

## Two Decades of Research on Sustainable Regional and Trans-Border Infrastructure: A Review and Future Research Agenda

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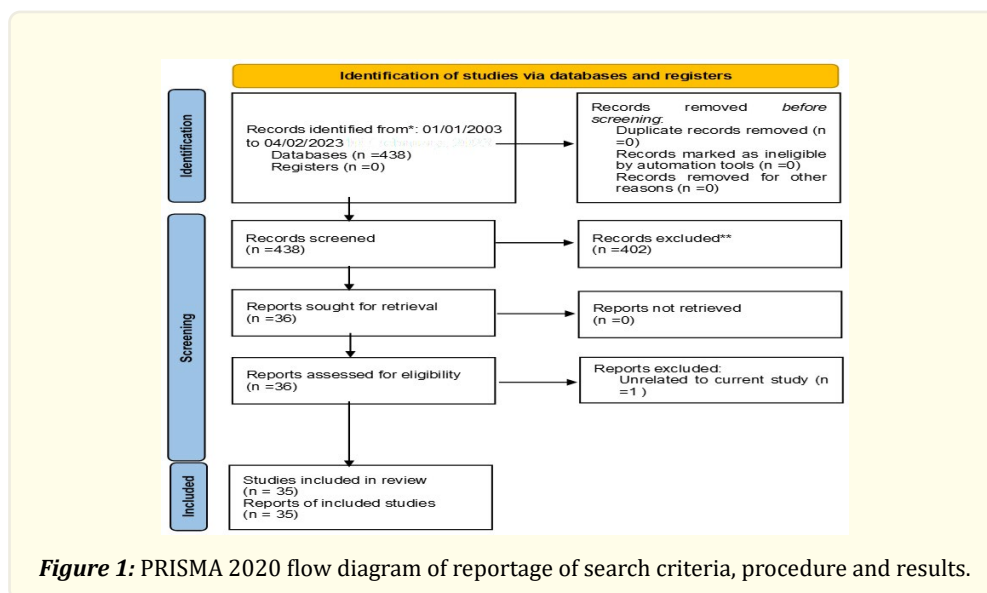
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### Background

In spite of the budding interest of researchers, policymakers and practitioners, there are still differing and disjointed conceptualizations of sustainable regional and trans-border infrastructure (SRTBI) as its meadow is still emerging. In an effort to fill this research gap, this study reviews and synthesizes SRTBI research to identify core publication vents and papers, key theoretical and methodological approaches, and key variables of interest that exist in the SRTBI literature, and provides directions for future research.

### Methodology

The author reviewed peer-reviewed theoretical and empirical journal articles published during the last two decades—from 2003 to 2023. Scopus database was the source of the journal articles collected to conduct this study. Selected keywords from a rigorous review of literature were pooled with Boolean operators and searched. Subsequently, a scrupulous screening procedure with an inclusion and exclusion criteria was adopted to select the relevant articles for the study. The selected journal articles on SRTBI were subsequently synthesized for further acumens. The search criteria, procedure and results were reported using the PRISMA 2020 flow diagram as evinced in Figure 1.



## Results

A systematic literature review was conducted to synthesize the identified literature on SRTBI. The review initially addressed the different themes (see Table 1) of SRTBI literature, then budged to the bibliometric aspects of the studies, notably the publication outlets (journals) and citations (see Table 2). A review of SRTBI research methods (statistical methods (see Table 3) and main methodologies used in SRTBI literature) was subsequently conducted.

Themes	Number of Studies	References
Planning and development of sustainable regional infrastructure	4	Magalhães(2016); Kirchoff etal.(2011); Carroli(2018); Hudalah, Talitha and L estari(2022).
Africa's regional infrastructure development and China's Belt and Road Initiative (BRI)	3	Lisinge (2020); Odetayo and Walsh (2021); Ghossein, Hoekman, Shingal and (2021).
Integration of Regional Infrastructure in South America (IIRSA)	2	Bonilla Bolaños (2017); Zhouri (2010).
Regional infrastructure and firm/public investment	6	Aiello, Iona and Leonida(2012); Bajo-Rubio and Diaz-Roldán (2005); Jiang, Jiang and Zheng(2020); Castells and Solé-Ollé(2005); Zheng et al. (2013); Zolotareva et al. (2016).
Energy component of regional infrastructure	3	Kvon etal. (2019); Shaw, Attree and Jackson (2010); Pierre et al. (2017).
Threatening and enabling of regional infrastructure	2	Arbuthnott etal(2011); Chapain and Comunian(2010).
Regional infrastructure, innovation, research and development (R&D)	3	Sivak, Caplanova and Hudson (2011); Ling (2015); Ke and Lai (2011).

**Table 1:** Different research themes of SRTBI literature.

Authors	Type of article	Citation count	Ranking by citations
Zhang and Moffat(2015)	Empirical	53	5
Zhouri(2010)	Review Paper	30	8
Kvon etal.(2019)	Empirical	15	14
Arbuthnott etal(2011)	Empirical	11	16
Kirchoff etal.(2011)	Qualitative	14	15
Li etal(2019)	Quantitative	29	10
Shaw, Attree and Jackson(2010)	Qualitative	31	7
Carroli(2018)	Review Paper	18	13
Sivak, Caplanova and Hudson(2011)	Empirical	24	11
Chapain and Comunian(2010)	Empirical	111	3
Zeff etal.(2016)	Empirical	69	4
Fenge, von Ehrlich and Wrede(2009)	Empirical	10	17
Castells and Solé-Ollé(2005)	Empirical	114	2
Ke and Lai(2011)	Empirical	10	17
Pierre et al.2017)	Empirical	20	12

Zheng et al. (2013)	Empirical	49	6
Rehak(2020)	Case study	30	8
Lall, Shalizi and Deichmann (2004)	Empirical	127	1

**Table 2:** Most cited papers on SRTBI in the course of the last two decades (citation counts as of 04 February, 2023).

Analysis	Number of articles	Percentage of total (%)
Correlation and regression	7	20
Panel data	4	11
Quantitative	6	17
Qualitative	2	6
Modelling	3	9
Case study	5	14
Conceptual and review papers	8	23
Total	35	100

**Table 3:** Statistical methods used in the SRTBI literature.

## Discussion

From the findings of the study, it is suggested that future research in the SRTBI field should be directed towards the interaction between innovation and regional infrastructure in the African context, as well as the contribution of government policy and GDP share to research. The study was based on documents retrieved from Scopus and any limitations of the database may have implications for the findings.

## Conclusions

1. More primary data surveys should be encouraged in future research in this field, albeit the use of case studies is quite impressive.
2. Future research should continue to introduce new theoretical viewpoints and integrate theories, potentially presenting new techniques and models.

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