper utilization of digital tools and platforms for construction projects.		✓			
3	Our digital technology policy addresses issues related to data privacy and confidentiality.		✓			
4	The firm's policy encourages the exploration and adoption of new digital tools to enhance construction practices.		✓			
5	Our policy includes guidelines for troubleshooting and resolving technical issues related to digital tools.		✓			

This is to measure the determinants of digital technology adoption in well construction in the Nigerian oil and Gas industry. Kindly tick (✔) the spaces provided as appropriate using the scale below.

KEY: 5= Strongly Agree, 4=Agree, 3= Moderately Disagree, 2=Disagree, 1= Strongly Disagree

	Statement	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree
	Technological Factor- Perceived Benefits	5	4	3	2	1
1	Use of digital technology has improved our project management efficiency	✓				
2	Digital technology use has enhanced the quality of our construction projects		✓			
3	Using digital tools has led to cost savings in our construction processes.		✓			
4	The benefits of digital technology outweigh the costs involved in its use	✓				
	Technological Factor- Compatibility	5	4	3	2	1
1	The digital technologies we use are compatible with our existing systems	✓				
2	Digital technology aligns well with our firm's construction practices.		✓			
3	The integration of digital technology with our workflows has been smooth.	✓				
4	Our firm's work culture supports the use of digital technology.		✓			
	Technological Factor- Complexity	5	4	3	2	1
1	Learning to use new digital technologies is challenging for our employees.	✓				
2	The digital tools we use are complicated and difficult to understand.	✓				
3	Implementing digital technology in our projects requires significant effort.	✓				
4	The complexity of digital technology hinders its effective use in our firm.		✓			
	Organizational Factor- Firm Size	5	4	3	2	1
1	The size of our firm influences our ability to adopt digital technology	✓				
2	Larger firms have more resources to invest in digital technology.	✓				
3	Our firm's size affects our capacity to implement sustainable practices.	✓				
4	Smaller firms face more challenges in adopting digital solutions.		✓			
	Organizational Factor- Top Management Support	5	4	3	2	1

1	Our top management actively supports the use of digital technology	✓				
2	Leadership in our firm is committed to integrating digital tools in projects		✓			
3	Top management allocates sufficient resources for digital technology use	✓				
4	There is strong encouragement from top management to use digital technology					
	Organizational Factor- Resource Availability	**5**	**4**	**3**	**2**	**1**
1	Our firm has the financial resources to invest in digital technology.	✓				
2	We have access to necessary technical expertise for digital technology use		✓			
3	Sufficient time is allocated for training on new digital tools		✓			
4	Our firm can easily acquire the hardware and software needed for digital technology.	✓				
	Environment Factors-Competitive Pressure	**5**	**4**	**3**	**2**	**1**
`1	Our competitors' use of digital technology drives us to adopt similar tools		✓			
2	There is pressure from the industry to keep up with digital advancements.		✓			
3	Digital technology use is necessary to maintain our competitive edge		✓			
4	Digital technology use is necessary to maintain our competitive edge		✓			
	Environment Factors-Regulatory Support	**5**	**4**	**3**	**2**	**1**
1	Government policies encourage the use of digital technology in construction			✓		
2	There are regulatory incentives for using digital tools in construction			✓		
3	Compliance with regulations requires the use of digital technology		✓			
4	Regulatory bodies provide support for digital technology use.			✓		

SECTION D –CONSTRUCTION PROJECT DELIVERY

Please rate (√) the extent to which you agree with the following statement in relation to building project delivery in well construction in the Nigerian oil and Gas industry.

KEY: 5=Strongly Agree, 4=Agree, 3=Moderately Disagree, 2 = Disagree, 1 = Strongly Disagree

	Statement	**Strongly Agree**	**Agree**	**Moderately Agree**	**Disagree**	**Strongly Disagree**
	TIME	**5**	**4**	**3**	**2**	**1**
1.	The project was completed within the scheduled timeframe.		✓			

2.	Project milestones were achieved as planned without significant delays.	✓				
3.	Delays, if any, were effectively managed and communicated to stakeholders.		✓			
4.	The project schedule was realistic and achievable from the onset.		✓			
	COST	5	4	3	2	1
1.	The project was completed within the allocated budget.		✓			
2.	Cost estimates were accurate and reflected the actual expenses incurred.		✓			
3.	There was effective cost control and monitoring throughout the project lifecycle.		✓			
4.	Cost overruns, if any, were managed efficiently and communicated to all stakeholders.		✓			
	QUALITY	5	4	3	2	1
1.	The project deliverables meet the specified quality standards and requirements.		✓			
2.	Quality control processes were effectively implemented throughout the project.		✓			
3.	Client feedback indicates a high level of satisfaction with the quality of the project outcomes.		✓			
4.	There were minimal defects and rework required, reflecting the high quality of the project execution.	✓				
	SAFETY	5	4	3	2	1
	The project team consistently adheres to safety protocols and guidelines.		✓			
	Adequate safety measures are in place to prevent accidents and injuries during the project.	✓				
	Safety training and education are regularly provided to all project personnel.	✓				
	There is a prompt and effective response to safety incidents and hazards identified during the project.	✓				
	CLIENT SATISFACTION					
1	The project meets the client's expectations in terms of quality and scope.	5	✓ 4	3	2	1
2	Communication with the client is clear, consistent, and effective throughout the project.	✓				
3	The project is completed within the agreed-upon timeframe, satisfying the client's schedule requirements.		✓			
4	The project is completed within the budget, meeting the client's financial expectations.		✓			

SECTION C: Sustainability of Construction Projects

This is to measure the sustainability of projects in well construction in the Nigerian oil and Gas industry. Kindly tick (✔) the spaces provided as appropriate using the scale below.

KEY: 5= Strongly Agree, 4=Agree, 3= Moderately Disagree, 2=Disagree, 1= Strongly Disagree

	Statements	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree
	Environmental Sustainability	**5**	**4**	**3**	**2**	**1**
1	The project implements practices to minimize waste generation.	✓				
2	The project uses energy-efficient technologies and practices		✓			
3	The project utilizes sustainable and eco-friendly materials.					
4	The project has a minimal negative impact on the surrounding environment	✓				
	Social Sustainability	**5**	**4**	**3**	**2**	**1**
1	The project actively engages with local communities for input and feedback		✓			
2	The project ensures high standards of health and safety for all workers.		✓			
3	The project creates job opportunities for local residents		✓			
4	The project considers and promotes social equity in its planning and execution.	✓				
	Governance Sustainability- Accountability	**5**	**4**	**3**	**2**	**1**
1	The organization conducts regular independent audits		✓			
2	The organization has an active anti-corruption commission	✓				
3	The financial accounts for the past financial year have been inspected and approved by the relevant authorities	✓				
4	Contracts, tenders, budgets, and financial accounts are formally published on time	✓				
	Governance Sustainability-Transparency	**5**	**4**	**3**	**2**	**1**
1	The municipal structure, rules, regulations, and performance standards of various services and products are publicly available		✓			
2	The selection process for local community leaders is conducted fairly	✓				
3	Government documents and information are readily accessible to the public		✓			
4	The public has the opportunity to review budget and financial reports	✓				
5	There are mechanisms in place for providing feedback or rating the openness and fairness of government operations		✓			
6	The municipality provides various publicizing mediums such as information centers, public hearings, mobile apps, websites, bulletins, and banners	✓				
	Governance Sustainability-Participation	**5**	**4**	**3**	**2**	**1**

1	Local leaders regularly participate in governance meetings with high attendance		✓			
2	There is a public forum available for sharing views and information		✓			
3	Referenda, citizens' initiatives, and plebiscites are available, and citizens are aware that they can participate in local government activities		✓			
4	There is an effective assessment of citizen outreach and their participation in local governance meetings		✓			
	Governance Sustainability-Effectiveness	**5**	**4**	**3**	**2**	**1**
1	Government projects are completed within the agreed timelines		✓			
2	Complaints are responded to in a timely manner		✓			
3	The municipality is effective at addressing public problems		✓			
4	Municipal management, elected officials, and other public and private service providers are regularly evaluated	✓				
5	The municipality is effective in implementing policies		✓			
	Governance Sustainability-Equality	**5**	**4**	**3**	**2**	**1**
1	The administration and political culture are unbiased.		✓			
2	A citizens' charter is available and accessible		✓			
3	The municipality actively promotes gender equality		✓			
4	The municipality is inclusive of ethnically and socially vulnerable groups		✓			

SECTION C: BARRIERS INFLUENCING ADOPTION OF DIGITAL TECHNOLOGY

This is to measure the barriers influencing the adoption of digital technologies in well construction delivery in the Nigerian oil and gas industry. Please kindly answer all questions and use the scale below.

Key: 5= Strongly Agree, 4=Agree, 3=Moderately Disagree, 2=Disagree, 1= Strongly Disagree

	Statements	**Strongly Agree**	**Agree**	**Moderately**	**Disagree**	**Strongly Disagree**
		5	**4**	**3**	**2**	**1**
1.	There is a lack of awareness about digital technologies among industry professionals.		✓			
2.	There is limited understanding of digital technologies among stakeholders in the industry.		✓			
3.	There is a shortage of in-house professionals with expertise in digital technologies.		✓			
4.	Competent professionals in digital technologies are scarce in the labor market.		✓			
5.	The high cost of implementing digital technologies is a significant barrier.	✓		✓		
6.	Other stakeholders are reluctant to adopt digital technologies.		✓			

7.	Industry leadership has not effectively communicated the benefits of digital technologies.		✓			
8.	There is a lack of resources available to acquire digital technologies and tools.		✓			
9.	There are conflicts in defining professional responsibilities related to digital technology.		✓			
10.	People's inability or refusal to learn new digital technologies and processes is a barrier.	✓				
11.	There is a waste of time and human resources due to the adoption of digital technologies.	✓				
12.	Professional roles and responsibilities related to digital technologies are unclear.				✓	
13.	There are no clear policies and regulations regarding intellectual property in digital technologies.				✓	
14.	Government agencies have not enforced regulations related to digital technology adoption.				✓	
15.	Industry leadership has not enforced digital technology-related policies effectively.				✓	
16.	There is a lack of cooperation among professionals regarding digital technology projects.				✓	
17.	Firms within the industry do not cooperate effectively on digital technology projects.				✓	
18.	There is a lack of trust among professionals concerning digital technology implementations.			✓		
19.	There is a lack of trust among firms regarding digital technology collaborations.			✓		
20.	There are no standardized guidelines and standards for digital technologies available.			✓		
21.	Digital technologies used in the industry suffer from compatibility and interoperability issues.		✓			
22.	Clients lack awareness about the benefits and usage of digital technologies.		✓			
23.	Clients show little interest in adopting digital technologies.		✓			
24.	There is general satisfaction with existing work methods and processes.			✓		