

Mapping the Digital Shift: A Bibliometric Review of Human Resource Information Systems and Workforce Optimization in South African Construction.

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CITC GLOBAL
Construction in the 21st Century

Presentation Outline



Introduction & Background



Research Design &
Methodology



Results



Discussions



Conclusion &
Recommendations

Introduction & Background

HR management in construction is complex due to temporary teams, skill shortages, and safety-critical operations (Wahdaniah et al., 2023).

Human Resource Information Systems (HRIS) use digital tools and analytics to manage labour more efficiently (Panjaitan, 2023).

In developing economies like South Africa, HRIS can address inefficiencies, poor data systems, and fragmented workforce practices (Ngwenya et al., 2019).

Adopting HRIS supports productivity, compliance, and sustainable workforce development, aligning construction HR with digital transformation goals (Abuhantash, 2023).

Aim, Objectives, and Scope



To systematically map and analyse the intellectual evolution of scholarly literature on the adoption of HRIS and digital HR tools within the construction industry.



To identify key publications, main research themes, emerging topics, and knowledge gaps to offer a foundational overview.

Research Design and Methodology



Bibliometric Analysis: Quantitative review of literature from the Scopus database.

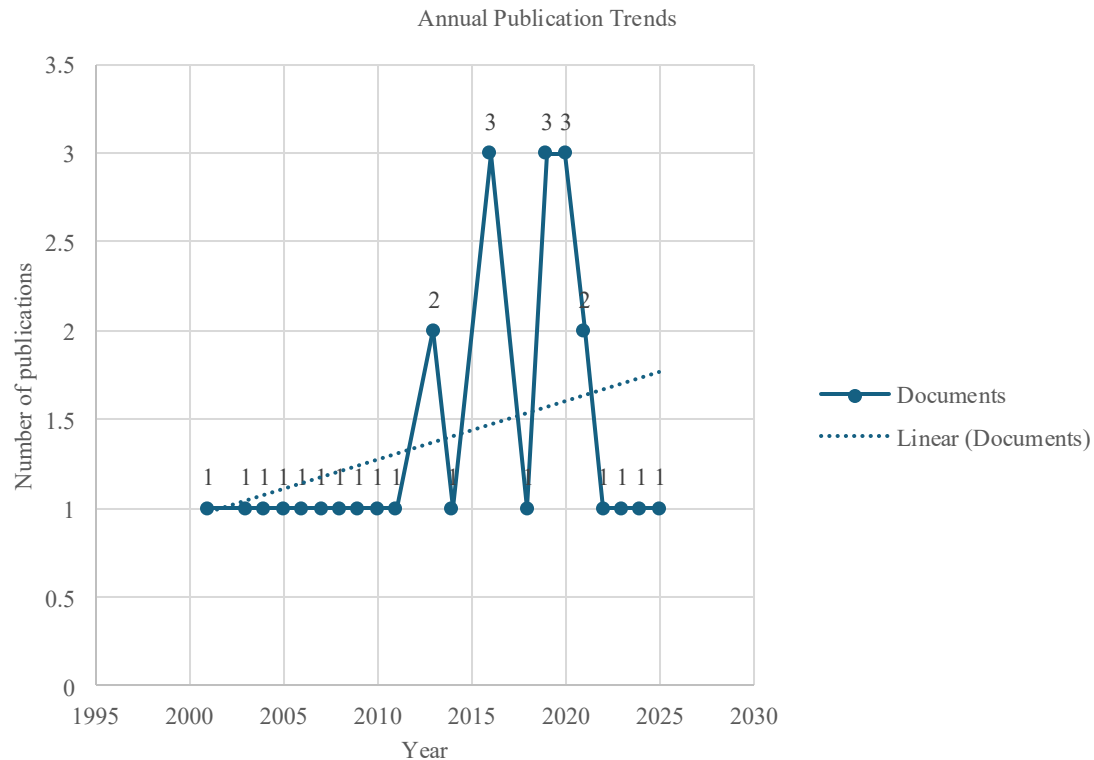


Filtering & Screening: 'Human resource', 'Construction industry', 'Information systems'; limited to peer-reviewed sources and English language. 29 Documents for final analysis.



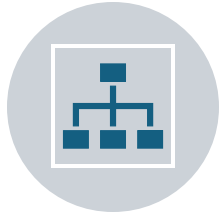
Knowledge Mapping: Trend analysis; VOS viewer software used for cluster analysis.

Results (1) Trend & Global Research Analysis



Country	Publications	Cites
United States of America	5	87
United Kingdom	4	152
Hong Kong	3	79
Australia	2	154
Taiwan	2	13
Germany	2	12

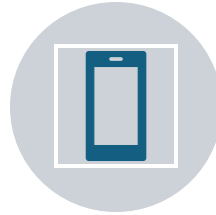
Results (2) Cluster-theme Analysis



**ORGANISATIONAL
INTEGRATION**



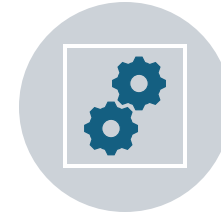
**TECHNOLOGICAL
INNOVATION**



**DIGITAL
INTEGRATION**



**WORKFORCE
OPTIMISATION**



**SYSTEMS
MANAGEMENT**



**OPERATIONAL
EFFICIENCY**

Discussions

In the South African construction context, HRIS has been found to ensure compliance with labour regulations while providing management with clearer business insights.

Lack of studies specifically examining how HRIS can enhance the management of professionals in the industry.

No established frameworks/models linking HRIS data (such as skills, experience, availability) with project outcomes over time.

Conclusions & Recommendations

The bibliometric analysis of 29 scholarly documents reveals six key research themes over the years.

Reveals growing research interest in HRIS in the construction context.

Stakeholders should prioritise adopting HRIS platforms to streamline recruitment, skills tracking, and performance management.

Future comparative studies are needed to analyse HRIS adoption in construction across different countries to identify context-specific challenges.