
Integrating environmental, social and governance (ESG) principles into public sector construction procurement: a New Zealand case analysis of evaluation weightings and criteria

International
Journal of
Building
Pathology and
Adaptation

Received 6 June 2025
Revised 20 August 2025
Accepted 1 October 2025

Jiachen Qian, Chandana Siriwardana and Wajiha Mohsin Shahzad
School of Built Environment, Massey University, Auckland, New Zealand, and
Chamila Gunasekara
*RMIT University Civil and Infrastructure Engineering,
Melbourne, Australia*

Abstract

Purpose – This study examines how environmental, social and governance (ESG) principles are embedded in public sector construction procurement in New Zealand. It aims to evaluate the extent to which ESG considerations are integrated into contractor selection and how these reflect local policy priorities.

Design/methodology/approach – A content analysis was conducted on 102 publicly issued requests for proposals (RFPs) to assess the inclusion, weighting and thematic distribution of ESG-related evaluation criteria. The results were compared with international literature to highlight contextual differences.

Findings – ESG criteria were explicitly weighted in 45% of RFPs, typically between 1 and 20%, while 8% included them as unweighted considerations. The remaining 47% did not include any discernible ESG criteria. Commercial and heavy civil projects showed higher rates of ESG inclusion, while institutional and residential sectors lagged. Social outcomes, particularly workforce training, Maori and Pasifika inclusion and community well-being, received greater emphasis than environmental or governance criteria. The study also found that larger projects were more likely to include sustainability considerations, although the level of weighting was consistent across project sizes.

Originality/value – This research systematically evaluates ESG integration in New Zealand's public sector construction procurement at scale. It reveals a socially driven procurement model shaped by national policy and demographic priorities and highlights the need for more consistent application of ESG criteria across project types and scales.

Keywords ESG, Public sector procurement, Contractor selection, New Zealand construction, Sustainability evaluation, Content analysis

Paper type Research article

1. Introduction

The construction industry plays a pivotal role in shaping the built environment, accounting for approximately 6.3% of New Zealand's gross domestic product and providing substantial employment opportunities (Ministry of Business Innovation and Employment, 2024). However, beyond its economic contributions, the sector also exerts considerable environmental, social and governance (ESG) impacts across the project lifecycle (Al Shouny *et al.*, 2023; Barbhuiya and Das, 2023; Eldahrotiy *et al.*, 2023). These impacts are

© Jiachen Qian, Chandana Siriwardana, Wajiha Mohsin Shahzad and Chamila Gunasekara. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at [Link to the terms of the CC BY 4.0 licence](#).



International Journal of Building
Pathology and Adaptation
Emerald Publishing Limited
e-ISSN: 2398-4716
p-ISSN: 2398-4708
DOI 10.1108/IJBPA-06-2025-0144

especially pronounced in public procurement, where the allocation of contracts can influence emissions, social equity and labour practices on a national scale.

Historically, construction procurement in New Zealand, like in many countries, has prioritised cost, quality and delivery timelines, often awarding contracts to the lowest bidder and sidelining broader sustainability objectives (Ali *et al.*, 2025; Gunatilake, 2013). Yet growing awareness of the industry's role in advancing ESG goals has shifted attention toward more sustainable procurement models. Numerous studies have highlighted that procurement methods significantly shape project outcomes (Ofori, 2006) and calls for reform continue to emphasise the need for more holistic, impact-driven evaluation frameworks (Sarpong *et al.*, 2024; Walker and Brammer, 2012). Contractor selection plays a central role in this shift, as contractors are directly responsible for implementing sustainability practices on the ground. As such, clear articulation and measurement of ESG-related expectations in tender evaluations are essential.

Target 12.7 of the United Nations (UN) Sustainable Development Goals underscores the global imperative to promote sustainable public procurement aligned with national policies (United Nations, 2015). However, while environmental considerations are often the most visible component of sustainability, the social and governance dimensions, such as equity, workforce development and fair labour conditions, remain comparatively underexamined in both research and practice (Sarpong *et al.*, 2024). Social sustainability, in particular, is increasingly seen as a driver of resilience and equity in the built environment (Celoza and Owens, 2025; Lindell and Olander, 2019). Global initiatives such as the European Pillar of Social Rights (European Commission, 2017) and the UN 2030 Agenda reflect a growing consensus that ESG integration is not only an environmental concern but also a multidimensional framework for achieving inclusive development.

In New Zealand, this shift is reflected in government procurement reforms. The fourth edition of the government procurement rules mandates that agencies pursue broader outcomes, which are secondary benefits such as reduced emissions, workforce training, fair wages and support for local businesses through their procurement activities (Ministry of Business Innovation and Employment, 2019). Unlike much of the global literature, which foregrounds environmental impacts while overlooking social and governance dimensions (Jámbor and Zanócz, 2023), New Zealand's Broader Outcomes agenda centres on social equity and thus opens an underexplored conceptual space in ESG procurement research (Allen, 2021). This distinctive national focus makes it essential to examine how policy priorities are translated into local procurement practice. Although the policies signal progress, significant challenges persist. ESG expectations are often vaguely defined, inconsistently applied or difficult to evaluate due to a lack of standardised criteria and metrics (Dhawan *et al.*, 2022). Consequently, a gap remains between policy ambition and procurement practice, especially in converting social objectives into measurable contractor evaluation criteria (Raiden and King, 2023).

This study investigates the operationalisation of ESG principles within New Zealand's public sector construction procurement. A comprehensive content analysis was conducted on a dataset of requests for proposals (RFPs) issued by public agencies, with particular emphasis on how government policies influence contractor selection processes.

Specifically, the study aims to:

- (1) Quantify the proportion of tenders that include explicit ESG-related evaluation criteria;
- (2) Analyse the weighting assigned to sustainability considerations within contractor assessments;
- (3) Identify the most frequently applied ESG criteria and

-
- (4) Explore the relationship between project size and the assignment of sustainability weightings.

This study aligns procurement analysis with national policy priorities to bridge the gap between strategic intent and operational practice. Through a systematic examination of the presence, structure and weighting of ESG-related criteria in tender documents, it addresses a critical gap in understanding how localised procurement systems embody broader sustainability agendas. The findings offer empirical insights into the translation of ESG frameworks into contractor selection processes and reveal opportunities to enhance their integration across the built environment.

2. Regulatory and literature background

2.1 ESG policy and procurement framework in New Zealand

New Zealand's construction sector is predominantly made up of micro, small, and medium-sized enterprises, with 32% of firms employing between one and nineteen people and 65% operating as sole proprietors (Ministry of Business Innovation and Employment, 2024; Seadon and Tookey, 2019). This fragmented industry structure, along with New Zealand's relative geographic isolation, contributes to slower uptake of international best practices, often lagging behind countries such as the United Kingdom by several years (Dhawan *et al.*, 2022; Naismith *et al.*, 2016).

Nevertheless, the New Zealand Government has demonstrated commitment to ESG-aligned procurement through recent legislative and policy reforms. The Climate Change Response (Zero Carbon) Amendment Act 2019 set legally binding emissions targets, including net-zero carbon emissions (excluding biogenic methane) by 2050. Complementing this, the Carbon Neutral Government Programme requires agencies to factor environmental performance into procurement decisions for major construction projects (Ministry for the Environment, 2022).

The fourth edition of the government procurement rules (Ministry of Business Innovation and Employment, 2019) represents a more comprehensive step toward ESG integration. Under rule 16, all public agencies must give effect to broader outcomes, which are defined as secondary environmental, social, economic or cultural benefits delivered through procurement processes. Table 1 shows four priority areas for implementation identified by the government.

These policy measures provide a formal framework for incorporating ESG objectives into construction procurement, although practical implementation remains inconsistent across agencies and project types.

2.2 Literature review on ESG weightings and criteria

The integration of ESG criteria into public sector procurement is gaining international momentum, yet its practical implementation varies widely across contexts. While much of the literature has documented the inclusion of sustainability criteria in procurement processes, it often remains descriptive, with limited theoretical framing of how these criteria are operationalised and prioritised.

Early work by McCrudden (2004) provides a foundational understanding of public procurement as a tool for achieving broader social policy objectives. The concept of "linkage," where procurement is explicitly tied to social and political goals such as labour equity, minority inclusion or human rights, illustrates the long-standing role of contracting in shaping societal outcomes (Cravero, 2018). However, such practices are often inconsistently applied and frequently lack robust institutional mechanisms, as shown in more recent studies on sustainable and social procurement (Lou *et al.*, 2023).

Walker and Brammer (2009) offer one of the first empirical frameworks for understanding sustainable procurement in the public sector. Preuss (2009) similarly identifies substantial variation across UK public agencies, shaped by organisational

Table 1. Priority areas of broader outcomes

No	Priority outcomes	Explanation
1	Access for local businesses	Expanding the opportunity for New Zealand businesses, including Māori and Pasifika (referring respectively to the Indigenous people of New Zealand and peoples of Pacific Island heritage) businesses, to engage in government procurement, both directly and within supply chains
2	Domestic construction workforce	Utilising construction procurement to stimulate growth in the size and skill levels of the domestic workforce
3	Worker conditions and business sustainability	Aims to protect workers from unsafe and unfair practices while rewarding high-performing businesses and preventing undercutting from companies that exploit labour costs through substandard practices
4	Transition to a net-zero emissions economy	Facilitating the transition to a net-zero emissions future and assisting the government in achieving significant waste reduction targets beyond 2020

Source(s): Adapted from the [Ministry of Business Innovation and Employment, 2019](#)

priorities, leadership engagement and cost pressures. Environmental criteria are more consistently embedded, whereas social procurement, such as support for local or disadvantaged suppliers, remains unevenly implemented (Flynn, 2017). This underscores the importance of both internal institutional drivers and external policy mandates in shaping ESG adoption.

Loosemore (2016) takes this further by examining how social procurement functions within the construction sector, identifying key challenges in aligning social objectives with traditional procurement practices. Barraket *et al.* (2015) identify barriers to broader inclusion, including rigid contract structures, risk-averse organisational cultures and narrow definitions of value focused on the lowest price. Raiden *et al.* (2018) argue that enabling more inclusive, equity-driven outcomes requires structural reform to existing procurement processes. This is particularly relevant in the New Zealand context, where broader outcomes policies emphasise social objectives such as Māori and Pasifika inclusion and workforce training.

Empirical studies across various countries confirm the uneven weighting and prioritisation of ESG components. In the United States, Xia *et al.* (2014a, b) found that 68% of analysed construction RFPs included sustainability-related criteria, with an average weighting of 8.4%. More recent evidence from Turkey, the United Arab Emirates (UAE) and other countries shows that sustainability weightings vary significantly depending on the project type and policy environment. For instance, Özyürek and Erdal (2023) reported an average weighting of only 2.14% for environmental criteria in Turkish public works projects, while Asaad and El-Sayegh (2021) found a 38.6% weighting in green building projects in the UAE. Similarly, Okereke *et al.* (2022) applied a quantitative research questionnaire and reported that environmental measures received a 5.8% weighting in contractor selection for civil engineering projects in the Nigerian context.

Studies by Gurgun and Koc (2020) also reveal methodological differences, with some using analytic hierarchy process or Delphi methods to quantify decision-maker preferences. In the North Cyprus construction market, Egemen (2022) surveyed 330 clients and found that innovative and creative solutions were assigned a weighting of 4.4%. Likewise, Demirci and Isik (2024) examined reconstruction projects in Turkey and reported a 10.6% weighting for environmental sustainability. Despite these variations, a common finding across jurisdictions is that environmental factors tend to dominate sustainability criteria, while social and governance considerations remain less systematically applied. This stands in contrast to New

Zealand's government procurement rules, where three of the four broader outcome priorities focus on social and governance objectives, with only one explicitly addressing environmental impact. This policy orientation reflects the unique priorities of the New Zealand construction sector and underscores the need for empirical analysis of how institutional ESG mandates are operationalised within contractor selection processes.

In emerging economies, ESG adoption tends to be uneven. For example, [Soomro *et al.* \(2020\)](#) found that environmental concerns accounted for just 5.5% of contractor selection criteria in Pakistan. Similarly, [Doloi \(2009\)](#) reported that health and safety, a key element of social sustainability, received a weighting of only 2.5% for medium-sized building projects in Melbourne. This trend suggests that while ESG concepts are gaining traction globally, practical application often lags behind policy intent.

[Table 2](#) presents a consolidated view of ESG-related contractor selection criteria from international literature. These span a wide range of environmental, social, and economic indicators, including carbon emissions, waste minimisation, water use, ethical trade, workforce training and corporate social responsibility. The breadth of criteria reflects the multidimensional nature of ESG in construction procurement.

3. Research method

This study employed a mixed-method content analysis to examine how ESG considerations are integrated into public sector construction procurement in New Zealand.

Content analysis was selected for its systematic and replicable approach to examining large volumes of text-based data ([Kolbe and Burnett, 1991](#); [Neuendorf, 2017](#)). It is particularly suitable for procurement research, where unstructured or semi-structured documents, such as RFPs, contain embedded information about policy implementation and evaluation priorities ([Nayak and Taylor, 2009](#); [Weber, 1990](#)). Previous studies have effectively used content analysis to assess procurement criteria, contractor evaluation practices and sustainability integration in construction ([Bogus *et al.*, 2013](#); [Gransberg and Barton, 2007](#); [Mclain *et al.*, 2014](#); [Molenaar *et al.*, 2010](#); [Puerto *et al.*, 2008](#); [Stanford *et al.*, 2016](#); [Xia *et al.*, 2013](#)). The sample sizes in these studies varied, ranging from 26 to 110 RFPs.

This research is conceptually informed by public value theory ([Benington and Moore, 2011](#); [Symes, 1999](#)) and sustainability governance frameworks ([Mccrudden, 2004](#); [Walker and Brammer, 2009](#)), which emphasise the role of public procurement in achieving broader societal outcomes. These theoretical perspectives support the analysis of ESG integration as an expression of public agencies' obligations to deliver environmental and social benefits alongside economic performance.

The content analysis process adopted in this study is summarised in [Figure 1](#), drawing on a methodological approach similar to that used by [Ahmed and El-Adaway \(2023\)](#) in their analysis of dispute causes during the construction bidding stage. Consistent with the framework proposed by [Guthrie *et al.* \(2004\)](#), the process began with the collection of a sufficiently large and representative sample of RFPs, followed by the selection of an appropriate content analysis strategy to support both qualitative and quantitative inquiry.

3.1 Data collection

The primary data source was the Government Electronic Tender Service (GETS), which serves as the official procurement platform for public agencies in New Zealand. Supplementary tenders were sourced from other recognised platforms used by major agencies to ensure comprehensiveness. A similar approach was adopted by [West *et al.* \(2022\)](#), who used GETS to collect tender award data for transportation physical works in New Zealand. The data collection window spanned from October 2024 to February 2025, focusing exclusively on open public sector tenders for construction works.

Table 2. Sustainability criteria for contractor selection

ESG pillars	Contractor selection criteria	Dhawan <i>et al.</i> (2022)	Cai <i>et al.</i> (2023)	Demirci and Isik (2024)	Montalbán-Domingo <i>et al.</i> (2018)	Rashid <i>et al.</i> (2018a, b)	Asaad and El-Sayegh (2021)	Rashid <i>et al.</i> (2018a, b)	Lindell and Olander (2019)	Koc <i>et al.</i> (2023)	Jain <i>et al.</i> (2024)	Stojanović (2024)
Environmental (E)	Environmental management system			v		v		v		v	v	
	Use of recyclable or reusable materials	v		v			v					
	Energy efficiency measures	v		v								v
	Construction waste management	v					v					v
	Sustainable construction innovation		v				v					v
	Certified environmental credentials						v	v				v
	Efficient use of natural resources			v							v	
	Greenhouse gas emissions reduction	v		v								
	Water conservation strategies	v										
	Social (S)	Health and safety standards	v			v	v	v	v			
Corporate and social responsibility commitments							v		v	v		v
Inclusion of small and medium enterprises					v		v		v			v
Job creation and employment stability					v		v		v			v

(continued)

Table 2. Continued

ESG pillars	Contractor selection criteria	Dhawan <i>et al.</i> (2022)	Cai <i>et al.</i> (2023)	Demirci and Isik (2024)	Montalbán-Domingo <i>et al.</i> (2018)	Rashid <i>et al.</i> (2018a, b)	Asaad and El-Sayegh (2021)	Rashid <i>et al.</i> (2018a, b)	Lindell and Olander (2019)	Koc <i>et al.</i> (2023)	Jain <i>et al.</i> (2024)	Stojanović (2024)
	Employee training and professional development	v			v							v
	Contribution to local economic development				v		v					
	Preservation of cultural and heritage assets				v							
	Mitigation of harm from construction activities				v							
	Promotion of employee well-being										v	
Governance (G)	Adherence to ethical trade practices				v				v			v
	Compliance with labour and human rights	v							v			v
	Capacity to meet client ESG expectations		v									
	Evaluation of suppliers and subcontractors	v										

Source(s): Authors' own creation

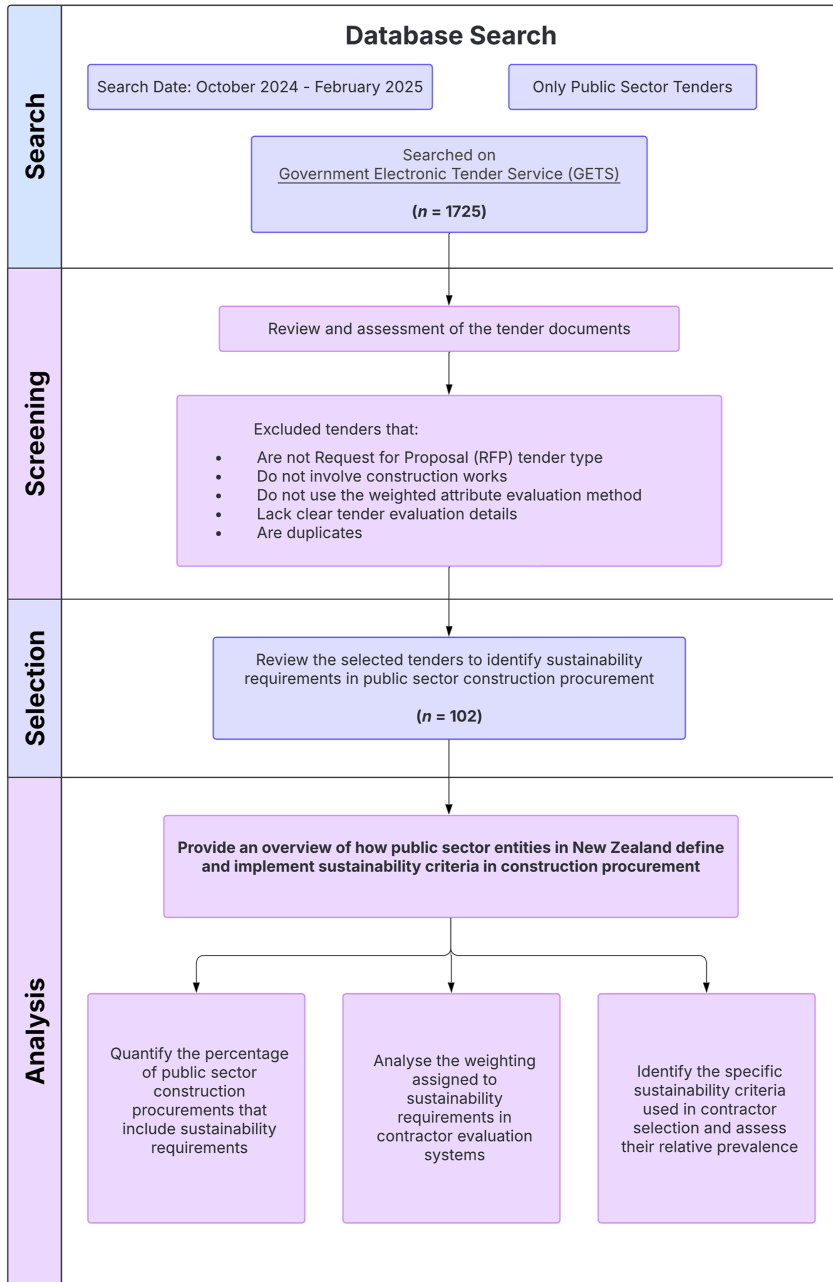


Figure 1. Steps of content analysis. Source: Authors' own creation

An initial pool of approximately 1,725 tenders was identified. After exclusions, a final sample of 102 RFPs from 36 public sector agencies was retained for analysis. These agencies included both central and local government organisations. The following exclusion criteria were applied:

- (1) Tenders that are not classified as RFP type;
- (2) Tenders that do not involve construction-related works;
- (3) Tenders that do not use the weighted attribute evaluation method;
- (4) Tenders that lack clear information on evaluation criteria or methodology and
- (5) Duplicate tenders.

During the review process, ESG-related evaluation criteria were tracked across documents. By the time 71 RFPs had been analysed, the identification of new ESG criteria had largely stabilised, with no additional categories emerging in later documents. However, all 102 RFPs were retained for analysis to enhance the robustness of frequency-based and comparative evaluations. Although RFPs follow structured formats, the way ESG criteria are defined, weighted and integrated varies across agencies, warranting full dataset analysis to ensure reliability in identifying patterns and differences across the sample.

3.2 Data analysis

The study employed both qualitative and quantitative content analysis, aligned with its core objectives:

- (1) Identification of sustainability weightings: RFPs were reviewed for explicit sustainability scores and recorded percentage weightings.
- (2) Classification of ESG criteria: Criteria were extracted and grouped under ESG-related themes using manual inductive coding techniques (Elo and Kyngäs, 2008; Hsieh and Shannon, 2005). While the analysis was guided by a structured coding framework developed from prior literature and procurement policies, the process allowed for the emergence of new themes.
- (3) Frequency analysis: Criterion prevalence was calculated to identify dominant themes.
- (4) Cross-tabulation: Chi-square tests were used to examine associations between project characteristics and the inclusion of ESG criteria. This method assesses the strength of relationships between categorical variables (Franke *et al.*, 2012), though it is limited to identifying correlations and does not establish causation (Xia *et al.*, 2014). Assumptions of the test, including expected cell size, were reviewed to ensure validity. Summary statistics, such as mean, median and standard deviation, were also recorded where applicable to support descriptive analysis.

To ensure coding consistency, ESG categories were cross-checked and verified through iterative memoing (Birks *et al.*, 2008; Saldana, 2015). A single coder conducted the review, but consistency was maintained through a structured codebook (Guest *et al.*, 2012). Although inter-coder reliability testing was not undertaken, the manageable sample size and consistent formatting across RFPs supported internal reliability (Campbell *et al.*, 2013).

3.3 Project typology

The demographic details of these tenders are presented in Table 3, with similar project categories examined in previous studies (Gransberg and Windel, 2008; Xia *et al.*, 2014). The project size of RFPs is categorised as small (project value below NZD \$1m) and large (project value above NZD \$1m) to analyse the relationship between project size and sustainability requirements. Defining a “small project” universally is challenging, as interpretations vary across countries (Collins *et al.*, 2017). For instance, in Vietnam, projects with a budget of less than USD \$1m are classified as small (Le-Hoai *et al.*, 2008), whereas in Malaysia, projects with a budget of RM 5m or less are considered small (Abdullah *et al.*, 2010). This study adopts

Table 3. Summary of RFPs

Project type	Number of small size projects (less than NZD \$1m)	Number of large size projects (NZD \$1m and over)	Total number of RFPs
Institutional building	16	13	29
Commercial building	10	10	20
Heavy civil and highway	2	10	12
Industrial and civil	20	15	35
Residential building	3	3	6
Total	51	51	102

Source(s): Authors' own creation

the NZD \$1m threshold, aligning with the definition of small businesses in New Zealand (Ministry of Business Innovation and Employment, 2018). The same approach was used in a similar study by Xia *et al.* (2014).

This categorisation enabled an exploration of the correlation between project characteristics and the presence or absence of ESG evaluation in the tendering process.

The geographic distribution of these RFPs is presented in Table 4. Auckland and Greater Wellington emerged as the most active regions, collectively accounting for nearly half of all projects. This reflects the concentration of infrastructure investment and procurement activity in major urban centres. Other regions with notable representation include Canterbury, Northland and Waikato. The inclusion of RFPs from a wide range of regions provides a broader perspective on how sustainability considerations are addressed across diverse local contexts. This regional spread supports a more comprehensive analysis of procurement practices and ESG integration at a national level. However, most RFPs in this study use lump sum contracts, which may limit the flexibility to integrate ESG considerations compared to other contract types.

3.4 Limitation

While the content analysis approach enhances the study's validity, several limitations should be acknowledged. First, the interpretation of ESG language in RFPs involves an element of subjectivity, as the documents often contain varied terminology and inconsistent formatting. Second, inter-coder reliability testing was not conducted due to resource constraints. Although internal consistency was maintained through structured coding procedures, the absence of

Table 4. Regional distribution of RFPs

Project region	RFP count	Project region	RFP count
Auckland Region	27	Bay of Plenty Region	5
Greater Wellington Region	18	Nelson Region	5
Canterbury Region	10	Hawke's Bay Region	3
Northland Region	8	Manawatū-Whanganui Region	3
Waikato Region	7	Gisborne Region	2
Otago Region	6	West Coast Region	1
Southland Region	6	Taranaki Region	1

Source(s): Authors' own creation

multiple coders may introduce bias. Third, the analysis is based on publicly available RFPs, which may not represent all procurement activities, particularly smaller or non-publicly tendered projects. These limitations should be considered when interpreting the generalisability of the findings.

4. Results

4.1 Quantitative content analysis of sustainability inclusion and weighting

This subsection addresses objectives 1 and 2 of the study. A quantitative content analysis of 102 public sector RFPs in New Zealand, as shown in Table 5, revealed that 45% explicitly included sustainability as a distinct evaluation criterion, with assigned weightings ranging from 1% to 20%. An additional 8% embedded sustainability considerations within broader evaluation categories, such as methodology or pass/fail criteria, without attributing explicit weightings. The remaining 47% of RFPs included no discernible sustainability requirements. These findings suggest a fragmented approach to sustainability integration, despite national policy commitments.

Figure 2 highlights the distribution of sustainability weightings across different project types, revealing notable variations. Sustainability considerations are most prevalent in commercial building projects (65%), followed by heavy civil and highway projects (58%) and industrial and civil projects (51%). In contrast, institutional building projects (24%) and residential building projects (17%) exhibit lower adoption rates. A key observation is that many institutional building projects, particularly those related to schools, lack sustainability

Table 5. Categories of sustainability evaluation approaches

Sustainability weighting approach	Number of RFPs	Frequency
Sustainability is a separate factor with quantifiable weighting	46	45%
Sustainability requirements are reflected in other selection factors	8	8%
No sustainability requirements	48	47%

Source(s): Authors' own creation

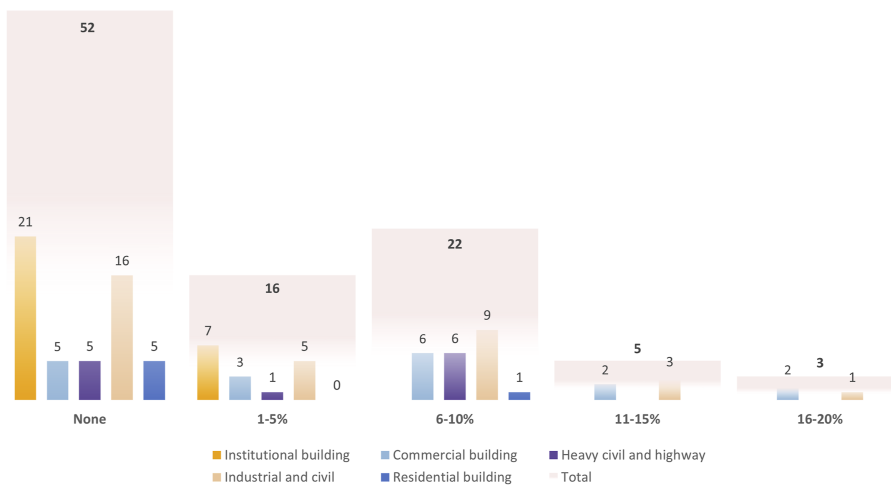


Figure 2. Distribution of sustainability weightings in the RFPs. Source: Authors' own creation

weightings, contributing to the lower percentage in this category. Excluding school projects, the proportion of institutional building projects incorporating sustainability criteria would exceed 50%, aligning with other project types. This highlights the importance of integrating sustainability into school-related construction, given the long-term impact on student well-being and environmental stewardship (Webster and Dunn, 2011). Furthermore, since this study focuses solely on RFPs from public sector agencies, the sample includes relatively few residential projects, which may impact the accuracy of the reported percentage for this category.

The summary statistics as shown in Table 6 indicate significant variation in the inclusion and weighting of sustainability criteria across project types. Commercial building projects had the highest average sustainability weighting with a median of 7.5%, suggesting consistent prioritisation, though the relatively high standard deviation points to diverse practices within the category. Heavy civil and highway and industrial and civil projects followed with similar average weightings, but a slightly lower median for industrial and civil, indicating more moderate central values. In contrast, institutional and residential building projects had low means and medians of 0%, showing that sustainability criteria were often not weighted in these categories. These patterns highlight sector-specific disparities in sustainability integration within public procurement processes.

4.2 Inductive categorisation of ESG criteria

This subsection addresses the third objective of the study. ESG-related selection criteria were inductively coded and grouped into three overarching categories: environmental impacts, social impacts and skills and training. Codes were developed from the language and evaluation sections of RFPs, allowing themes to emerge without pre-assigned classifications. The relative frequency of each criterion was calculated based on the number of RFPs that included sustainability content.

As shown in Table 7, these results highlight the most frequently emphasised criteria. Within the environmental category, the most frequently cited criteria include project-specific sustainability initiatives (30%), carbon footprint reduction (26%) and waste minimisation strategies (22%), highlighting a practical and implementation-focused approach. Social sustainability is also well represented, particularly measures enhancing workforce well-being and inclusion (26%), followed by initiatives supporting Māori and Pasifika engagement and workplace diversity. However, social criteria appear less frequently than environmental ones overall. Notably, the most prominent category is skills and training, led by ongoing workforce development (46%), apprenticeship programmes (24%) and targeted training for under-represented communities. This reflects a clear intent to strengthen local capabilities and build a resilient construction workforce.

The Sankey diagram as shown in Figure 3 illustrates the relationship between New Zealand's four public procurement priority outcomes and the specific sustainability criteria used in contractor selection, as captured across 102 RFPs. Each flow represents how frequently a particular criterion appears in tenders, with the width of the bands indicating

Table 6. Descriptive statistics of sustainability weightings by project type

Project type	Mean	SD	Median	Count
Institutional building	1.21%	2.18%	0%	29
Commercial building	7.25%	6.78%	7.5%	20
Heavy civil and highway	5.42%	4.98%	7.5%	12
Industrial and civil	5.14%	5.88%	5%	35
Residential building	1.67%	4.08%	0%	6

Source(s): Authors' own creation

Table 7. Selection criteria of sustainability requirements in RFPs

No.	Selection criteria	Frequency
	<i>Environmental impacts</i>	
1	Implementation of project-specific environmental sustainability initiatives	30%
2	Carbon footprint reduction strategies tailored to this project	26%
3	Waste minimisation proposals targeting construction waste, packaging, and e-waste	22%
4	Evidence of prior initiatives focused on low-carbon emissions and waste reduction	20%
5	Possession of recognised environmental accreditations or certifications	13%
6	Submission of a comprehensive waste management plan	13%
7	Greenhouse gas emissions reduction strategy	11%
8	Environmental management plan submission and implementation	11%
9	Strategies for recycling, reuse or repurposing of construction materials	9%
10	Provision of on-site composting or conservation-focused community engagement	7%
11	Demonstrated understanding of embodied carbon reduction in construction materials	6%
12	Water conservation and usage minimisation plan	2%
13	Sustainable transport and logistics strategy for project execution	2%
	<i>Social Impacts</i>	
14	Measures to enhance workforce economic, social, and cultural well-being, including targeted Māori initiatives	26%
15	Social sustainability initiatives proposed specifically for this project	17%
16	Proven record of recruiting and developing Māori and Pasifika businesses and personnel	15%
17	Demonstration of workplace diversity policies and practices	13%
18	Commitment to paying staff at or above the Living Wage	11%
19	Demonstrated understanding and application of New Zealand Government broader outcomes framework	7%
20	Contribution to community well-being, cohesion, and inclusion	6%
21	Initiatives focused on staff mental health, well-being, and harm reduction	4%
22	Commitment to employing staff locally during the contract term (FTE-based evidence)	4%
23	Support for SMEs, social enterprises and not-for-profit entities in the supply chain	4%
24	Preference for sourcing goods and services from local and regional businesses	4%
25	Initiatives promoting skill development within the local community	2%
26	Cultural awareness and special considerations for projects located on whenua Māori (land owned by Māori under ancestral or customary title)	2%
27	Business continuity plan detailing resilience and risk management strategies	2%
	<i>Skills and training</i>	
28	Ongoing professional development and training for the existing workforce	46%
29	Apprenticeship and trade training programmes	24%
30	Targeted workforce development for Māori and Pasifika communities	24%
31	Training pathways for new entrants into the construction sector	19%
32	Project-specific skills and training initiatives	15%
33	Demonstrated use of a local workforce wherever feasible	13%
34	Commitment to improving working conditions for site-based and subcontracted labour	6%
35	Provision of secondment or rotational development opportunities	2%
36	Clear articulation of structured career progression pathways	2%
37	Evidence of subcontractor engagement, including minimum 20% subcontractor participation	2%

Source(s): Authors' own creation

relative frequency, which means wider flows denote criteria that are mentioned more often. The right side of the diagram groups criteria into ESG categories.

A prominent observation is the strong emphasis on the domestic construction workforce, which channels the largest share of criteria into the social domain. These flows are visibly wider than any other category, highlighting a substantial policy focus on workforce capability building and inclusion. Interestingly, the social category overall receives the widest flow, even exceeding that of the environmental category. This finding contrasts with much of the

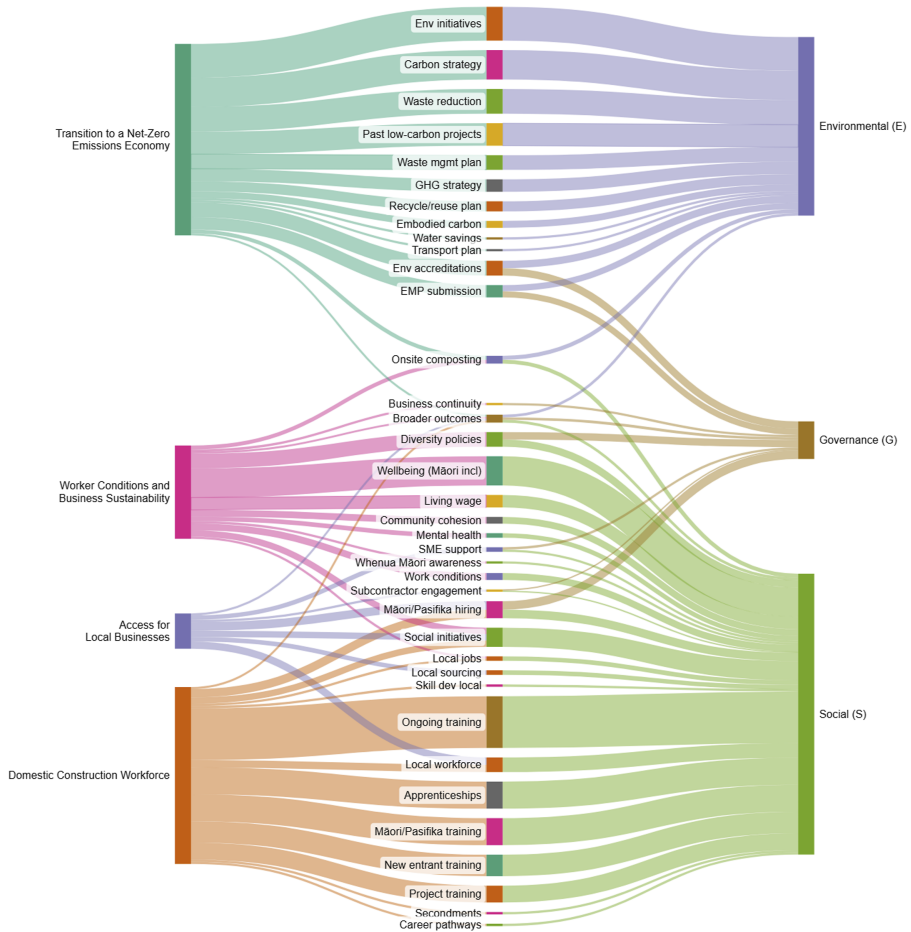


Figure 3. Sankey diagram of procurement priorities and ESG criteria. Source: Authors’ own creation

international literature, where environmental sustainability is typically the most cited in procurement while social concerns are often under-represented.

The transition to a net-zero emissions economy priority shows the strongest link to environmental criteria, particularly through requirements. Some criteria in this stream, like environmental management plans and accreditations, also intersect with governance, indicating a recognition of formal compliance mechanisms.

The worker conditions and business sustainability stream spans both social and governance domains. This reflects a mixed approach, where both values-based and regulatory considerations guide procurement decisions.

A notable weakness is the relatively narrow flow from the access for local businesses’ priority. Despite its inclusion in government policy, few RFPs emphasise local supplier support, small and medium-sized enterprise engagement or subcontractor participation as major evaluation factors. Similarly, governance criteria overall are mentioned less frequently than environmental or social ones, suggesting that compliance, accreditation and oversight mechanisms may still be secondary in actual tender evaluation practices.

4.3 Project size and ESG adoption

The final phase of analysis is to explore the relationship between project size and the assignment of sustainability weightings in RFPs, addressing the fourth objective of the study.

Chi-square tests were applied using 2×2 contingency tables with sample sizes deemed adequate for reliable estimation. According to Mchugh (2013), the assumptions of the chi-square test are best met when at least 80% of expected cell frequencies are 5 or greater, with no cell having an expected count below 1, and the conditions are typically satisfied when the total sample size is at least five times the number of cells. Consistent with standard statistical guidance (Agresti, 2018), the assumption of expected frequencies of at least 5 was verified prior to conducting the tests.

According to the results shown in Table 8, all expected cell frequencies exceeded the minimum threshold of 5, satisfying the test assumptions. The null hypothesis that project size is independent of the use of sustainability weightings is rejected ($p = 0.00072$), indicating a significant association between project size and sustainability weightings. Specifically, 63% of RFPs for large projects ($\geq \$1M$) include a quantifiable sustainability weighting, compared to only 27% for small projects ($< \$1M$). This suggests that larger projects are more likely to integrate sustainability considerations in procurement decisions. One possible explanation is that larger projects have greater budgets and resources to accommodate sustainability initiatives, whereas smaller projects may prioritise cost efficiency over environmental factors. This result highlights the potential need for targeted policy interventions to encourage sustainability adoption in smaller projects.

Conversely, the second chi-square test results in Table 9 show that project size is independent of sustainability weighting categories ($p = 0.67$), meaning there is no statistically significant relationship between project size and whether an RFP assigns 1–5% or more than 5% sustainability weighting. The expected frequencies closely align with the observed values, indicating no meaningful deviation. While larger projects ($\geq \$1M$) had a higher proportion (69%) of RFPs with more than 5% sustainability weighting compared to smaller projects (57%), this difference is not statistically significant. This suggests that while larger projects are more likely to include sustainability criteria in general, the actual weight assigned to sustainability is not necessarily influenced by project size.

Descriptive statistics of sustainability weightings by project size were calculated. For RFPs over NZD \$1m, the median weighting was 9.7% (SD = 4.4%), with a median of 10%. For smaller projects under NZD \$1m, the mean was 8.9% (SD = 4.0%), also with a median of 10%. These results suggest a slightly wider range of weightings in larger projects, although the central tendency remains similar across groups. These findings imply that sustainability commitment, when present, is relatively consistent across different project sizes. However, this analysis was based on a smaller subset, and several expected cell frequencies were close to the minimum threshold of 5, which may limit the reliability of the chi-square approximation.

Table 8. Chi-square analysis of project size and sustainability requirements

Project size	Number of RFPs		Total number of RFPs
	Sustainability weighting	No sustainability weighting	
Small (less than NZD \$1m)	14 27%	37 73%	51 100%
Large (NZD \$1m and over)	32 63%	19 37%	51 100%

Note(s): Chi-square statistic = 11.44; P -value = 0.00072; degrees of freedom = 1

Source(s): Authors' own creation

Table 9. Chi-square analysis of project size and sustainability weightings

Project size	Number of RFPs		Total number of RFPs
	1–5% sustainability weighting	More than 5% sustainability weighting	
Small (less than NZD \$1m)	6 43%	8 57%	14 100%
Large (NZD \$1m and over)	10 31%	22 69%	32 100%

Note(s): Chi-square statistic = 0.18; *P*-value = 0.67; degrees of freedom = 1

Source(s): Authors' own creation

Although the test was still applied, the results should be interpreted with caution due to the potential violation of test assumptions. Future research with larger sample sizes in each category would help produce more robust insights into the relationship between project size and sustainability weighting levels.

5. Discussion

5.1 Prevalence of sustainability in contractor evaluation

This study found that 45% of New Zealand public sector RFPs explicitly included sustainability as a separate evaluation criterion, representing a substantial increase from the 26% reported in [Xia et al. \(2014\)](#) for US public procurement. The comparison of the findings from both studies is shown in [Table 10](#). This upward shift indicates a growing institutional willingness to embed sustainability in procurement decisions. However, a concerning trend is the rise in RFPs without sustainability requirements, jumping from 33% in the US study to 47% in New Zealand, indicating that nearly half of public sector procurement processes still do not formally consider sustainability. Furthermore, while the proportion of RFPs with low sustainability weightings (1–5%) has decreased from 24% to 16%, the share of RFPs assigning no weight at all has increased from 33% to 55%, suggesting inconsistent adoption of sustainability in procurement.

Table 10. Comparison of similar studies

Comparison items	Xia et al. (2014)	This study
Number of RFPs	49	102
Issued period of RFPs	2000–2013	2024–2025
<i>Sustainability requirements for contractor evaluation</i>		
Sustainability is a separate factor with quantifiable weighting	26%	45%
Sustainability requirements are reflected in other selection factors	41%	8%
No sustainability requirements	33%	47%
<i>Sustainability weightings in RFPs</i>		
None	33%	55%
1–5%	24%	16%
6–10%	27%	22%
11–20%	12%	8%
21–30%	4%	0%

Source(s): Authors' own creation

It is important to note key differences between the two studies to contextualise the comparison. [Xia et al. \(2014\)](#) analysed US RFPs issued between 2000 and 2013, while this study reviewed New Zealand RFPs from 2024 to 2025. The US procurement system has a longer-established history of integrating sustainability at federal and state levels, often underpinned by formal sustainability mandates, whereas New Zealand's broader outcomes policy has only been in effect since 2019. While these findings suggest New Zealand lags behind global leaders in sustainability procurement, a key limitation of this comparison is the difference in project size between the US and New Zealand. As noted earlier in this study, project size can significantly influence whether sustainability requirements are included in contractor selection. US public sector projects tend to be significantly larger in scale, often necessitating more formalised sustainability criteria. Differences in terminology, regulatory frameworks and procurement processes also affect how sustainability is defined and weighted across jurisdictions.

International literature, including findings from the UAE ([Asaad and El-Sayegh, 2021](#)) and Turkey ([Özyürek and Erdal, 2023](#)), shows considerable variability in sustainability uptake, ranging from 2% to nearly 40% depending on project context. In this regard, New Zealand sits within the global mid-range but lacks the consistency seen in jurisdictions with mandatory ESG integration. Moreover, the lower adoption rates among institutional projects, particularly school construction, highlight gaps between policy intent and implementation, especially in sectors with broad social impact. These results suggest a need for clearer government mandates and capacity-building across procurement agencies to ensure broader and more uniform ESG adoption.

5.2 Weightings assigned to ESG criteria

Among RFPs that included sustainability as an evaluation factor, most allocated a weighting between 6 and 10%, resulting in an average of 4.3% across the full sample. This average aligns closely with international benchmarks, such as the 5.8% found in civil engineering projects in Nigeria ([Okereke et al., 2022](#)) and the 5.5% reported in Pakistan ([Soomro et al., 2020](#)), yet remains below the 8.4% average observed in US tenders a decade earlier ([Xia et al., 2014](#)). While the increase in mid-range weightings is encouraging, the fact that over half of all RFPs (55%) still assign no quantifiable weight to sustainability reveals its continued status as a non-core procurement criterion. Notably, this study also confirmed a significant correlation between project size and the inclusion of sustainability weighting, with 63% of large-scale projects incorporating ESG measures versus only 27% of smaller projects. However, no significant relationship was found between project size and the magnitude of sustainability weighting, suggesting that when ESG is included, its perceived importance is relatively consistent regardless of project scale. This reinforces the need for targeted policies to mainstream ESG considerations in small and medium-sized projects, where sustainability remains largely optional or symbolic.

5.3 Types and emphasis of ESG criteria

New Zealand's procurement practices reveal a more action-oriented and context-specific approach to ESG compared to international norms. While global literature frequently highlights broad themes such as environmental management systems, compliance with ethical standards and general corporate responsibility ([Demirci and Isik, 2024](#); [Gurgun and Koc, 2020](#)), this study finds a sharper focus on workforce development and project-specific environmental actions. The most frequently cited criteria in New Zealand RFPs include ongoing workforce training, project-level environmental initiatives and carbon reduction strategies, reflecting alignment with both national climate legislation and the broader outcomes policy. Social sustainability also receives considerable attention, especially through Māori and Pasifika workforce inclusion and culturally targeted well-being measures, which are dimensions largely absent from the global literature. Conversely, governance-related criteria such as ethical sourcing and third-party verification remain underused, indicating a potential area for improvement.

The Sankey analysis confirms that workforce development dominates procurement priorities in New Zealand, with visibly stronger flows to the social domain than to environmental or governance pillars. This is a significant departure from global patterns, where environmental sustainability typically commands the most attention in public procurement frameworks (Sarpong *et al.*, 2024). In contrast, New Zealand's approach places greater emphasis on workforce-related outcomes, particularly skills development, employment pathways and Māori and Pasifika inclusion (Hsiao *et al.*, 2024), which signals a distinctive alignment between procurement and domestic socioeconomic policy.

This finding illustrates how the local policy landscape, demographic composition and industry capacity gaps shape the practical implementation of ESG principles (Moshood *et al.*, 2024). For example, the broader outcomes framework mandates public agencies to support domestic workforce capability, resulting in a strong focus on apprenticeship schemes, on-the-job training and professional development, which are elements that are only sporadically addressed in international literature (Allen, 2021). Furthermore, New Zealand's emphasis on social equity and indigenous inclusion aligns with national commitments to honour Te Tiriti o Waitangi and reduce disparities across population groups (Macpherson and Turoa, 2025). However, among the four broader outcome priority areas, access for local businesses, including support for SMEs and regional suppliers, is mentioned far less frequently, suggesting a gap between policy intent and implementation.

Figure 4 reinforces this point by visually mapping the relative importance of ESG criteria in New Zealand and international contexts. It summarises the key themes observed in contractor selection criteria, positioning each bubble according to how strongly it is emphasised in public procurement documents from New Zealand compared to findings from the literature. The figure shows that while global procurement practices often place greater emphasis on environmental credentials and governance-related compliance, New Zealand places more weight on social outcomes. This contrast highlights the significance of local context in shaping ESG integration. A standardised global framework may not adequately reflect the unique policy goals and socioeconomic conditions present in different regions. In the case of New Zealand, procurement serves not only as a process for selecting contractors but also as a strategic instrument for advancing inclusive growth, strengthening industry capabilities and promoting equity across the construction sector.

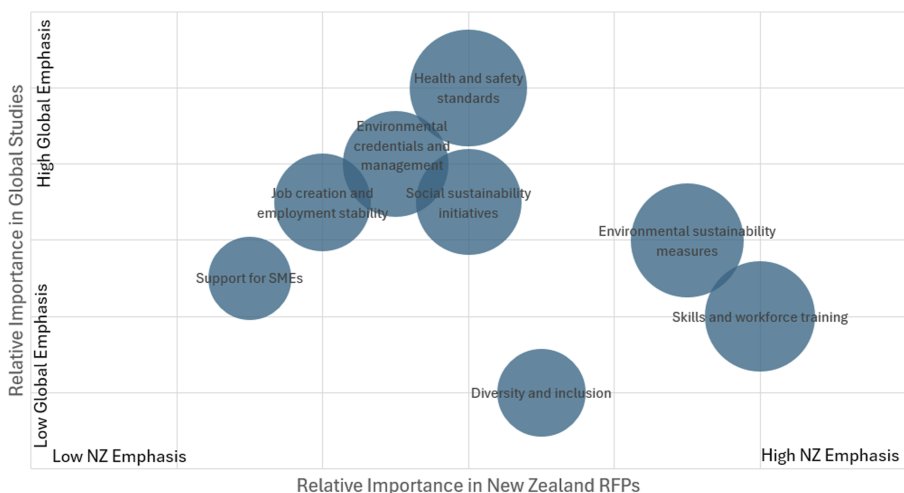


Figure 4. Relative importance of ESG criteria in New Zealand RFPs and global studies. Source: Authors' own creation

6. Conclusion

This study provides empirical evidence on how ESG principles are operationalised in New Zealand's public sector construction procurement. Through a detailed content analysis of 102 RFPs, the research highlights a growing but uneven integration of sustainability criteria. While nearly half of the tenders now include explicit sustainability weightings, a substantial portion still omit ESG considerations altogether, indicating a gap between policy frameworks and procurement practice. Among those that do incorporate ESG measures, the average weighting remains moderate and largely influenced by project size.

A key contribution of this study lies in its identification of thematic emphasis: unlike international trends that prioritise environmental and governance metrics, New Zealand places a stronger focus on social outcomes, particularly workforce development, inclusion and training. This context-specific approach reflects the country's policy direction under the broader outcomes framework and aligns with national priorities such as Māori and Pasifika inclusion and local capacity building. These findings emphasise the importance of tailoring ESG frameworks to local policy goals, demographic realities and economic structures rather than relying on universal models.

To support more effective implementation, several practical interventions are recommended. These include capacity-building programmes for procurement professionals, revised tender templates with clearer ESG guidance and mechanisms for inter-agency knowledge sharing. Such measures could help mainstream ESG criteria, especially in sectors and smaller projects where uptake remains limited. The study also points to a need for more consistent application of ESG expectations across institutional clients.

Theoretically, the research contributes to growing scholarship on ESG localisation, reinforcing the value of analysing sustainability through national policy lenses rather than generic global benchmarks. Future research could examine how these ESG expectations are interpreted and implemented by contractors during project delivery and whether the inclusion of sustainability criteria in procurement evaluations leads to measurable performance improvements. Comparative studies across sectors or between local and central government agencies would also provide valuable insights into variation in ESG maturity. Finally, developing standardised metrics for evaluating social and governance outcomes would support more consistent and accountable ESG integration across the procurement lifecycle.

As with all content analysis studies, this research is limited by its reliance on publicly available documents, which may not capture the full decision-making context or informal practices. Further studies using interviews, surveys, or project performance data could offer deeper insight. Nonetheless, these findings hold practical relevance for policy, education and industry by informing procurement training programmes, shaping policy refinement and helping agencies and contractors align practices with national ESG objectives.

References

- Abdullah, R.M., Rahman, A.I. and Azis, A.A.A. (2010), "Causes of delay in MARA management procurement construction projects", *Journal of Surveying, Construction and Property*, Vol. 1 No. 1, pp. 1-16, doi: [10.22452/jscp.vol1no1.6](https://doi.org/10.22452/jscp.vol1no1.6).
- Agresti, A. (2018), *Statistical Methods for the Social Sciences*, Pearson, London.
- Ahmed, O.M. and El-Adaway, H.I. (2023), "Data-driven analysis of construction bidding stage-related causes of disputes", *Journal of Management in Engineering*, Vol. 39 No. 5, 04023026, doi: [10.1061/JMENEA.MEENG-5426](https://doi.org/10.1061/JMENEA.MEENG-5426).
- Al Shouny, A., Issa, U.H., Miky, Y.H. and Sharaky, I.A. (2023), "Evaluating and selecting the best sustainable concrete mixes based on recycled waste materials", *Case Studies in Construction Materials*, Vol. 19, e02382, doi: [10.1016/j.cscm.2023.e02382](https://doi.org/10.1016/j.cscm.2023.e02382).
- Ali, W., Samarasinghe, S.A.D., Feng, Z., Wilkinson, S. and Rotimi, B.O.J. (2025), "A systematic literature review on digital transformation in real estate: challenges and opportunities", *Smart*

- Allen, B. (2021), "Broader outcomes in procurement policy – a case of New Zealand pragmatism", *Journal of Public Procurement*, Vol. 21 No. 3, pp. 318-341, doi: [10.1108/JOPP-04-2021-0025](https://doi.org/10.1108/JOPP-04-2021-0025).
- Asaad, A. and El-Sayegh, M.S. (2021), "Key criteria for selecting green suppliers for construction projects in the UAE", *Journal of Financial Management of Property and Construction*, Vol. 26 No. 2, pp. 201-218, doi: [10.1108/JFMPC-11-2019-0083](https://doi.org/10.1108/JFMPC-11-2019-0083).
- Barbhuiya, S. and Das, B.B. (2023), "Life cycle assessment of construction materials: methodologies, applications and future directions for sustainable decision-making", *Case Studies in Construction Materials*, Vol. 19, e02326, doi: [10.1016/j.cscm.2023.e02326](https://doi.org/10.1016/j.cscm.2023.e02326).
- Barraket, J., Keast, R. and Furneaux, C. (2015), *Social Procurement and New Public Governance*, Taylor & Francis, Abingdon.
- Benington, J. and Moore, M.H. (2011), *Public Value: Theory and Practice*, Macmillan Education, London.
- Birks, M., Chapman, Y. and Francis, K. (2008), "Memoing in qualitative research", *Journal of Research in Nursing*, Vol. 13 No. 1, pp. 68-75, doi: [10.1177/1744987107081254](https://doi.org/10.1177/1744987107081254).
- Bogus, M.S., Migliaccio, C.G. and Jin, R. (2013), "Study of the relationship between procurement duration and project performance in design-build projects: comparison between water/wastewater and transportation sectors", *Journal of Management in Engineering*, Vol. 29 No. 4, pp. 382-391, doi: [10.1061/\(ASCE\)ME.1943-5479.0000165](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000165).
- Cai, J., Li, Z., Dou, Y., Teng, Y. and Yuan, M. (2023), "Contractor selection for green buildings based on the fuzzy Kano model and TOPSIS: a developer satisfaction perspective", *Engineering Construction and Architectural Management*, Vol. 30 No. 10, pp. 5073-5108, doi: [10.1108/ECAM-01-2022-0054](https://doi.org/10.1108/ECAM-01-2022-0054).
- Campbell, L.J., Quincy, C., Osserman, J. and Pedersen, K.O. (2013), "Coding in-depth Semistructured interviews", *Sociological Methods and Research*, Vol. 42 No. 3, pp. 294-320, doi: [10.1177/0049124113500475](https://doi.org/10.1177/0049124113500475).
- Celoza, A. and Owens, V. (2025), "Perspectives on ESG materiality in the engineering and construction industry: an exploratory study", *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, Vol. 17 No. 2, 05025001, doi: [10.1061/JLADAH.LADR-1219](https://doi.org/10.1061/JLADAH.LADR-1219).
- Collins, W., Parrish, K. and Gibson, E.G. (2017), "Defining and understanding "small projects" in the industrial construction sector", *Procedia Engineering*, Vol. 196, pp. 315-322, doi: [10.1016/j.proeng.2017.07.205](https://doi.org/10.1016/j.proeng.2017.07.205).
- Cravero, C. (2018), "Promoting supplier diversity in public procurement: a further step in responsible supply chain", *European Journal of Sustainable Development Research*, Vol. 2 No. 1, 8, doi: [10.20897/ejosdr/80730](https://doi.org/10.20897/ejosdr/80730).
- Demirci, S.F. and Isik, Z. (2024), "Developing a community responsive resilient contractor selection model for post-disaster reconstruction projects: a build back better approach", *Engineering Construction and Architectural Management*, Vol. ahead-of-print No. ahead-of-print, doi: [10.1108/ECAM-06-2024-0802](https://doi.org/10.1108/ECAM-06-2024-0802).
- Dhawan, K., Tookey, J., Ghaffarianhoseini, A. and Ghaffarianhoseini, A. (2022), "Consolidating loads for sustainable construction in New Zealand: a literature review-based research framework", *Smart and Sustainable Built Environment*, Vol. 11 No. 2, pp. 313-333, doi: [10.1108/SASBE-08-2021-0151](https://doi.org/10.1108/SASBE-08-2021-0151).
- Doloi, H. (2009), "Analysis of pre-qualification criteria in contractor selection and their impacts on project success", *Construction Management and Economics*, Vol. 27 No. 12, pp. 1245-1263, doi: [10.1080/01446190903394541](https://doi.org/10.1080/01446190903394541).
- Egemen, M. (2022), "Building construction clients' design consultant and contractor selection criteria versus post-occupancy satisfaction levels", *Sage Open*, Vol. 12 No. 2, doi: [10.1177/21582440221089968](https://doi.org/10.1177/21582440221089968).

- Eldahrotly, K., Farghali, A., Shehata, N. and Mohamed, O. (2023), "Valorification of Egyptian volcanic tuff as eco-sustainable blended cementitious materials", *Scientific Reports*, Vol. 13 No. 1, 3653, doi: [10.1038/s41598-023-30612-0](https://doi.org/10.1038/s41598-023-30612-0).
- Elo, S. and Kyngäs, H. (2008), "The qualitative content analysis process", *Journal of Advanced Nursing*, Vol. 62 No. 1, pp. 107-115, doi: [10.1111/j.1365-2648.2007.04569.x](https://doi.org/10.1111/j.1365-2648.2007.04569.x).
- European Commission (2017), European pillar of social rights.
- Flynn, A. and Davis, P. (2017), "Explaining sme participation and success in public procurement using a capability-based model of tendering", *Journal of Public Procurement*, Vol. 17 No. 3, pp. 337-372, doi: [10.1108/jopp-17-03-2017-b003](https://doi.org/10.1108/jopp-17-03-2017-b003).
- Franke, M.T., Ho, T. and Christie, A.C. (2012), "The chi-square test", *American Journal of Evaluation*, Vol. 33 No. 3, pp. 448-458, doi: [10.1177/10982140111426594](https://doi.org/10.1177/10982140111426594).
- Gransberg, D.D. and Barton, F.R. (2007), "Analysis of federal design-build request for proposal evaluation criteria", *Journal of Management in Engineering*, Vol. 23 No. 2, pp. 105-111, doi: [10.1061/\(ASCE\)0742-597X\(2007\)23:2\(105\)](https://doi.org/10.1061/(ASCE)0742-597X(2007)23:2(105)).
- Gransberg, D.D. and Windel, E. (2008), "Communicating design quality requirements for public sector design/build projects", *Journal of Management in Engineering*, Vol. 24 No. 2, pp. 105-110, doi: [10.1061/\(ASCE\)0742-597X\(2008\)24:2\(105\)](https://doi.org/10.1061/(ASCE)0742-597X(2008)24:2(105)).
- Guest, G., MacQueen, K.M. and Namey, E.E. (2012), *Applied Thematic Analysis*, SAGE Publications, Thousand Oaks, CA.
- Gunatilake, S. (2013), *The Uptake and Implementation of Sustainable Construction: Transforming Policy into Practice*, University of Central Lancashire, Preston.
- Gurgun, P.A. and Koc, K. (2020), "Contractor prequalification for green buildings—evidence from Turkey", *Engineering Construction and Architectural Management*, Vol. 27 No. 6, pp. 1377-1400, doi: [10.1108/ECAM-10-2019-0543](https://doi.org/10.1108/ECAM-10-2019-0543).
- Guthrie, J., Petty, R., Yongvanich, K. and Ricceri, F. (2004), "Using content analysis as a research method to inquire into intellectual capital reporting", *Journal of Intellectual Capital*, Vol. 5 No. 2, pp. 282-293, doi: [10.1108/14691930410533704](https://doi.org/10.1108/14691930410533704).
- Hsiao, K. P.-C., Low, M. and Scott, T. (2024), Service performance reporting and principles-based authoritative guidance: an analysis of New Zealand higher education institutions, *Meditari Accountancy Research*, Vol. 322, pp. 367-395, doi: [10.1108/MEDAR-10-2022-1825](https://doi.org/10.1108/MEDAR-10-2022-1825)
- Hsieh, H.-F. and Shannon, E.S. (2005), "Three approaches to qualitative content analysis", *Qualitative Health Research*, Vol. 15 No. 9, pp. 1277-1288, doi: [10.1177/1049732305276687](https://doi.org/10.1177/1049732305276687).
- Jain, S., Jauhar, K.S. and Piyush (2024), "A machine-learning-based framework for contractor selection and order allocation in public construction projects considering sustainability, risk, and safety", *Annals of Operations Research*, Vol. 338 No. 1, pp. 225-267, doi: [10.1007/s10479-024-05898-6](https://doi.org/10.1007/s10479-024-05898-6).
- Jámbor, A. and Zanócz, A. (2023), "The diversity of environmental, social, and governance aspects in sustainability: a systematic literature review", *Sustainability*, Vol. 15 No. 18, 13958, doi: [10.3390/su151813958](https://doi.org/10.3390/su151813958).
- Koc, K., Ekmekcioglu, Ö. and Işık, Z. (2023), "Developing a hybrid fuzzy decision-making model for sustainable circular contractor selection", *Journal of Construction Engineering and Management*, Vol. 149 No. 10, 04023095, doi: [10.1061/JCEMD4.COENG-13305](https://doi.org/10.1061/JCEMD4.COENG-13305).
- Kolbe, R.H. and Burnett, M.S. (1991), "Content-analysis research: an examination of applications with directives for improving research reliability and objectivity", *Journal of Consumer Research*, Vol. 18 No. 2, pp. 243-250, doi: [10.1086/209256](https://doi.org/10.1086/209256).
- Le-Hoai, L., Lee, D.Y. and Lee, Y.J. (2008), "Delay and cost overruns in Vietnam large construction projects: a comparison with other selected countries", *KSCE Journal of Civil Engineering*, Vol. 12 No. 6, pp. 367-377, doi: [10.1007/s12205-008-0367-7](https://doi.org/10.1007/s12205-008-0367-7).
- Lindell, A. and Olander, S. (2019), "Social considerations in the procurement of road and railroad projects in Sweden", in *10th Nordic Conference on Construction Economics and Organization*, pp. 17-23.

- Loosemore, M. (2016), "Social procurement in UK construction projects", *International Journal of Project Management*, Vol. 34 No. 2, pp. 133-144, doi: [10.1016/j.ijproman.2015.10.005](https://doi.org/10.1016/j.ijproman.2015.10.005).
- Lou, X.C., Natoli, R., Goodwin, D., Bok, B., Zhao, F. and Zhang, P. (2023), "A systematic literature review of research on social procurement in the construction and infrastructure sector: barriers, enablers, and strategies", *Sustainability*, Vol. 15 No. 17, 12964, doi: [10.3390/su151712964](https://doi.org/10.3390/su151712964).
- Macpherson, E. and Turoa, H. (2025), "Untapping the potential of Indigenous water jurisdiction: perspectives from Whanganui and Aotearoa New Zealand", *Humanities and Social Sciences Communications*, Vol. 12 No. 1, 86, doi: [10.1057/s41599-025-04382-1](https://doi.org/10.1057/s41599-025-04382-1).
- Mccruden, C. (2004), "Using public procurement to achieve social outcomes", *Natural Resources Forum*, Vol. 28 No. 4, pp. 257-267, doi: [10.1111/j.1477-8947.2004.00099.x](https://doi.org/10.1111/j.1477-8947.2004.00099.x).
- Mchugh, L.M. (2013), "The Chi-square test of independence", *Biochemia Medica*, Vol. 23 No. 2, pp. 143-149, doi: [10.11613/BM.2013.018](https://doi.org/10.11613/BM.2013.018).
- Mclain, K., Gransberg, D.D. and Loulakis, C.M. (2014), "Managing geotechnical risk on US design-build transport projects", *Construction Economics and Building*, Vol. 14 No. 1, pp. 1-19, doi: [10.5130/AJCCEB.v14i1.3745](https://doi.org/10.5130/AJCCEB.v14i1.3745).
- Ministry for the Environment (2022), Towards a productive, sustainable and inclusive economy: aotearoa New Zealand's first emissions reduction plan.
- Ministry of Business Innovation and Employment (2018), New Zealand's support for small business.
- Ministry of Business Innovation and Employment (2019), *Government Procurement Rules: Rules for Sustainable and Inclusive Procurement*.
- Ministry of Business Innovation and Employment (2024), "Building and construction sector trends: annual report 2023".
- Molenaar, R.K., Sobin, N. and Antillón, I.E. (2010), "A synthesis of best-value procurement practices for sustainable design-build projects in the public sector", *Journal of Green Building*, Vol. 5 No. 4, pp. 148-157, doi: [10.3992/jgb.5.4.148](https://doi.org/10.3992/jgb.5.4.148).
- Montalbán-Domingo, L., García-Segura, T., Sanz, A.M. and Pellicer, E. (2018), "Social sustainability criteria in public-work procurement: an international perspective", *Journal of Cleaner Production*, Vol. 198, pp. 1355-1371, doi: [10.1016/j.jclepro.2018.07.083](https://doi.org/10.1016/j.jclepro.2018.07.083).
- Moshood, D.T., Rotimi, O.J. and Shahzad, W. (2024), "Enhancing sustainability considerations in construction industry projects", *Environment, Development and Sustainability*, doi: [10.1007/s10668-024-04946-2](https://doi.org/10.1007/s10668-024-04946-2).
- Naismith, N., Sethi, R., Ghaffarianhoseini, A. and Tookey, J. (2016), "Managing conflict in engineering projects: New Zealand experiences", *International Journal of Construction Supply Chain Management*, Vol. 6 No. 1, pp. 19-34, doi: [10.14424/ijcscm601016-19-34](https://doi.org/10.14424/ijcscm601016-19-34).
- Nayak, V.N. and Taylor, E.J. (2009), "Offshore outsourcing in global design networks", *Journal of Management in Engineering*, Vol. 25 No. 4, pp. 177-184, doi: [10.1061/\(ASCE\)0742-597X\(2009\)25:4\(177\)](https://doi.org/10.1061/(ASCE)0742-597X(2009)25:4(177)).
- Neuendorf, K.A. (2017), *The Content Analysis Guidebook*, SAGE Publications, Thousand Oaks, CA.
- Ofori, G. (2006/2006), Attaining sustainability through construction procurement in Singapore.
- Okereke, A.R., Pepple, I.D. and Ihekwe, M.N. (2022), "Assessment of the major contractors' selection criteria and their impacts in civil engineering construction projects", *ITEGAM- Journal of Engineering and Technology for Industrial Applications (ITEGAM-JETIA)*, Vol. 8 No. 36, pp. 4-13, doi: [10.5935/jetia.v8i36.820](https://doi.org/10.5935/jetia.v8i36.820).
- Özyürek, İ. and Erdal, M. (2023), "Crisp and fuzzy appraisal of tenderer's qualifications in public works procurement in Turkey", *Journal of Public Procurement*, Vol. 23 No. 1, pp. 78-99, doi: [10.1108/JOPP-09-2021-0060](https://doi.org/10.1108/JOPP-09-2021-0060).
- Preuss, L. (2009), "Addressing sustainable development through public procurement: the case of local government", *Supply Chain Management: International Journal*, Vol. 14 No. 3, pp. 213-223, doi: [10.1108/13598540910954557](https://doi.org/10.1108/13598540910954557).

- Puerto, D.L.C., Gransberg, D.D. and Shane, S.J. (2008), "Comparative analysis of owner goals for design/build projects", *Journal of Management in Engineering*, Vol. 24 No. 1, pp. 32-39, doi: [10.1061/\(ASCE\)0742-597X\(2008\)24:1\(32\)](https://doi.org/10.1061/(ASCE)0742-597X(2008)24:1(32)).
- Raiden, A. and King, A. (2023), "Added value and numerical measurement of social value: a critical enquiry", *Buildings and Cities*, Vol. 4 No. 1, pp. 767-782, doi: [10.5334/bc.330](https://doi.org/10.5334/bc.330).
- Raiden, A., Loosemore, M., King, A. and Gorse, C. (2018), "Social value in construction", doi: [10.1201/9781315100807](https://doi.org/10.1201/9781315100807).
- Rashid, I., Ismail, S., Mohamed, Z., Hamat, B. and Mohd Rani, W.N.M.W. (2018a), "Managing multi-criteria contractor selection for public construction projects in Malaysia", *Compusoft*, Vol. 7 No. 11, pp. 2874-2878.
- Rashid, I., Ismail, S., Mohamed, Z. and Saleh, L.A. (2018b), "Contractor selection criteria: a study on Malaysian public construction projects", *International Journal of Engineering and Technology*, Vol. 7 No. 3.25, p. 65, doi: [10.14419/ijet.v7i3.25.17471](https://doi.org/10.14419/ijet.v7i3.25.17471).
- Saldana, J. (2015), *The Coding Manual for Qualitative Researchers*, SAGE Publications.
- Sarpong, A.F., Kissi, E., Acheamfour, K.V., Abu, M.I. and Eluerkeh, K. (2024), "Establishing the economic sustainability criteria for assessing tenders in the procurement of building works", *Public Works Management and Policy*, Vol. 29 No. 4, pp. 612-635, doi: [10.1177/1087724X231221432](https://doi.org/10.1177/1087724X231221432).
- Seadon, J. and Tookey, E.J. (2019), "Drivers for construction productivity", *Engineering Construction and Architectural Management*, Vol. 26 No. 6, pp. 945-961, doi: [10.1108/ECAM-05-2016-0127](https://doi.org/10.1108/ECAM-05-2016-0127).
- Soomro, I.U.N., Memon, H.A., Memon, A.N. and Memon, R.K. (2020), "Contractor's selection criteria in construction works in Pakistan", *Engineering, Technology and Applied Science Research*, Vol. 10 No. 2, pp. 5520-5523, doi: [10.48084/etasr.3334](https://doi.org/10.48084/etasr.3334).
- Stanford, S.M., Molenaar, R.K. and Sheeran, M.K. (2016), "Application of indefinite delivery-indefinite quantity construction strategies at the federal level", *Journal of Management in Engineering*, Vol. 32 No. 5, 04016011, doi: [10.1061/\(ASCE\)ME.1943-5479.0000437](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000437).
- Stojanović, I. (2024), "Selection of a green contractor for the implementation of a solar power plant project", *Symmetry*, Vol. 16 No. 4, p. 441, doi: [10.3390/sym16040441](https://doi.org/10.3390/sym16040441).
- Symes, A. (1999), "Creating public value: strategic management in government (Cambridge, MA: Harvard University press) by mark Moore", *International Public Management Journal*, Vol. 2 No. 1, pp. 158-167, doi: [10.1016/S1096-7494\(00\)87438-3](https://doi.org/10.1016/S1096-7494(00)87438-3).
- United Nations (2015), Paris agreement.
- Walker, H. and Brammer, S. (2009), "Sustainable procurement in the United Kingdom public sector", *Supply Chain Management: International Journal*, Vol. 14 No. 2, pp. 128-137, doi: [10.1108/13598540910941993](https://doi.org/10.1108/13598540910941993).
- Walker, H. and Brammer, S. (2012), "The relationship between sustainable procurement and e-procurement in the public sector", *International Journal of Production Economics*, Vol. 140 No. 1, pp. 256-268, doi: [10.1016/j.ijpe.2012.01.008](https://doi.org/10.1016/j.ijpe.2012.01.008).
- Weber, R.P. (1990), *Basic Content Analysis*, SAGE Publications, Thousand Oaks, CA.
- Webster, B.C. and Dunn, C.B. (2011), "Creating a model of sustainability through the design, construction, and operations of a new high school", *Journal of Green Building*, Vol. 6 No. 3, pp. 1-20, doi: [10.3992/jgb.6.3.1](https://doi.org/10.3992/jgb.6.3.1).
- West, N., Scheepbouwer, E. and Walt, D.V.D.J. (2022), "Resource allocation for transportation physical works contracts", *Proceedings of International Structural Engineering and Construction*, Vol. 9 No. 2, doi: [10.14455/ISEC.2022.9\(2\).CON-03](https://doi.org/10.14455/ISEC.2022.9(2).CON-03).
- Xia, B., Chan, A., Zuo, J. and Molenaar, K. (2013), "Analysis of selection criteria for design-builders through the analysis of requests for proposal", *Journal of Management in Engineering*, Vol. 29 No. 1, pp. 19-24, doi: [10.1061/\(ASCE\)ME.1943-5479.0000119](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000119).

- Xia, B., Skitmore, M., Wu, P. and Chen, Q. (2014a), "How public owners communicate the sustainability requirements of green design-build projects", *Journal of Construction Engineering and Management*, Vol. 140 No. 8, 04014036, doi: [10.1061/\(ASCE\)CO.1943-7862.0000879](https://doi.org/10.1061/(ASCE)CO.1943-7862.0000879).
- Xia, B., Skitmore, M., Zuo, J., Zhao, Z.-Y. and Nepal, M. (2014b), "Defining sustainability requirements for design-build (DB) contractor selection in public sector projects", in *18th International Symposium on Advancement of Construction Management and Real Estate*.

Corresponding author

Chandana Siriwardana can be contacted at: c.siriwardana@massey.ac.nz