Article

Social Procurement in the Chinese Construction Industry: Relevance, Drivers and Barriers to Implementation

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Abstract: This paper addresses the current imbalance in construction social procurement research toward Western countries with neo-liberal models of public governance. It does this by exploring the potential value of construction social procurement in the Chinese centralized unitary state and socialist market system. Findings from a survey of one hundred and sixty-four professionals from the Chinese construction industry are reported. They highlight the institutional foundations into which social procurement could be implemented and the significant untapped social value that could be created. However, they also show that for social procurement to achieve its full potential in the Chinese construction industry, such policies need to be underpinned by meaningful industry consultation, effective education and clearly mandated targets that create a market for social value. This paper contributes to the global advancement of social procurement research in construction by providing new insights into the implementation of social procurement beyond the narrow confines of the Western political and governmental orthodoxies where such research has hitherto been focused.

Keywords: social procurement; social value; new public governance; China

1. Introduction

In most countries, the government is by far the biggest procurer of construction industry goods and services, creating significant untapped potential to strategically leverage government spending to help achieve social policy objectives [1]. This has led to a recent proliferation of social procurement policies, frameworks and guidelines around the world that target the construction industry [2,3]. The growing international importance of social procurement in construction has been recognized in the new ISO 22058:2022 on construction procurement, which includes specific guidance on this subject [4].

However, construction research in this area has been almost exclusively focused on a small number of Western countries that are pioneering these policies (most notably the UK, Canada, Sweden, Australia and New Zealand) [1,5–8]. The aim of this study was to address this current geographical bias in construction social procurement research by exploring how the concept of social procurement could be implemented in the Chinese construction industry. More specifically, this research explored the following research questions:

1. What is the relevance of social procurement in a Chinese construction industry context?
2. What are the factors that may drive the adoption of social procurement in the Chinese construction industry?
3. What would be the potential barriers to implementing social procurement policies in the Chinese construction industry?

While social procurement research needs to be broadened to encompass many excluded non-Western countries, China represents a particularly important context to expand

existing social procurement research. Not only does its centralized unitary state and socialist market economy broaden discussions about the value of social procurement beyond the current confines of Western liberal governmental and market-based orthodoxies, but the untapped social value created from social procurement could be significant. This is estimated to be about 762 billion RMB based on government public infrastructure expenditure of 2540.6 billion RMB in 2020 in China using the 30% multipliers recommended by the UK's Social Value Portal [9,10]. Furthermore, as discussed in more detail below, the current social priorities embedded in China's five-year plans and its fast-growing private and social economy sectors make social procurement highly relevant in this country [11].

More broadly, the importance of more international comparative research in the field of social procurement has been noted by Raiden et al. [3] and the geographical bias in current construction social research procurement limits the potential social value that could be created by implementing social procurement policies globally. The untapped social value that could be created globally from implementing social procurement is estimated to be about USD 4 trillion based on the anticipated global construction output, which is expected to be USD 13.3 trillion by 2025 [12].

2. The Relevance of Social Procurement in the Chinese Construction Industry Context

The origins of social procurement can be traced back to the dismantling of the Poor Laws in the UK, Western post-World-War-II economic recovery strategies and 1960s civil rights movements [13,14]. During this period, Western governments promoted public procurement as a market-based mechanism to address poverty and advance affirmative action and equality of employment for disadvantaged groups, such as disabled workers, war veterans, racial minorities and women. Bodies such as the International Labour Organisation have also advanced social procurement as an innovative way to address global challenges, such as modern slavery, human rights and the United Nations Sustainable Development Goals [15,16]. The contemporary re-emergence of social procurement has its roots in the "New Public Governance" trend in liberal Western countries, which repositions governments as "enablers" rather than traditional "providers" of social welfare services through what Bromley and Meyer [17] describe as a "plural state". The plural state is characterized by a blurring of traditional boundaries between government, private and non-profit sectors, where multiple interdependent organizations contribute to the delivery of public services. Social procurement epitomizes this philosophy because as a unique expansion of public-private partnership thinking, it involves governments contractually requiring organizations in their supply chains (like construction companies) to collaborate with third-sector organizations (such as social enterprises, not-for-profits, community organizations, charities, and minority and local businesses) in addressing social problems (such as long-term unemployment) as a condition of securing public sector contracts [3,13]. Supported by government legislation in many countries and regions, these hybrid organizational assemblages [18] can address social priorities in numerous ways. For example, in the UK, the Social Value (Public Services) Act 2012 [19] provides firms with flexibility on how to respond to particular community needs in any way they see fit. In contrast, legislation in other countries, like Australia, has a much more targeted and inflexible approach, which involves mandating employment-related targets for certain groups (such as Indigenous people, women, or refugees and migrants) [5,20,21].

Critics of market-based welfare approaches, like social procurement, argue that such approaches to public policy are simply a rhetorical smokescreen for market-based approaches to welfare, which are unsupported by evidence of better outcomes for communities [3,22]. However, social procurement policies targeted at major industries, like construction, continue to proliferate across many countries [2,23,24]., as discussed above, there is a paucity of social procurement research outside the Western context, which raises important unexplored questions about its potential in other geographical, governance and political contexts, like China.

In contrast with countries like the US, UK, Canada, Sweden and Australia, where social procurement is being pioneered and increasingly promoted, there has been no research into social procurement in China and there is no evidence of social procurement policy debate, development or implementation. This is perhaps not surprising given the liberal Western governmental values of new public governance that have underpinned the development of social procurement policy in the West. In contrast, China is characterized by a centralized unitary state and socialist market economy where state-owned enterprises dominate [25]. In China, this political culture is directly at odds with the neo-liberal notion of a "small state" and "big society", which represent the political ideological underpinnings of social procurement in the Western politic [13,26]. In contrast, under the Chinese socialist market model, the Chinese Government plays a direct role in managing a growing private sector economy through its five-year plans, which currently focus on a range of social goals, such as promoting people's well-being through reducing unemployment, improving equality, community health, business liberalization and sustainability [11]. Zhao [27] and Wang et al.'s [28] research shows that public procurement policies relating to these social policy goals in China are still evolving and are regulated by a complex web of ministries across many hierarchical tiers of government at the central, provincial and city levels. This can lead to inconsistent and even conflicting policy objectives and a significant degree of uncertainty and confusion in Chinese industries over their interpretation, implementation, monitoring and policing.

While the formal concept of social procurement is not currently recognized in the Chinese government regulatory context, the current social priorities embedded in its five-year plans and China's fast-growing private sector make it highly relevant. Recent research also highlighted a growing social economy in China that could support the implementation of social procurement, although this is mainly limited to tackling environmental issues and disaster recovery [29]. However, Wang et al.'s [28] research into the closely related concept of "green public procurement" in China showed that inconsistent and conflicting policy goals create a significant degree of market uncertainty and confusion around implementation. Zhao [27] also found that while sustainable supply chain regulations that could potentially support social procurement exist in China, implementation is patchy and restricted to large construction firms. Furthermore, despite the issuing of a guide on the related concept of corporate social responsibility (CSR) for Chinese international contractors [30], Xie et al.'s [31] research indicates that it remains largely voluntary and a low priority for most Chinese construction firms. While more recent research by Zhang et al. [32] and Ma et al. [33] indicates that Chinese construction contractors are becoming increasingly aware of CSR, Li and Deng [34] reported that initiatives are limited in scope (mainly environmental and not social).

It is clear that although there has been no specific research into social procurement in the Chinese construction industry, there has been some research into closely related concepts, such as CSR, green procurement and sustainable procurement, which indicates that there is an existing, albeit immature, institutional context into which it could fit. In this context, the following section describes the research method employed to investigate the current disparity in research about how social procurement policy may be implemented in the Chinese construction industry by addressing the specific research questions posed above.

3. Method

Data were collected via an online survey of Chinese construction professionals who were purposively sampled based on Troje's [35] research into the types of professional roles involved in social procurement policy implementation. These roles included various construction professionals from project management, contract management, procurement, tender, human resources management and CSR backgrounds. In recruiting participants, we also sought to ensure the sample was representative of the broad range of experiences, roles, ages, and company sizes and types that characterize the Chinese construction industry. To this end, participants were identified and approached using the professional networks of the research team. Given the geographical challenges of collecting data from the whole Chinese construction industry, data collection was restricted to the Jiangsu Province of China. This

is the largest of all Chinese provinces with a total construction output value of about RMB 4164.2 billion, which is 13 percent of the total value of the Chinese construction industry [36].

Informed by our research questions and by an in-depth literature review as summarized above, the anonymous online survey replicated a survey designed by Loosemore et al. [37], which was designed to explore drivers and barriers to social procurement adoption in the Australian construction industry. This validated survey instrument was used because it allowed for direct comparison with similar research in a Western context, subject to adaptation to a Chinese construction industry context as discussed below, and permission to use the survey was granted by Loosemore et al. [37].

The first section of the survey required respondents to provide general demographic information about their role, experience, age and type of organization they worked for. This was adapted to suit the Chinese context by including state-owned, private and international companies. The second section of the survey utilized a mixture of five-point Likert-, interval- and categorical-scaled questions across a range of issues covering the following: the priorities that respondents attached to the employment of disadvantaged groups that would likely be targeted by Chinese social procurement policies (RQ1), the current representation of disadvantaged groups (RQ1), the extent to which companies already target the employment of these disadvantaged groups (RQ2), the factors that drive the employment of these disadvantaged groups (RQ2), the perceived benefits of hiring individuals from disadvantaged groups (RQ2), the perceived barriers to employment of these disadvantaged groups (RQ3) and the extent to which barriers currently exist for the employment of these disadvantaged groups (RQ3).

While the questionnaire replicated Loosemore et al.'s [37] survey, the disadvantaged groups that were the focus of the Chinese survey were different because of the different policy foci in Australia and China. For example, Loosemore et al. [37] focused on Indigenous Australians, people with a disability, ex-offenders, youth at risk, refugees and migrants, and women. This reflected the focus of social procurement policies in Australia. However, because no social procurement policies currently exist in China, the Chinese version of the survey focused on people with a disability, women, long-term unemployed and migrant workers (farmers working as construction workers). This focus was based on Chinese government policy priorities relating to specific disadvantaged groups [11,38].

Before being administered, the survey was pilot-tested on ten Chinese construction professionals using the same sampling strategy as the main study. This resulted in some further adjustments to the original questions used by Loosemore et al. [37]. For example, several driving factors and potential benefits that were considered to be particularly relevant to the Chinese construction industry were added, such as skill shortages due to an aging workforce.

Given the online nature of the main survey, it is not possible to know how many people were sent the link, but a total of 191 completed surveys were gathered, resulting in 164 valid responses. See Table 1 for the final sample structure.

Data were analyzed using a variety of descriptive and inferential non-parametric tests following pre-testing for kurtosis and skewness, which showed that the data was not normally distributed. A Kolmogorov–Smirnov [39] test was also conducted, confirming the non-normal distribution nature of our data. A Mann–Whitney U and Kruskal–Wallis H [39] test was also conducted to undertake within-group comparisons and determine if there were significant differences across various dimensions of the sample regarding the dependent variables as defined by the research questions [40].

Table 1. Sample structure.

Category	Variable	Percentage	Category	Variable	Percentage
Gender	Male	78.05%		1 or less	6.71%
	Female	21.95%		1–5	17.68%
Age	Less than 20 (inclusive)	0.61%		5–10	16.46%
	21–30	31.1%	Experience (years)	10–15	23.17%
	31–40	37.2%		15–20	15.85%
	41–50	22.56%		20–25	9.76%
	Over 50	8.54%		25–30 (inclusive)	6.1%
Position	Nonmanagement employee	52.44%		Over 30	4.27%
	Department/discipline head	34.15%		Building construction	70.12%
	Senior management	12.8%	Business focus	Infrastructure (road, bridge, etc.)	9.15%
	Others (government official)	0.61%		Fitting-out (decoration)	8.54%
Type of enterprise	State-owned company	38.42%		Mechanical and electrical works	6.1%
	Private company	60.37%		Others	6.1%
	International company	1.22%		0–10 million (inclusive)	10.98%
Company age (years)	0–5	5.49%		10–20 million (inclusive)	5.49%
	6–10	12.8%		20–30 million (inclusive)	4.27%
	11–15	6.1%	Annual turnover (RMB)	30–40 million (inclusive)	4.27%
	Over 15	75.61%		40–50 million (inclusive)	2.44%
Types of organizations	Client	15.24%		50–60 million (inclusive)	3.05%
	General contractor	34.76%		Over 60 million	69.51%
	Subcontractor/supplier	4.88%		0–100	19.51%
	Designer	8.54%		101–200	9.15%
	Supervision company (Jianli in Chinese)	23.17%	Company size (number of employees)	201–300	6.71%
	Consulting company (cost estimating or tendering agent)	9.15%		301–400	7.93%
	Others	4.27%		Over 400	56.71%

4. Results and Discussion

Research question one: what is the relevance of social procurement in a Chinese construction industry context?

Table 2 shows results relating to the "past" representation of disadvantaged groups targeted by the survey. The "current" representation of disadvantaged groups is shown in Table 3 and the "future" priorities given to the recruitment of these groups are shown in Table 4.

Table 2. Past representation of disadvantaged groups.

Group	Mean Value	Rank
Female employees	3.35	1
Migrant workers	2.73	2
Long-term unemployment person	2.63	3
Disabled people	1.97	4

Note: five-point Likert scale, 1—never; 2—rarely; 3—sometimes; 4—often; 5—always.

Table 3. Current representation of disadvantaged groups.

Group	Number of Employees						
	0	1–10	10–20	20–50	50–100	Over 100	Total
Long-term unemployment person	33.54%	36.59%	10.98%	12.2%	4.88%	1.83%	100%
Migrant workers	34.76%	17.68%	15.24%	11.59%	4.88%	15.85%	100%
Female employees	3.05%	14.02%	15.85%	28.05%	18.29%	20.73%	100%
Disabled person	45.73%	35.37%	10.98%	6.71%	0.61%	0.61%	100%
Average across all groups	29.27%	25.92%	13.26%	29.28%	7.17%	9.76%	---

Table 4. Future priorities given to the employment of disadvantaged groups.

Group	Mean Value	Rank
Female employees	2.29	1
Migrant workers	2.05	2
Long-term unemployment person	2.02	3
Disabled person	1.63	4
Average mean value	*2.00*	---

Note: five-point Likert scale, 1—not a priority; 2—low priority; 3—medium priority; 4—high priority; 5—essential.

The results in Tables 2–4 indicate that all disadvantaged workers were faced with poor past, current and future representation in the sampled organizations. The results point to a high degree of stability in recruitment strategies over time, with a large proportion of sampled organizations (29.27%) employing none of the targeted disadvantaged groups, with disabled people faring worst and 55.19% employing less than ten of any of the groups targeted by this research. Women were by far the most popular group, followed by migrant workers, long-term unemployed and then people with a disability.

The results of a within-group comparison between state-owned and private companies using a Mann–Whitney U test are shown in Table 5.

Table 5. Within-group comparison on the priortities the companies attached to hiring disadvantaged groups: state-owned and private companies.

Dimension	Variables	Mean Value		p
		State-Owned Companies	Private Companies	
The priorities the companies attached to hiring disadvantaged groups	Long-term unemployed	1.95	2.05	0.785
	Migrant workers	2.03	2.05	0.724
	Female employees	2.25	2.3	0.904
	Disabled person	1.62	1.63	0.467

Note: When the *p*-value is less than 0.05, significantly different perceptions existed between the respondents working for the two types of organizations (significant at 0.01 level, two-tailed). The same applies in all other tables below.

Table 5 indicates that there were no significantly different priorities between respondents from state-owned companies and private companies in our sample. The results of a within-group comparison between different types of organizations using a Kruskal–Wallis test are shown in Table 6.

Table 6. Within-group comparison: five types of organizations.

Dimension	Variables	Mean Value					*p*
		Client	General Contractor	Supplier/ Subcontractor	Designer	Supervision and Consulting Company	
The priorities the companies attached to hiring disadvantaged groups	Long-term unemployed	2.24	1.91	2.00	1.79	2.06	0.573
	Migrant workers	2.08	2.40	2.63	1.57	1.60	0.001
	Female employees	2.52	2.14	2.50	2.36	2.26	0.745
	Disabled person	1.92	1.60	1.50	1.43	1.62	0.495

Note: Because supervision companies and consulting companies are traditionally considered similar types of consulting engineers in China, they were combined into "Supervision and consulting company" to simplify the analysis. The same applies to all tables below.

Table 6 indicates that there was a significant difference between the types of organizations in relation to only one group (migrant workers). The results show that contractors and suppliers/subcontractors were significantly more positive toward migrant workers than professional firms (designers and consultants) and that clients appeared to be indifferent.

The results of a within-group comparison between different annual turnovers of the companies using a Mann–Whitney U test are shown in Table 7.

Table 7. Within-group comparison: turnover value.

Dimension	Variables	Mean Value		*p*
		Less than RMB 60 million	Over RMB 60 million	
The priorities the companies attached to hiring disadvantaged groups	Long-term unemployed	2.34	1.88	0.003
	Migrant workers	2.48	1.87	0.000
	Female employees	2.68	2.12	0.002
	Disabled person	1.80	1.56	0.252

Note: The different scales of the organizations were combined into two major types to simplify and improve the reliability of analysis. The same applies to all tables below.

Table 7 indicates that the size of an organization (in terms of turnover) significantly impacted the attitudes toward the employment of three cohort groups: long-term unemployed, migrant workers and female employees.

The results of a within-group comparison between company size in terms of the number of employees using a Mann–Whitney U test are shown in Table 8.

Table 8. Within-group comparison: total number of employees.

Dimension	Variables	Mean Value		*p*
		Less than 400	Over 400	
The priorities of the companies attached to hiring disadvantaged groups	Long-term unemployment person	2.10	1.96	0.348
	Migrant workers	2.27	1.89	0.054
	Female employees	2.49	2.14	0.055
	Disabled person	1.69	1.59	0.991

Table 8 indicates that company size in terms of the number of employees did not influence the current priorities given to the recruitment of these groups.

Research question two: what are the factors that may drive the adoption of social procurement in the Chinese construction industry?

The results in relation to RQ2 are shown in Table 9.

Table 9. Driving factors behind the employment of disadvantaged groups.

Driving Factors	Mean Value	Rank
Government policy	3.96	1
Corporate social responsibility	3.88	2
The construction industry has tremendous working opportunities	3.68	3
The construction industry has an aging workforce	3.64	4
Contractual requirements imposed by clients	3.63	5
Company reputation	3.54	6
Skills shortages	3.52	7
Workforce diversity	3.52	8

Note: five-point Likert scale, 1—strongly disagree; 2—disagree; 3—neither agree nor disagree; 4—agree; 5—strongly agree.

The results in Table 9 indicate that there are no factors that dominate as the main driver for the employment of disadvantaged groups in the Chinese construction industry. With most responses in the central band of "neither agree or disagree", the results indicate significant uncertainty regarding the reasons for employing these groups. Nevertheless, it is notable that government policy was the highest-ranked driver.

The results of a within-group comparison between state-owned and private companies using a Mann–Whitney U test are shown in Table 10. All the private companies in our sample were Chinese because we were interested in the perceived barriers within the Chinese construction industry and did not want to pollute our results with the perceptions of overseas firms who may have worked in environments where social procurement was normalized.

Table 10. Within-group comparison on the driving factors of employing disadvantaged groups: state-owned and private companies.

Dimension	Variables	Mean Value		p
		State-Owned Companies	Private Companies	
The driving factors of employing disadvantaged groups	Government policy	4.11	3.86	0.141
	Corporate social responsibility	3.81	3.92	0.134
	The construction industry has tremendous working opportunities	3.71	3.68	0.971
	The construction industry has an aging workforce	3.65	3.66	0.376
	Contractual requirements imposed by clients	3.62	3.65	0.428
	Company reputation	3.57	3.52	0.607
	Skills shortages	3.62	3.48	0.684
	Workforce diversity	3.57	3.51	0.978

As in research question 1 (priorities given to recruitment), Table 10 shows there were no significant differences in drivers between state-owned companies and private companies. While the different rankings for the drivers do indicate that state-owned companies were more likely to respond to government policy than private firms, the difference with private firms was not statistically significant.

The results relating to the benefits of hiring individuals from disadvantaged groups are shown in Table 11.

Table 11. The benefits of hiring individuals from disadvantaged groups.

Benefit	Long-Term Unemployment Person		Migrant Workers		Female Employees		Disabled Person		Total	
	Percentage	Rank	Percentage	Rank	Percentage	Rank	Percentage	Rank	Percentage	Rank
Solving the problem of employee shortage	43.29%	1	49.39%	1	68.29%	6	29.27%	4	190.24%	1
Being a good corporate citizen	35.37%	4	41.46%	4	71.95%	3	39.02%	3	187.80%	2
Better company reputation	31.71%	6	38.41%	6	60.37%	11	45.12%	2	175.61%	3
Increased business	39.02%	2	36.59%	8	67.68%	8	25%	7	168.29%	4
Greater staff pride in our company	31.10%	7	35.98%	11	52.44%	12	46.95%	1	166.47%	5
Greater innovation/creativity	29.88%	9	39.02%	5	69.51%	5	21.95%	9	160.36%	6
Access to new clients	34.15%	5	32.32%	13	68.29%	7	25%	6	159.76%	7
Greater staff satisfaction	28.05%	11	36.59%	10	70.73%	4	23.78%	8	159.15%	8
Happier workplace	26.22%	12	38.41%	7	72.56%	2	21.34%	10	158.53%	9
More workforce diversity	19.51%	13	35.37%	12	76.22%	1	25%	5	156.10%	10
Increased productivity	31.10%	8	43.90%	3	63.41%	9	12.20%	12	150.61%	11
Attracting millennials who want to work in diverse organizations	29.88%	10	36.59%	9	62.20%	10	14.02%	11	142.69%	12
Addressing skills shortages	38.41%	3	45.73%	2	44.51%	13	8.54%	13	137.19%	13
Average	32.13%	---	39.21%	---	65.24%	---	25.94%	---	162.52%	---

The results in Table 11 show that of all the disadvantaged groups explored, the recruitment of female employees was perceived to produce by far the greatest benefits (followed by migrant workers, long-term unemployed and then disabled workers).

Research question three: what would be the potential barriers to implementing social procurement policies in the Chinese construction industry?

The results relating to the perceived barriers that exist for the employment of disadvantaged groups are shown in Table 12.

Table 12. Perceived extent of barriers to the employment of disadvantaged groups.

Group	Mean Value	Rank
Disabled person	3.76	1
Long-term unemployment person	3.07	2
Migrant workers	2.87	3
Female employees	2.76	4

Note: five-point Likert scale, 1—never; 2—rarely; 3—sometimes; 4—often; 5—always.

The results reinforce the findings above and further confirm that people with a disability and the long-term unemployed were the two groups who faced the highest perceived barriers to employment, followed by migrant workers and female workers. The results of a within-group comparison between state-owned and private companies indicate no significantly different perceptions between the respondents from state-owned companies and private companies in the construction industry. Similarly, the results of a within-group comparison between different types of organizations indicate no significant differences in perceived barriers between different types of organizations in the sample. The results of a within-group comparison between company size in annual turnover and the number of employees and perceived barriers indicate that while turnover did affect recruitment priorities and drivers, there were no significant differences in perceived barriers to employment. This suggests that it was not perceived barriers that drove employment strategies for these groups but other drivers, such as government policy. However, our results show that the number of employees had no significant impact on perceived barriers. Therefore, our results across all three research questions indicate no relationship at all between the number of employees in a company and any of the variables we tested.

The results of a frequency and ranking analysis and the specific perceived barriers to employment for each group are shown in Table 13 in overall rank order across all groups. As noted above, there is a growing, albeit nascent, body of research into the employment of various disadvantaged groups in construction, such as women, people with a disability, refugees and migrants, and Indigenous workers. The results in Table 13 add to this work by ranking and comparing the various perceived barriers and by exposing the large variation in perceived barriers between different disadvantaged groups. For example, Table 13 shows that the top three barriers for women were perceived to be workplace conflict, lack of government support and inability to work long hours. In contrast with women, the top three perceived barriers for people with a disability were complex health needs, low productivity and inability to work long hours. For the long-term unemployed, the top three perceived barriers were lack of commitment, untrustworthy and reputational risk, while for migrants, they were lack of formal education, lack of qualifications, and poor literacy and numeracy.

Table 13. The percentage and ranking analysis results of the barriers to employment of disadvantaged groups.

Barriers	Long-Term Unemployment Person		Migrant Workers		Female Employees		Disabled Person		Total	
	Percentage	Rank	Percentage	Rank	Percentage	Rank	Percentage	Rank	Percentage	Rank
Lack of qualifications	39.02%	11	78.05%	2	18.29%	8	34.15%	11	169.51%	1
Low work productivity	40.85%	9	39.02%	12	21.95%	5	60.98%	2	162.80%	2
Lack of technical skills	42.07%	7	63.41%	6	21.34%	6	34.15%	10	160.97%	3
Lack of government support/incentive	39.02%	12	37.20%	14	28.05%	2	50.61%	5	154.88%	4
Cost of training	40.24%	10	59.15%	8	16.46%	11	39.02%	6	154.87%	5
Unreliability	50.61%	4	46.34%	9	17.07%	9	37.20%	7	151.22%	6
Cost of supervision	41.46%	8	59.15%	7	15.24%	13	35.37%	8	151.22%	7
Poor literacy and numeracy	31.10%	16	77.44%	3	13.41%	16	26.22%	14	148.17%	8
Poor work quality	48.78%	5	43.90%	10	17.07%	10	32.32%	12	142.07%	9
Inability to fit in	43.29%	6	43.29%	11	18.90%	7	34.76%	9	140.24%	10
Poor communication skills	34.15%	14	66.46%	5	14.63%	14	24.39%	15	139.63%	11
Cost of modifying the workplace	32.32%	15	35.37%	16	16.46%	12	52.44%	4	136.59%	12
Low levels of formal education	21.34%	19	82.32%	1	9.76%	19	19.51%	16	132.93%	13
Inability to work long hours	27.44%	17	21.34%	19	26.83%	3	56.71%	3	132.32%	14
Cause of conflict in the workplace	36.59%	13	38.41%	13	37.20%	1	17.68%	18	129.88%	15
Complex health needs	12.20%	20	16.46%	20	23.17%	4	78.05%	1	129.88%	16
Cultural differences	22.56%	18	73.17%	4	12.80%	17	18.29%	17	126.82%	17
Risk to company reputation	53.05%	3	30.49%	18	11.59%	18	28.05%	13	123.18%	18
Lack of commitment to work	67.07%	1	36.59%	15	14.02%	15	4.88%	20	122.56%	19
Untrustworthy	62.80%	2	32.93%	17	9.15%	20	13.41%	19	118.29%	20
Average	39.30%	---	49.02%	---	18.17%	---	34.91%	---	141.40%	---

5. Discussion of Results

Research question one: what is the relevance of social procurement in a Chinese construction industry context?

The high degree of consensus and consistency in terms of disadvantaged cohorts employed (past, present and future) may be explained by DiMaggio and Powell's [41] formative work on organizational isomorphism. This shows how organizations tend to resemble each other when there is a lack of coercive (regulatory), mimetic (competitive) and normative (expectations) pressures to innovate in the area of social responsibility, as our literature review indicated [31,34]. This contrasts with the findings of recent social procurement research in Australia [21], which also reported a degree of isomorphism in the construction industry's response to these policies. However, Loosemore et al. (2021a) noted that the use of social procurement criteria in tenders in Australia is encouraging firms to lift their social performance to seek competitive advantage, although monitoring social outcomes is also a challenge for many Australian clients. In contrast, qualitative comments in our research indicated that the use of social procurement requirements in tenders in China is rare and that some Chinese clients declined to include social criteria in their tendering requirements because unscrupulous contractors may exploit them. For instance, some contractors were reported to provide fake evidence of employing disabled workers on one public construction project to increase their tender score.

The popularity of women as a potential target recruitment group for social procurement in our findings also reflects trends in other countries that seek to address the construction sector's gender imbalance [42]. However, these results are also somewhat surprising given seemingly contradictory research by the International Monetary Fund [43], which showed that labor market barriers for women have increased over time in China. Nevertheless, overall, the results relating to the representation of disadvantaged groups in the Chinese construction industry are disappointing. While the order of priority in the overlapping cohorts (women, migrants and disabled) was broadly the same as Loosemore et al. [37], our results indicate a much narrower view in China (compared with Australia) of what an ideal Chinese construction employee should look like and it is likely that this reflects the differences in regulatory imperatives around diversity. While it is not possible to conclude that this points to a relative lack of engagement with social responsibility issues compared with other countries, as reported by Zhang et al. [32] and Li and Deng [34], in general, the results do appear to support research by Jiang and Wong [44] that showed that community-based initiatives, such as employing disadvantaged workers, are currently a low priority in the Chinese construction industry. It also supports Wang et al.'s [45] conclusions that the market for social value in the Chinese construction industry is immature and that there is currently little regulatory imperative or competitive advantage to be gained from investing in such initiatives. However, our findings do not support Wang et al. [45]'s conclusion that private construction companies were more likely to invest in such issues (compared with the state-owned enterprises that dominate the construction market) since our sample was dominated by these types of firms (60.37%). Given the intense competition in China's socialist-market-based economy, our results suggest that there is significant untapped potential to unleash the creative potential of the Chinese construction industry to help the government meet its social goals in its 14th five-year plan.

The finding that there are no significantly different priorities between respondents from state-owned companies and private companies does not support Wang et al.'s [45] assertion that an increase in private-sector capacity will improve China's engagement with social initiatives. The results relating to contractors and suppliers/subcontractors being significantly more positive toward migrant workers than professional firms (designers and consultants) are probably because contractors and suppliers/subcontractors are the major employers of migrant workers in the Chinese construction industry because of their low level of education [46]. The results also support Xie et al. [47], who recently found that the best performance of social responsibility behavior was delivered by contractors, followed by clients and consultants in China. However, our results place clients last, which

supports Wang et al. [45], who argued that there is little market support for social value in the Chinese construction industry and Jiang and Wong's [44] findings that the concept of corporate social responsibility (CSR) in China is largely voluntary and not generally required by clients.

The results that the size of an organization (in terms of turnover) significantly impacts attitudes toward the employment of three cohort groups, namely, long-term unemployed, migrant workers and female employees, is also interesting and does not correspond to Loosemore et al. [37], who found that employment priorities are not influenced by company turnover. However, Wang et al. [45] highlighted the perceived costs associated with complying with CSR in China, which indicates that small companies may be more reluctant to employ these groups than large firms. It is interesting that attitudes toward employing people with a disability are not significantly influenced by company turnover in China, given the perceptions of the higher cost that accompany this group in the construction literature because of accommodations that need to be made in the workplace [48,49]. This may be related to the legislation in place to support the employment of these groups in China [50], highlighting the important role that parallel supporting legislation (alongside social procurement legislation) can play in implementing social procurement.

Finally, the results that company size in terms of the number of employees does not influence current priorities given the recruitment of these groups do not correspond to Loosemore et al. [37], who found that company size (in terms of the number of employees) does affect employment priorities, especially for Indigenous people and women. This is probably because in Australia, reporting requirements for groups such as women are related to company size and no such requirements currently exist in China. These results once again point to the importance of parallel complementary legislation in supporting the implementation of social procurement.

Research question two: what are the factors that may drive the adoption of social procurement in the Chinese construction industry?

The results that there were no factors that dominated as the main driver for the employment of disadvantaged groups in the Chinese construction industry indicate the potential power of social procurement regulation to drive change in China. This supports Barraket et al.'s [13] and Loosemore et al.'s [21] Australian research findings that coercive isomorphism is the main driver of social procurement. It is interesting that even with severe skills shortages facing the Chinese construction industry [51], addressing skills shortages ranks lowly in our results. Along with the low ranking of workforce diversity, these results point to a low appreciation of the potential strategic value of recruiting from these non-traditional groups. This reflects the findings of research in other countries that highlight the lack of maturity in workforce diversification strategies and management in the construction industry compared with other industries [52]. However, the high ranking of other factors, such as CSR and company reputation, supports Xiong et al.'s [53] findings that construction contractors in China are becoming increasingly aware of the importance of CSR. This points to an increasing awareness of wider "normative" pressures to employ these groups and be a responsible corporate citizen, which is a crucial foundation for the adoption of social procurement, as noted by Murphy and Eadie [7].

The results that there are no significant differences in drivers between state-owned companies and private companies do not support Wang et al.'s [45] proposition that private Chinese firms are more likely to be driven to engage with CSR-type activities.

The results that of all the disadvantaged groups explored, the recruitment of female employees is perceived to produce by far the greatest benefits (followed by migrant workers, long-term unemployed and then disabled workers) reinforce findings above about the relative priorities given to different disadvantaged groups. It also reflects priorities elsewhere in the world around the focus on recruiting more women into the industry [54]. The low ranking of people with a disability also reflects research in other contexts that reveals the negative stigmatization of people with a disability in the construction industry [55]. It is also interesting that the perceived benefits for each group varied significantly.

For example, productivity benefits were associated strongly with employing more migrants, which contrasts with the results of Loosemore et al. [37] in Australia. However, in alignment with Loosemore et al.'s [37] results about disabled employees, productivity was lowly ranked, which supports Wang and Xing's [56] findings that Chinese employers perceive these employees to require costly support structures and workplace accommodations and tend to be less productive than able-bodied employees. Similarly, females were seen to enhance workforce diversity, while long-term unemployed were not. These nuanced differences point to strongly and widely differing stereotype perceptions of the value of various disadvantaged groups, indicating that generic social procurement policies are not likely to be met with equal enthusiasm across all cohorts. This suggests that an Australian type-targeted approach with measurable targets for specific disadvantaged groups is likely to be more effective in China than a more flexible UK-style approach that allows contractors to decide their own recruitment priorities within broad social policy goals. Alternatively, some groups may need additional incentive structures to prevent policies from overly favoring more positively perceived groups.

Research question three: what would be the potential barriers to implementing social procurement policies in the Chinese construction industry?

The results relating to the perceived barriers that exist for the employment of disadvantaged groups highlight the cultural relativity of social procurement challenges and are quite different from the relative perceived barriers reported by Loosemore et al. [37] in Australia, who ranked disengaged youth as the highest risk cohort, followed by migrants and refugees, people with a disability, ex-offenders, women and Indigenous workers.

The results that indicate no significant differences in perceived barriers between different types of organizations in the sample were rather surprising given the relative differences in resources that each organization would have at its disposal to manage each group.

Our results across all three research questions indicate no relationship at all between the number of employees in a company and any of the variables we tested. This may also seem surprising given the presumed ability of larger organizations to absorb what are perceived to be unproductive employees. However, these results support Loosemore et al. [37], who also found no significant differences between company size in both turnover and number of employees and perceived barriers to employment for disadvantaged groups.

The results which show a large variation in perceived barriers between different disadvantaged groups are in strong alignment with Loosemore et al.'s [37] results, which show the top three barriers to be lack of government support, inability to work long hours and inability to fit in. The perceptions of barriers relating to each cohort group we explored are also common in other countries, such as the UK and Australia, although they are often not supported by research evidence. For example, the Australian Human Rights Commission [57] showed that employers often assume that the costs of employing people with a disability are greater than they are in practice. While we could find equivalent cost information in China, addressing these perceived barriers and any misconceptions should be a focus of any future Chinese social procurement policies. Furthermore, supportive parallel policies may also be required to allay any intransigent concerns and provide financial support if extra costs do exist. For example, many international governments already provide financial incentives, wage and training subsidies to help companies employ and up-skill certain disadvantaged groups [58].

6. Conclusions

This research contributes new insights to the emerging social procurement debate by addressing a bias in current social procurement research and policy toward Western countries. By exploring the implementation of social procurement in a Chinese construction industry context, the results in relation to research question one show that although the concept of social procurement may be inspired by Western concepts of new public governance that do not align with the Chinese centralized unitary model of government, and while the formal language of social procurement may not currently exist in China,

there is an institutional framework into which it could fit and it is highly relevant to the social goals embedded in the Chinese government's five-year plans. In relation to research question two, our findings also show that Chinese construction firms are already familiar with related concepts that encourage more responsible decision-making, such as CSR and green procurement. However, the current institutional support provided to firms to invest in this area in China is limited in comparison with other countries, such as the US, the UK, Canada, Sweden and Australia. It is therefore not surprising that the results relating to the employment of the disadvantaged groups we explored were disappointing compared with research results in other countries where social procurement policies already exist. In relation to research question three, our results highlight a lack of regulatory imperative and competitive value attached to the recruitment of disadvantaged people in the Chinese construction market. This suggests that social procurement policies could have a significant impact on the willingness of organizations in the Chinese construction industry to employ these disadvantaged groups. Importantly, in contrast with previous research, our results indicate that the potential social impact of these policies, if introduced, would not be influenced by the mix of private sector and state-owned enterprises that make up the Chinese construction industry. Although the size of the private sector in China has grown fast, the Chinese construction sector is still dominated by state-owned enterprises, meaning that social procurement policies can have a significant immediate impact. This finding is further reinforced by our finding that the bulk of this impact will come from larger contractors and subcontractors, although consultants and suppliers should not be left out of these policy foci, as they have been in other countries. However, from a practical policy development perspective, our findings also contain a warning that because these types of organizations are significantly more positive toward certain disadvantaged groups, social procurement policies should be targeted in nature and aimed at supporting a broad range of groups. Therefore, the results strongly indicate that an Australian type-targeted approach with measurable targets for specific disadvantaged groups is likely to be more effective in China than a more flexible UK-style approach that allows contractors to decide their own recruitment priorities within broad social policy goals.

Another practical implication for Chinese policymakers is that the results indicate that these policies also need to be coupled with necessary institutional-building work, both formal and informal, in the form of clear information, guidelines, adapted tender processes, incentives and support structures to encourage policy implementation on the ground, including education to dispel perceived barriers and stereotypes, to promote the benefits of social procurement and how to implement these policies on the ground. In other countries, research shows that social procurement implementation was found to be problematic due to the significant institutional instability it causes to existing relationships, systems and processes. China is in the privileged position to be able to learn from these experiences and maximize the impact of any policies it creates by designing its policies in a more considered and informed manner.

While the above findings extend current social procurement research into a Chinese construction context, we acknowledge that the findings are limited to construction industry stakeholders in one Chinese province. While this is a large and representative province, further data are needed from other Chinese provinces to verify the results. We also acknowledge that while survey research enables statistical analysis and the identification of patterns across our dataset, our qualitative data was limited. We, therefore, recommend that future research would not only benefit from more widespread survey data but also from more qualitative studies to enable a deeper understanding of the trends discovered. In particular, following the traditions of social procurement research in other countries, interviews could provide important in-depth insights into the institutional environment into which social procurement would be imbedded if these policies were introduced into the Chinese construction industry. This is critically important to enable effective policy implementation to achieve maximum social impact.

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