



LEEDS  
BECKETT  
UNIVERSITY

---

Citation:

Arogundade, S (2021) Contractors' Carbon Reduction Behaviour during Construction Project. In: BEC Doctoral Symposium, 21 May 2021, Leeds Beckett University, Leeds, UK. (Unpublished)

Link to Leeds Beckett Repository record:

<https://eprints.leedsbeckett.ac.uk/id/eprint/12029/>

Document Version:

Conference or Workshop Item (Presentation)

---

The aim of the Leeds Beckett Repository is to provide open access to our research, as required by funder policies and permitted by publishers and copyright law.

The Leeds Beckett repository holds a wide range of publications, each of which has been checked for copyright and the relevant embargo period has been applied by the Research Services team.

We operate on a standard take-down policy. If you are the author or publisher of an output and you would like it removed from the repository, please [contact us](#) and we will investigate on a case-by-case basis.

Each thesis in the repository has been cleared where necessary by the author for third party copyright. If you would like a thesis to be removed from the repository or believe there is an issue with copyright, please contact us on [openaccess@leedsbeckett.ac.uk](mailto:openaccess@leedsbeckett.ac.uk) and we will investigate on a case-by-case basis.



## 1.0 Introduction

Construction contractors have been touted to be a major player in reducing carbon emissions during the construction process due to their role in bringing building designs to life (Wong, P. S. P. et al., 2013). Also, various carbon reduction strategies have been highlighted in assisting contractors to reduce the carbon emitted while carrying out construction activities.

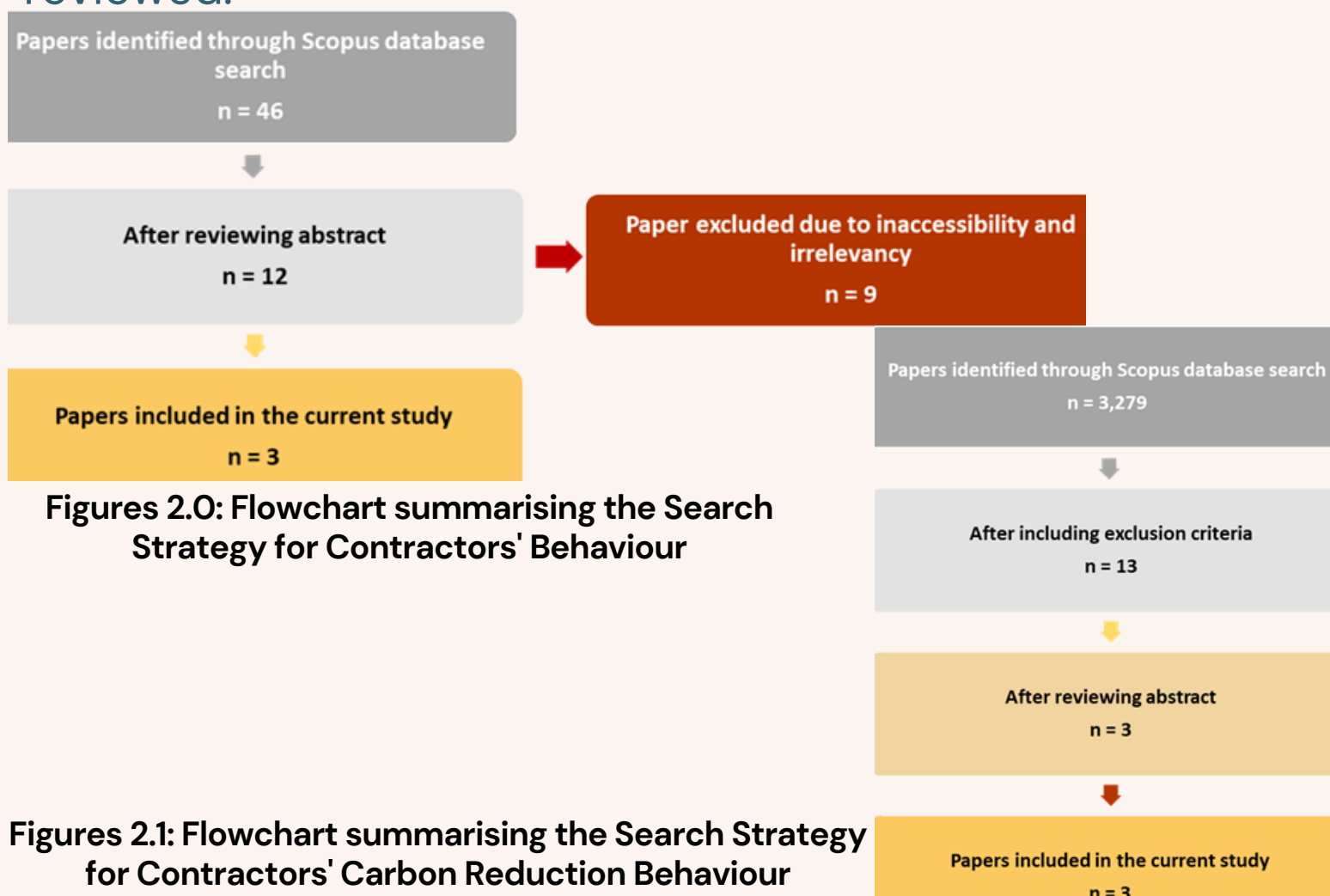
However, it is believed that contractors are quite reluctant in adopting these strategies for several reasons such as possible increase in cost and being contradictory to their existing construction procedures (Wong, P. S. P. et al., 2013). This study therefore aims to highlight the result of a systemic analysis of literature carried out in understanding contractors' carbon reduction behaviour during construction activities.

## 2.0 Methodology

In conducting this research, two streams of studies covering the concept of contractors' behaviour and their carbon reduction behaviour during construction projects were reviewed via a systematic approach. This was done in order to assess the contribution of scholars, understanding the present dynamics and to act as a foundational knowledge in this research area (Snyder, 2019).

Keyword search on Scopus database was performed to extract relevant literature for the study. Scopus was chosen based on the fact that the database has enormous archive of engineering, management, psychology, business, and construction research publications (Darko and Chan, 2016).

For the first stream of literature reviewed, the keyword used for the search was "contractor\* behavi\*" with the search conducted on the 18 April 2021 while "carbon reduction" and "contractors" were the keywords used in searching for literatures for the second stream of study that was reviewed and the search was conducted on the 22 March 2021. Figures 2.0 and 2.1 below are the flowchart depicting the search strategy and the number of articles included in this current paper for both stream of studies reviewed.



**Acknowledgement:** Thanks to YORhub, Leeds Beckett University, and EverX Consulting Ltd.

**References:** Abeydeera, et al. (2019); Al-Sari, et al. (2012); Begum, et al. (2009); Brooks and Coleman (2003); Chan and Au (2007); Darko and Chan (2016); Liu (2019); Snyder (2019); Wong, et al. (2013); Wong, et al. (2014); Zhang and Zhou (2016).

## 3.0 Results

### Contractors' Behaviour

As highlighted in Figure 2.0, only 46 papers were found relating to the keyword used in finding articles regarding contractors' behaviour and these papers covered the period from 1979 till present day. After assessing the articles abstract, 12 papers discussed the concept of contractors' behaviour in various contexts but the study by Liu, et al. (2019) is the only one that highlighted the concept of contractors' behaviour by breaking it down into three forms of behavioural tendencies namely perfunctory, consummate, and opportunistic behaviour. While the study by Wong, P. S. P. et al. (2014) and Brooks and Coleman (2003) were also reviewed further for the current study since they both discussed the drivers of contractors' behaviour as it relates to carbon reduction and organisation's performance respectively.

### Contractors' Carbon Reduction Behaviour

The keyword "carbon reduction" was initially used for a search on Scopus and 3,279 papers was returned for the period of 1928 till present day. Upon adding "contractors", the search result reduced to 13 papers and the year automatically changed to 2013 till present day. Of the 13 papers gotten from the keyword search, only three (Zhang and Zhou, 2016; Wong, P. S. P. et al., 2013; and Wong, P. S. P. et al., 2014) discussed contractor's carbon reduction behaviour (with case studies in Australia and China) and were included in this study (Figure 2.1).

## 4.0 Discussion

The findings from this study indicates that the concept of contractors' behaviour has been studied by scholars in varying circumstances ranging from weather risk pricing behaviour during contract tender (Chan and Au, 2007) to assessing their waste management behaviour during construction projects (Begum, et al., 2009 and Al-Sari, et al., 2012) and in contractual claims dispute handling (Zhang, et al., 2019). However, there is paucity of research in the area related to their carbon reduction behaviour during construction project. This might likely be attributed to the fact that research within the carbon emission domain in general is just becoming more visible in recent years (2016 – 2018) as reported by Adeydeera, et al. (2019). Hence, this suggest that this field of research that is, contractors' carbon reduction behaviour during construction project is relatively new and evolving with themes such as carbon reduction drivers, organisational culture, and carbon key performance indicators emerging.

## 5.0 Conclusion

The findings of this study contribute to the carbon reduction in construction research and reveals the knowledge gap in this research area. Therefore, researchers, industry practitioners, and policymakers are urged to focus more attention to this important research area especially as the move towards the decarbonisation of the sector intensifies and considering the vital role of the contractor in bringing building design to life.