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INFRASTRUCTURE DELIVERY SYSTEM FOR AFFORDABLE HOUSING IN THE NIGERIAN CONSTRUCTION INDUSTRY :

AN APPROACH USING VIABLE INFRASTRUCTURE DELIVERY MODEL (VIDM)

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Motivation/Research Problem

- Inadequate Basic Infrastructure across the different sectors in Nigeria
- Poor Policy Formulation / Ineffective Policy Implementation
- Insufficient research on Stakeholders' management in PPP arrangement for Infrastructure delivery in Nigeria
- This has led to numerous failed affordable housing schemes in Nigeria.



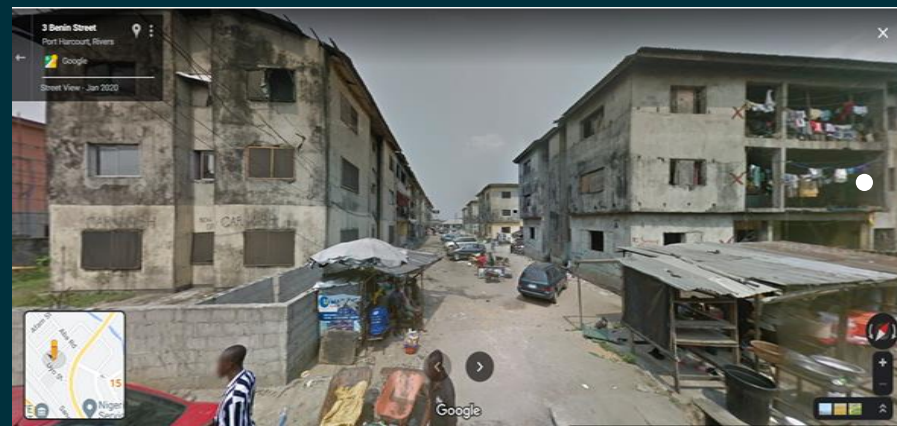
Research Background



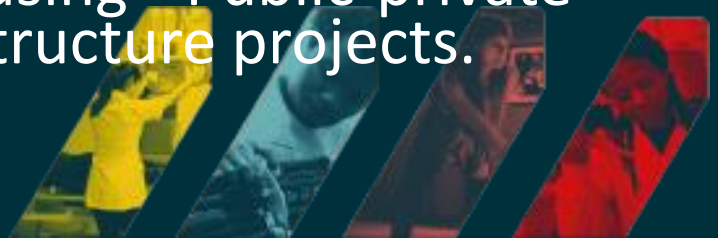
Stakeholder challenges that could lead to Failed Affordable Housing in Public-private partnership (PPP) infrastructure projects.

lack of a systems approach for affordable housing Projects.

Understanding the factors driving infrastructural Delivery Systems in the construction sector and exploring the hurdles to adopting the IDS Model



Stakeholder challenges that could lead to Failed Affordable Housing Public-private partnership (PPP) infrastructure projects.





Research Aim:



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This Research aims To Develop an Infrastructure Delivery Systems (IDS) Conceptual Framework that will address Policy Implementation for Affordable Housing Projects in Nigeria's Construction Industry (NCI)



Research Objectives

- To review the literature on challenges that contribute to failed affordable Housing Infrastructural Delivery Systems in Nigeria.
- To identify Critical Models and frameworks relevant to support IDS organisations in Nigeria.
- To Explore Stakeholders' views and practises related to IDS for the Nigerian Construction industry.
- To Investigate the Policy Process for Affordable Housing Scheme
- To Develop, modify and adapt the model to address failed infrastructural Projects in Nigeria's Construction Industry.

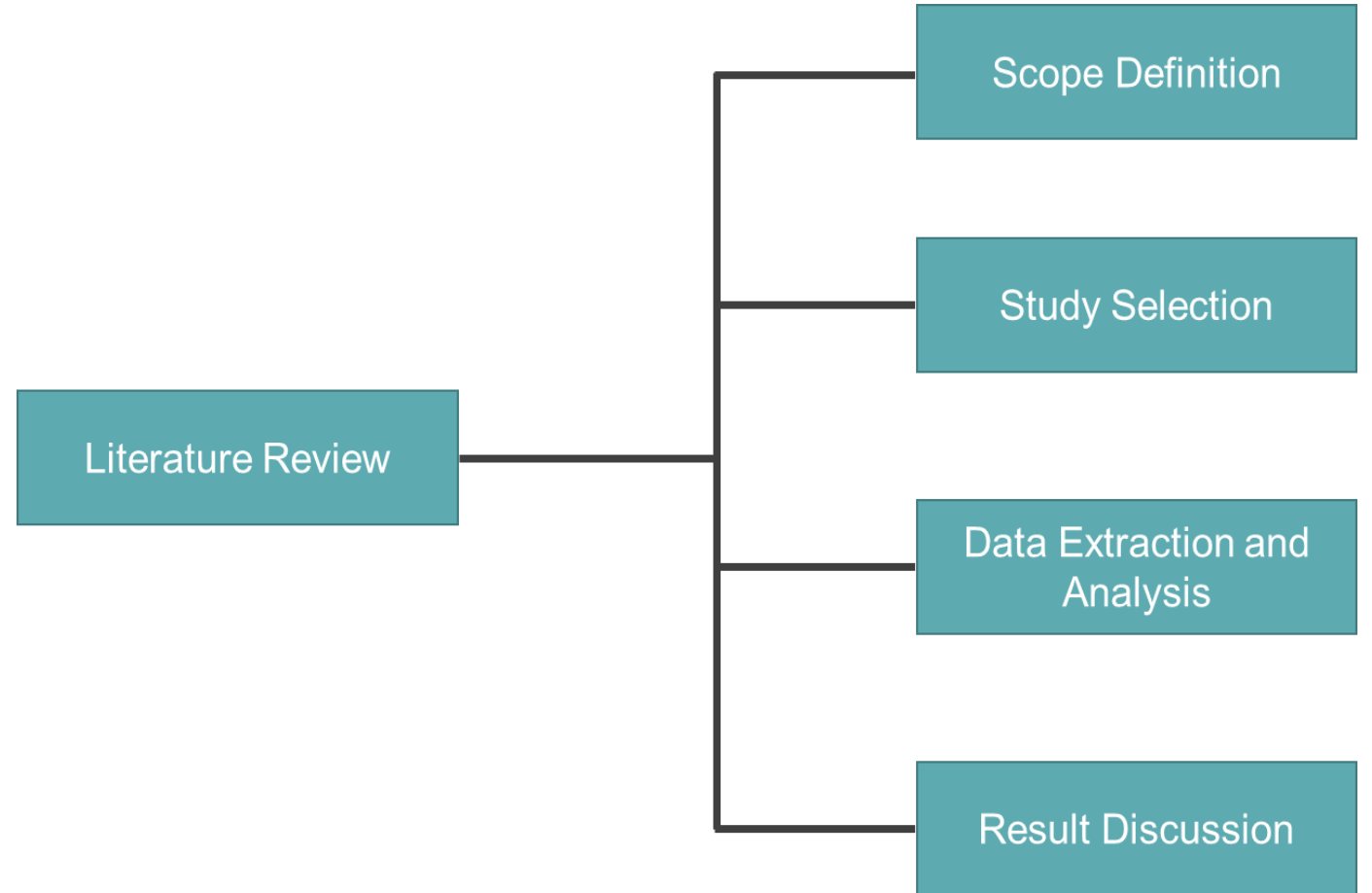




Literature Review



- Systemic Approach to Infrastructure Delivery
- Interdependency Planning & Management Framework
- Infrastructure Project Lifecycle
- Critical Success Factors for IDS





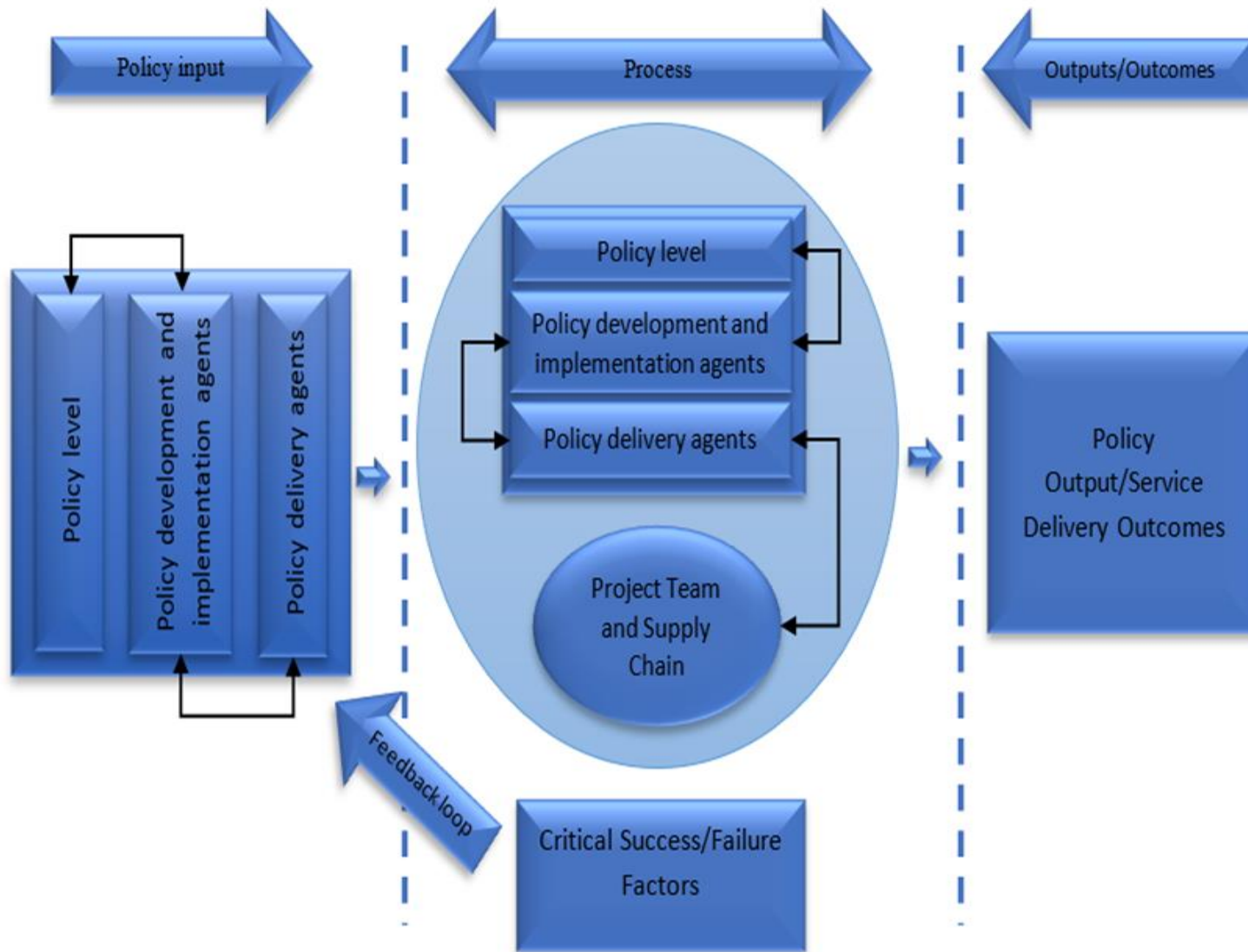
Literature Key Findings

MODELS	NAME	AUTHOR/YEAR	TITLE	PROS	CONS
	Systems approach Infrastructure Delivery (SAID)	Andrew McNaughton, Chair, Review Steering Group, 2019	A review of how systems thinking can be used to improve the delivery of complex infrastructure projects	SAID is a model for applying systems thinking to project delivery that has been welcomed enthusiastically by Project 13's leaders.	Complex projects bring together physical assets, technology, and digital information in the form of a Building Information Model (BIM) or a "digital twin" to deliver new or improved infrastructure services like mobility and clean energy. 2. Users drive SAID. It requires infrastructure owners and operators to convert demands into precise outputs
	Interdependency Planning and Management Framework (IP&M F)	Rosenberg & Carhart, 2014	Development of a Proposed Interdependency Planning and Management Framework	Investigation into the Development of a Framework for the Identification and Appraisal of Infrastructure Interdependencies with Application to Critical UK Infrastructure: Technical Report for Infrastructure UK.	1. Specifically developed for the United Kingdom Infrastructure 2. Other tools could not be used to implement the framework 3. Not all elements have been tested in all Case study
	Infrastructure Projects' Lifecycle (IPL)	Wesam Salah Alaloul 1, Muhammad Altaf 2, Muhammad Ali Musarat 3, Muhammad Faizal 4	Life Cycle Assessment and Life Cycle Cost Analysis in Infrastructure Projects: A Systematic Review	the process that provides the ability to thoroughly identify and evaluate the environmental and social consequences of infrastructure paving systems across their lifetime.	1. materials extraction and end life of the project are omitted and therefore not Considered 2.
	Viable Infrastructure Delivery Model (VIDM)	Bankole Awuzie and Thabiso Godfrey Monyane, 2020	Conceptualizing Sustainability Governance Implementation for Infrastructure Delivery Systems in Developing Countries: Success	1. This study highlights essential success elements for designing successful sustainable governance structures of a typical infrastructure delivery (ID) system using a cybernetic system framework. 2. the viable infrastructure delivery systems model (VIDM) also Provides success elements for ID system environmental regulation.	1. No Significant drawback identified
	National Infrastructural System Model (NISMOD)	Curacao, 2018	National infrastructure systems modelling to support sustainable and resilient infrastructure development	1. Comprehensive Database 2. Makes evidence-based decision	NISMoD is developed for cities, islands, countries, and regions. Evidence-based planning supports governments and decision-makers in achieving national development plans with better knowledge of demographical, economical, and climate





VIDM MODEL



A viable Infrastructural Delivery Model that is used for the implementation of organisational structure for effective project policy delivery





Why the VIDM?



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- It provides a systemic approach to Infrastructure delivery
- It offers a real-time monitoring and evaluation system rooted within infrastructure delivery systems
- Such system(s) also promotes self-governance within IDS, fostering inter- and intraorganizational and multi-layered relationships within the infrastructure project environment





Research Scope and Focus



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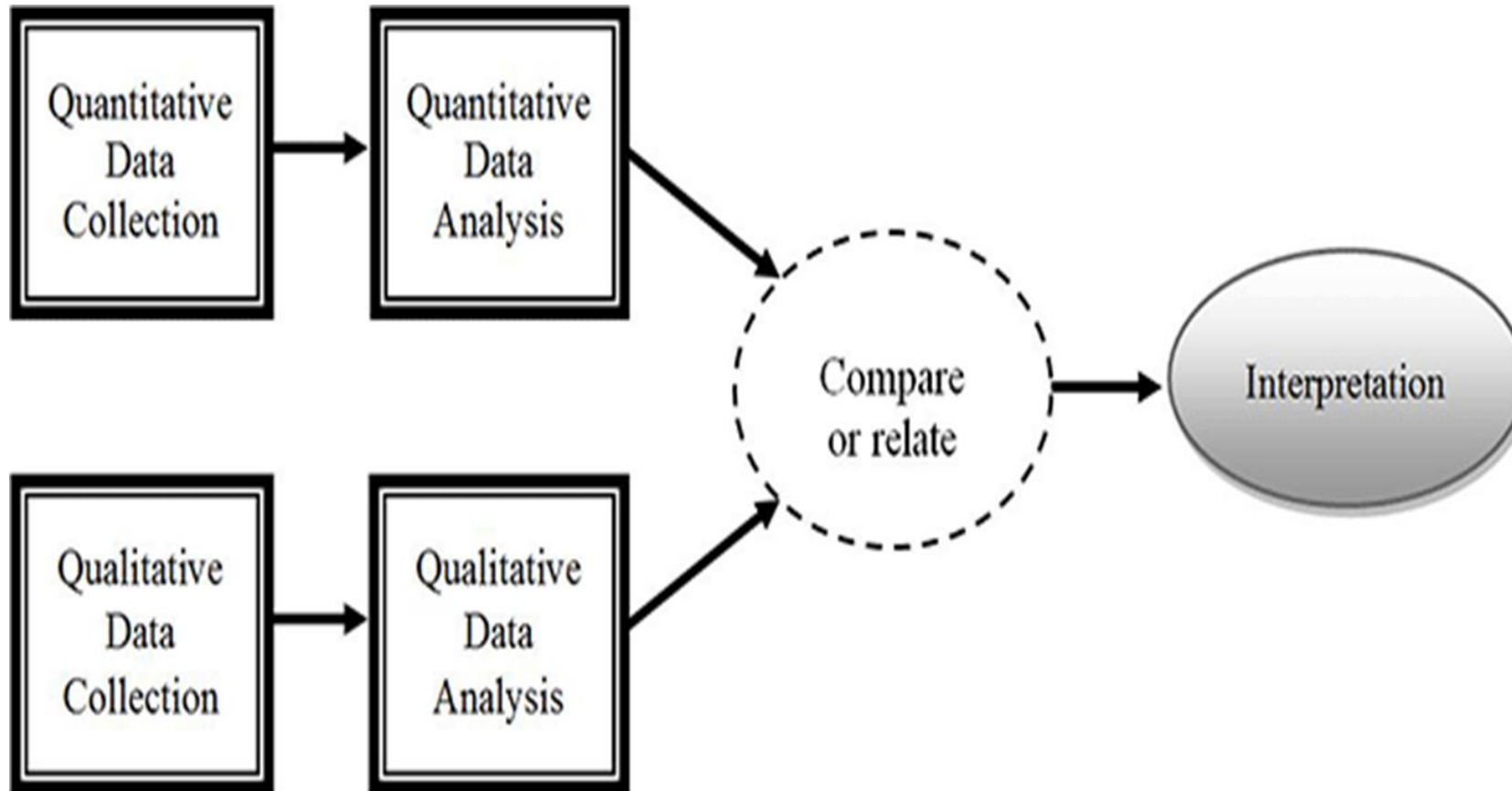
This research focuses on the infrastructure delivery system for affordable housing projects in the South-South zone of Nigeria.

The project, which is either in the conception or construction phases, is compared.



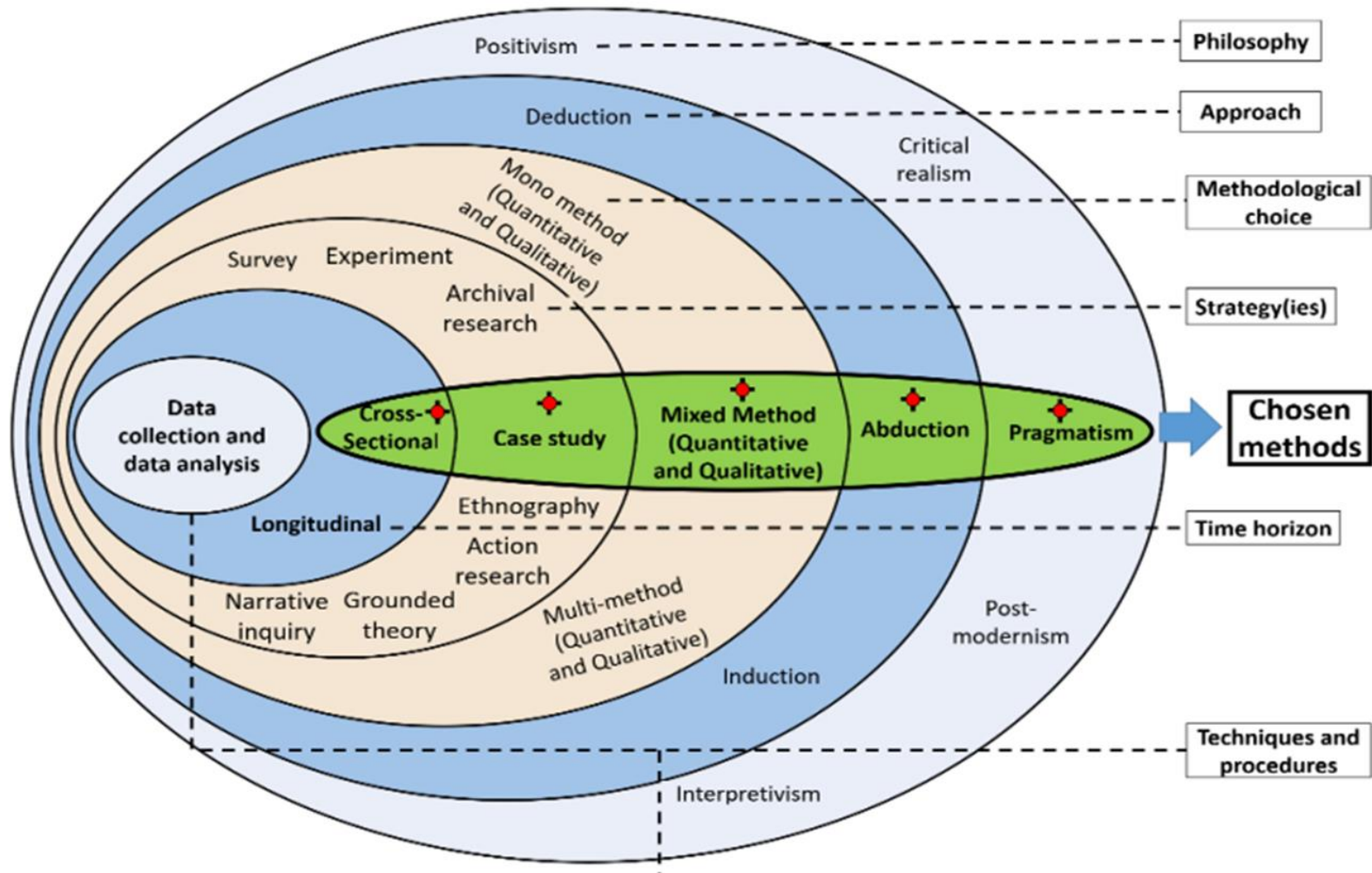


Research Methodology



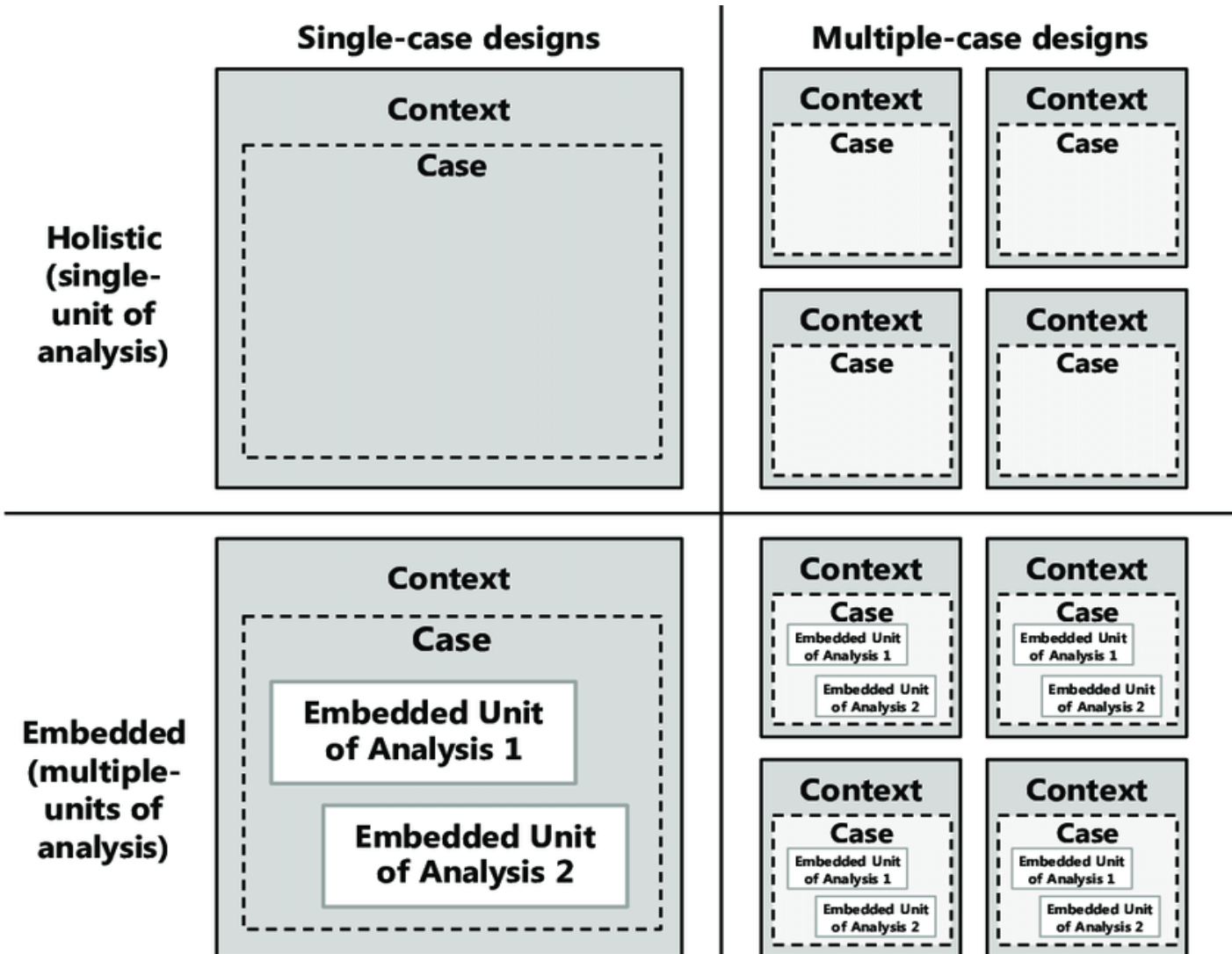


Research Methodology





Research Methodology



Expected Contributions



- To advance the body of knowledge by developing a novel conceptual Framework in Infrastructure Delivery in Nigeria and Comparing its usability.
- To unravel the multi-layered intra- and inter-organisational relationship between the different stakeholder involvement in infrastructural development in Nigeria





Work done to Date?



**Theoretical-Literature
review, Research
question**



**Attended Trainings
and Workshops**



**Acquired ethical
approval for data
Collection**



**Presented a paper at the
SPARC conference and
co-Chair a session**



**Data Collection Stage
And Analysis**



Key Findings ?

Contributing factors.....

Construction project Initiation failure (lack of interest, inconsistent government policy, inflation)

Pre-construction project failure (conflicting interest, insecurity, inflation, and lack of basic amenities)

Construction project delivery failure (unforeseen event, inflation, corruption, poor supervision, labour shortage)

Post-construction project failure (corruption, change in government, stakeholders' overbearing interest)



Recommendation

- To address Affordable Housing Infrastructural projects in Nigeria, there is a need for further studies to help.....
- develop a policy framework to improve construction project delivery time and costing.
- develop sustainable solutions for efficient project implementation and delivery by stakeholders in the construction organisation.



Conclusion

- Construction project failures constitute a bottleneck to the delivery of affordable housing in Nigeria.
- Various factors impeding the development of affordable housing in Nigeria have been unravelled in this study and categorised into pre-, during and post-construction project phases.
- This study suggests that using the VIDM model can help address the current construction project challenges and improve Affordable Housing project delivery in Nigeria.





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THANKS FOR LISTENING

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