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A Qualitative Investigation of Barriers and Facilitators Involved in the Implementation of Endowment Insurance in China's Construction Industry

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Abstract: Given their occupation's inherent income instability, the promotion of endowment insurance among construction workers is essential. This research reports the barriers and facilitators involved in promoting endowment insurance to construction workers, by contextualizing it in China. It adopts a qualitative research approach combining semi-structured interviews and thematic analysis. It is discovered that the barriers include (1) construction workers' low willingness to participate in insurance, caused by the low level of awareness and understanding of the benefits of endowment insurance, low income, unstable employment situation, and lack of trust in the insurance system, (2) companies' irresponsibility, caused by cost pressure, lack of policy support, uncertain legal responsibilities, and (3) governments' incomplete management, caused by insufficient funding, complex administrative procedures, weak regulation, and regional differences. A series of facilitating measures are also proposed, including (1) increasing awareness and understanding of the benefits of endowment insurance, (2) adjusting the design of the endowment insurance scheme, and (3) strengthening legislation and enforcement. This study presents an analysis of the promotion practices of endowment insurance in China's construction industry, which can provide policymakers with valuable references for optimizing the endowment insurance system. The findings can have significant implications for China and other developing countries that may face similar challenges in promoting social security programs in aging societies.

Keywords: construction workers; workforce aging; endowment insurance; barriers; facilitators; qualitative research



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1. Introduction

The global population is indeed aging. The percentage of the global population aged 60 years and older is anticipated to almost double by the year 2050, increasing from 12% to 22% [1]. This trend can be attributed to various factors, including developments in medical care and improvements in living conditions, leading to prolonged life expectancies [2]. An aging population can affect healthcare costs, social security, and other benefits programs [3], including endowment insurance [4].

Endowment insurance is a vital social security program that has become increasingly important in addressing the challenges associated with population aging [5]. This insurance program is particularly significant in countries where conventional pension systems cannot cope with demographic changes. In recent years, China has faced formidable challenges in providing for its aging population's retirement and long-term care needs. In response to these challenges, the Chinese government has established the mandatory endowment insurance system as a pivotal tool to address these issues and ensure the economic security of its citizens in their later years. The mandatory endowment insurance system in China

offers retirement benefits to employees based on their length of service and salary history, with contributions funded by employers, employees, and government subsidies [6]. The mandatory endowment insurance system in China is deemed critical in providing retirees with a dependable source of income, which ultimately alleviates the financial burden on families and communities. Moreover, the provision of endowment insurance fosters a sense of security and stability among workers, promoting a positive and productive employer–employee relationship, leading to enhanced working conditions and elevated levels of job satisfaction [7].

China has made significant efforts to develop and strengthen the endowment insurance system. One important initiative has been to expand the system to cover a larger portion of the population, including rural residents and self-employed individuals [8]. This has resulted in a broader population having access to retirement benefits through the endowment insurance system. According to the National Bureau of Statistics, the end of 2020 saw 962 million people covered by the endowment insurance system in China, an increase of 6.22 million from the previous year. The Ministry of Human Resources and Social Security reported that the coverage rate for urban employees was 91.6% at the end of 2020.

Despite the advancements in China's endowment insurance system, it is a common observation that many construction companies do not offer endowment insurance as an employee benefit [9]. There are multiple reasons underlying the practice of limited endowment insurance provision in the construction industry [10]. Firstly, due to the high labor turnover prevalent in the industry, companies may be disinclined to offer long-term benefits such as endowment insurance. Moreover, the risk of injuries and accidents in construction work may lead to higher insurance premiums, further deterring companies from providing endowment insurance [11,12]. Additionally, endowment insurance is not always a mandatory benefit in many jurisdictions, thereby not imposing legal obligations on companies to offer it to their workers. Lastly, providing endowment insurance can incur significant costs, especially for smaller construction companies with limited resources. Consequently, many construction workers may lack coverage under an endowment insurance policy, which can have implications for their financial wellbeing and that of their dependents [13].

The promotion of endowment insurance is important to China's construction industry [7]. To begin with, the construction sector in China is frequently linked to comparatively meager remuneration and unfavorable working circumstances, which can exacerbate social and economic disparities [14]. Implementing endowment insurance can furnish workers with a safety net, safeguarding them against financial adversity in their twilight years and lessening their dependence on informal support systems such as family members [15]. By improving the social welfare system in the construction industry, endowment insurance can help to reduce economic and social inequality and promote a more just society [16,17]. Furthermore, promoting endowment insurance in the construction industry can foster a more positive and collaborative relationship between workers and employers. Offering workers a feeling of financial stability through endowment insurance may enable employers to enhance working conditions and job satisfaction, resulting in increased retention rates and decreased turnover [18]. As a result, this can foster a more consistent and effective workforce, benefiting both employees and employers. Additionally, promoting endowment insurance in the construction industry can be viewed as a way to address social and economic inequality [19] by providing a safety net for workers in a historically marginalized industry. The provision of endowment insurance to workers may yield favorable outcomes for both employees and employers. The sense of security and stability conferred upon workers by this insurance may contribute to a more productive and positive relationship between workers and their employers, ultimately leading to better working conditions and increased job satisfaction.

There are many barriers preventing endowment insurance being widely promoted in China's construction industry. While previous research has explored barriers to endowment

insurance adoption in China, very little research has been conducted specifically among construction workers. In addition, given the fragmented manner in which these barriers are documented in the literature [9,20,21], it is imperative to acquire a comprehensive understanding of both the barriers themselves and the facilitators necessary to surmount them. The objective of this study is to investigate the barriers and facilitators of promoting endowment insurance in China's construction industry. The research is concentrated on China as a case study and employs a combination of semi-structured interviews and a thematic analysis methodology. This study probes into the real-life endowment insurance promotion practices in China's construction industry, providing valuable decision-making references that policymakers may take into consideration when further optimizing the endowment insurance system for both China and other developing countries. The paper is structured in five sections. Following this introductory section, Section 2 describes the qualitative research approach encompassing semi-structured interviews and thematic analysis. Section 3 summarizes the barriers identified and the targeted facilitators. Section 4 further discusses the results, and conclusions are drawn in Section 5.

2. Materials and Methods

The utilization of qualitative research has been shown to enable an exploration of the development of individuals' behaviors, attitudes, and practices [22,23]. Considering the need for a more comprehensive understanding of the barriers and facilitators of promoting endowment insurance in China's construction industry, which may not be sufficiently captured through quantitative analysis, a qualitative approach is deemed appropriate. Therefore, this study adopts a qualitative research method by combining semi-structured interviews with thematic analysis, which has been validated in previous studies across a variety of fields including construction waste management [24], human resource management [25], etc.

This study focuses on China to examine the barriers and facilitators of promoting endowment insurance within the construction industry. The decision to collect data from China is based on three primary reasons. Firstly, the construction industry represents a significant segment of China's national economy and has a prominent standing in the global construction market [26]. The value added by the construction sector has consistently remained above 6.5% of China's gross domestic product since 2009. In 2021, the aggregate output value of China's construction industry attained CNY 29.3 trillion, reflecting a year-on-year increase of 11.04%, thereby occupying the topmost rank in the world. Furthermore, the total volume of China's import and export of construction services trade in 2021 amounted to USD 40.27 billion, which also occupied the leading position globally. The well-established industry scale and substantial international influence of China's construction industry enable the derivation of general conclusions that may be applicable to other countries. Secondly, severe population aging in China has increased the importance of enhancing endowment insurance as a social welfare policy [27,28]. Endowment insurance is a crucial source of income for retirees. Enhancing endowment insurance can help ensure the financial well-being of the elderly population and alleviate the burden on their families. In addition, despite various measures implemented by the Chinese government to promote endowment insurance in the construction industry, these efforts have not effectively addressed the issue [29]. Therefore, there is a need to analyze and summarize the experiences and practices in China to identify the key barriers and the facilitators that could further promote endowment insurance.

2.1. Semi-Structured Interviews

Semi-structured interviews are a qualitative research method that involves asking respondents predetermined, yet open-ended questions [30,31]. This method promotes the free expression of opinions from the respondents, enabling researchers to efficiently gather a variety of valuable information [25]. The use of semi-structured interviews is particularly valuable in soliciting the opinions of a broad range of stakeholders concerning

the barriers and the facilitators of promoting endowment insurance in China's construction industry. The selection of interviewees for this study adhered to two primary criteria. Firstly, they were required to possess an in-depth understanding of the promotion of endowment insurance within China's construction industry, and consequently, provide valuable insights into the topic. This criterion necessitates that the selected interviewees have relevant work experience in this field, with a minimum of 5 years of experience to ensure their expertise. Secondly, the chosen interviewees must possess diverse roles that cover various phases of endowment insurance promotion to offer a more comprehensive understanding. The promotion of endowment insurance within China's construction industry involves various stakeholders, including those from the government, industry, and academia. As a result, this study aims to include all relevant stakeholders to obtain a comprehensive understanding of the barriers and the facilitators for promoting endowment insurance in the industry.

Table 1 lists the details of the interviewees.

Table 1. Profiles of interviewees.

No.	Roles	Work Experience
1	An associate professor in construction management.	6 years
2	A lawyer specializing in labor disputes.	12 years
3	A section chief of the Labor and Social Security Bureau.	11 years
4	A professor in law.	14 years
5	A construction manager (mainly building engineering projects).	8 years
6	A construction manager (mainly railway engineering projects).	5 years
7	A construction manager (mainly civil engineering projects).	6 years
8	An associate professor in law.	7 years
9	An officer of the Human Resource Office of a construction company.	5 years
10	An on-site construction engineer.	9 years
11	A consultant in an insurance company.	7 years

Prior to conducting the interviews, ethical considerations pertaining to participation in the research were carefully assessed. These considerations included obtaining the full consent of participants for answering interview questions, ensuring the confidentiality and anonymity of research data, and obtaining permission to audio-record the interviews. The semi-structured interviews were conducted through video calls in the Chinese language. Participants were asked to respond to four questions pertaining to the promotion of endowment insurance, namely:

- (1) Do you believe that endowment insurance is important for workers in the construction industry?
- (2) What are the typical practices of construction companies in China regarding the provision of endowment insurance to their workers?
- (3) In your opinion, what are the main barriers to implementing endowment insurance for workers in China's construction industry?
- (4) Can you suggest any potential facilitators to promote endowment insurance for workers in China's construction industry?

Each interview had a duration of approximately 40 min and was recorded using an audio recorder. The recorded interviews were fully transcribed, and the transcripts were then sent to each interviewee. This approach was adopted to confirm the accuracy and authenticity of the findings, thereby ensuring the content validity of the study.

2.2. Thematic Analysis

Thematic analysis is a valuable method to analyze qualitative data and to identify patterns, themes, and trends in the data. It allows researchers to extract meaningful insights and develop a deep understanding of the data. By using this method, the authors of the study can identify the key barriers and facilitators of promoting endowment insurance

in China's construction industry, based on the interviewees' responses. The flexibility of this method enables the authors to capture a rich and detailed account of the data, while also ensuring that the themes identified are grounded in the data. This study followed the thematic analysis process (shown in Figure 1) adopted by Zainal and Barlas [32]. Following an initial examination and iterative review of all 11 interview transcripts, the authors employed an open-coding approach to identify preliminary codes, which comprised the most elementary and integral segments of the data under scrutiny. The codes were subsequently categorized into superordinate themes connected to the research area. The codes and themes were subsequently refined, discarded, merged, and split through iterative examination. The themes were then assigned descriptive labels, ensuring the inclusion of all related codes. The results presented in this study were derived from statements made by no less than three participants, and were further corroborated through a review of the relevant literature. In so doing, the present findings were considered highly reliable [33].

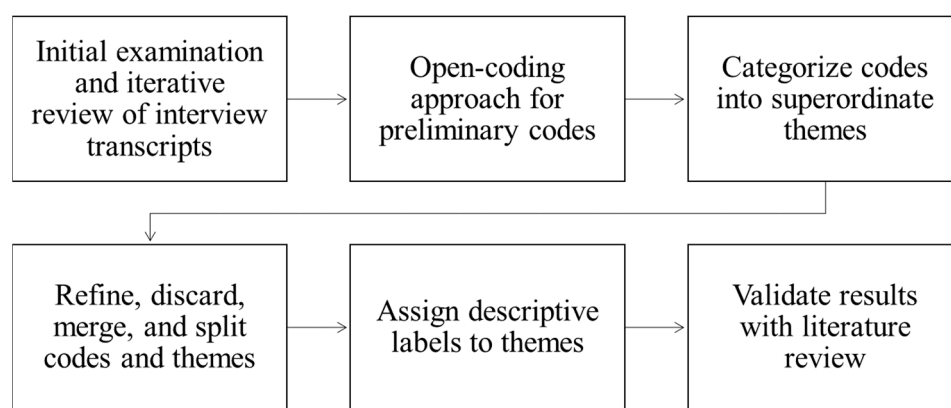


Figure 1. Thematic Analysis Process.

3. Results

Following the proposed thematic analysis process, barriers to and facilitators for promoting endowment insurance to construction workers were identified, coded, and synthesized. For instance, a pertinent statement from the interview data was first extracted: “Construction workers in China are frequently individuals from rural areas who may have received only middle school education, resulting in limited awareness and understanding of social insurance policies, including endowment insurance”. Subsequently, a code encapsulating the key concept within the statement was identified: “Low level of awareness and understanding of endowment insurance benefits”. This code was then connected to a broader theme (“workers’ low willingness to participate in insurance”) that emerged from the analysis of multiple interviews. This process was consistently applied to all interview transcripts, enabling the systematic identification and organization of data-driven codes and themes.

Upon conducting an in-depth thematic analysis of 11 interview transcripts, this study discerned three barriers hindering the promotion of endowment insurance in China's construction industry. To address these challenges, the study proposes three targeted facilitators.

3.1. Barriers Preventing Endowment Insurance Promotion

3.1.1. B1: Workers’ Low Willingness to Participate in Insurance

The low willingness of construction workers to participate in endowment insurance is a significant challenge that needs to be addressed to promote the policy in the industry. There may be several reasons for this reluctance, including the low level of awareness and understanding of the benefits of endowment insurance, the low income and unstable employment situation of construction workers, and the lack of trust in the insurance system. The coding process can be found in Table 2. It should be noted that only representative

discourses are listed, because of the similarity of interview transcripts from different participants.

Table 2. Thematic analysis process of B1.

Topic	Codes	Example Data
Workers' low willingness to participate in insurance	Low level of awareness and understanding of the benefits of endowment insurance	<p>"Construction workers in China are frequently individuals from rural areas who may have received only middle school education, resulting in limited awareness and understanding of social insurance policies, including endowment insurance." (From interviewee 5)</p> <p>"The nature of the construction sector, which is characterized by arduous work and prolonged work hours, can lead to workers having insufficient time and energy to familiarize themselves with the intricacies of the insurance system." (From interviewee 6)</p>
	Low income	<p>"The highly competitive and fragmented nature of China's construction industry is often associated with low wages, substandard working conditions, and insufficient job security. Consequently, workers may prioritize meeting their immediate financial needs, such as paying for food and rent, over saving for their long-term retirement needs." (From interviewee 9)</p> <p>"The participation in the endowment insurance scheme entails certain fees, which can impose a financial burden on workers with low incomes. In the construction industry, where a significant number of workers are temporary and receive unstable salaries, budgeting for these fees can pose a significant challenge." (From interviewee 7)</p>
	Unstable employment situation	<p>"Workers in the construction industry are frequently employed under non-standard employment contracts, which may not include social insurance benefits. Consequently, such workers may perceive the government and insurance system as untrustworthy, due to their limited access to social insurance. This can create the perception that the system does not meet their needs or is not accessible to them, which can further discourage their participation in endowment insurance." (From interviewee 10)</p> <p>"Construction workers in China are highly mobile and may need to move frequently to find work. This mobility can pose a challenge to their participation in endowment insurance. The process of re-registering for insurance in a new region when workers relocate can be complex and time-consuming, which may pose difficulties for continuous participation in the insurance program and receipt of entitled benefits. Furthermore, eligibility limitations may render some workers ineligible to partake in the insurance program in their original region if they work in a different region." (From interviewee 11)</p>
	Lack of trust in the insurance system	<p>"A significant hindrance to workers' participation in the endowment insurance system is the lack of trust in its ability to provide promised benefits, leading to skepticism about its effectiveness. Workers may be apprehensive about participating in the insurance scheme due, to several factors, including a perceived lack of transparency and accessibility, and a perception of corruption or mismanagement within the system." (From interviewee 1)</p> <p>"Construction workers with low education level tend to doubt the efficacy of the insurance system if they lack personal experience with it or if they have heard negative stories or rumors from their peers." (From interviewee 5)</p>

Construction workers' low willingness to participate in endowment insurance is also highlighted in many previous studies. According to research conducted by Kansra and Gill [34], a low level of awareness and understanding of the benefits of insurance has been identified among construction workers. Specifically, many workers lacked knowledge about the system and were unclear about how it worked [35]. This limited understanding may result in a lack of interest in participating in the program. The low income and unstable employment conditions prevalent in China's construction industry have been found to be significant contributors to the low willingness of workers to participate in endowment insurance. Existing research has demonstrated that low income acts as a significant barrier

to social insurance participation in China [36]. Moreover, the transient and seasonal nature of construction work can pose challenges to maintaining consistent contributions to the insurance system, thereby diminishing the motivation of workers to participate [37]. In summary, the results of prior research have indicated that a deficient level of awareness and comprehension regarding the advantages of endowment insurance among construction workers may account for their disinterest in the program [38,39]. This is consistent with our findings.

3.1.2. B2: Companies' Irresponsibility

The absence of endowment insurance provision by companies constitutes a substantial obstacle to promoting the policy among China's construction workforce. In the absence of construction companies' involvement in offering endowment insurance for their workers, guaranteeing access to policy benefits for the workers becomes a challenging task. There could be multiple factors contributing to this irresponsibility besides cost pressure, lack of policy support, and uncertain legal responsibilities. The detailed coding process can be found in Table 3.

Undoubtedly, the lack of commitment and responsibility exhibited by companies operating in the construction industry may pose a considerable obstacle to promoting endowment insurance among workers in China. The aforementioned statement is corroborated by prior research. For example, a study by Nijhuis [40] found that a considerable number of enterprises do not furnish their employees with endowment insurance perks, mainly due to financial constraints and apprehensions regarding future profitability. Similarly, research by Huang and Han [35] found that many construction companies in China are reluctant to provide social insurance benefits, including endowment insurance, to their workers, due to concerns about cost and administrative burden. The study also found that companies' lack of awareness and understanding of social insurance programs, as well as uncertainty about legal obligations and consequences of non-compliance, can be significant barriers to promoting participation in the program. Overall, these findings suggest that addressing companies' lack of commitment and responsibility towards providing endowment insurance is crucial to promoting participation in the program among workers in China's construction industry.

3.1.3. B3: Governments' Incomplete Management

In China, the promotion of endowment insurance to construction workers relies heavily on the government's role in the process. The government bears the responsibility for establishing and enforcing regulations that mandate employers to provide social security benefits, such as endowment insurance, to their workforce. Furthermore, the government is obliged to conduct outreach and education activities for workers, enlightening them about their entitlements and rights under the program. However, inadequate management by the government can pose a significant challenge to the successful promotion of endowment insurance to construction workers. Incomplete management can be delineated as the government's failure to provide sufficient supervision, resources, and assistance, leading to deficient program execution, limited accessibility to critical information, and corrupt practices. There could be multiple factors contributing to this incomplete management besides insufficient funding, complex administrative procedures, weak regulation, and regional differences. The detailed coding process can be found in Table 4.

Table 3. Thematic analysis process of B2.

Topic	Codes	Example Data
	Cost pressure	<p>“In the context of the construction industry, where profit margins are frequently narrow, companies may exhibit hesitancy in bearing the additional expenses related to providing endowment insurance for their workforce. This reluctance can be particularly pronounced for firms operating in a fiercely competitive environment, where price competition is intense, and labor costs constitute a substantial proportion of their total costs.” (From interviewee 5)</p> <p>“The practice of labor subcontracting, which is prevalent in the construction industry, can intensify the financial pressure on companies. Subcontractors may neglect enrolling their workers in endowment insurance or may fail to pay their contributions to the policy, thus creating an additional financial burden for the primary contractors who engage them.” (From interviewee 1)</p> <p>“The construction industry is characterized by projects of long duration, with profits being realized over several years. This characteristic can limit companies’ immediate cash flow, making it challenging to allocate funds for endowment insurance contributions, and thus they may prioritize short-term financial goals instead of long-term social responsibilities.” (From interviewee 10)</p>
Companies’ irresponsibility	Lack of policy support	<p>“The lack of a clearly delineated and stable policy framework can result in confusion and incongruity among companies, rendering it challenging for them to determine the most effective means of fulfilling policy mandates. This difficulty may present a particularly formidable barrier for small enterprises that lack the necessary resources and proficiency to navigate intricate regulatory landscapes.” (From interviewee 8)</p> <p>“The administrative burden associated with compliance with endowment insurance policy requirements can also be a factor that deters companies from providing this insurance. This typically necessitates the maintenance of detailed records and the completion of voluminous documentation, which may require considerable time and resources. As a result, companies may need to invest in additional staff and technology to manage these tasks effectively. The cost of these investments can be particularly high for smaller companies with limited resources.” (From interviewee 9)</p> <p>“The absence of financial subsidies or tax incentives can pose a challenge for construction companies in providing endowment insurance for their workers. In a highly competitive and cyclical industry, construction companies may encounter significant cost pressures. The implementation of endowment insurance programs can further diminish profit margins, especially during economic downturns. In the absence of financial assistance from government or other sources, companies may struggle to absorb these costs and prioritize social responsibility investments.” (From interviewee 7)</p>
	Uncertain legal responsibilities	<p>“In the context of social insurance programs, companies may exhibit reluctance to participate in such initiatives, owing to a dearth of clearly defined legal obligations and the potential repercussions of non-adherence. The complexity and dynamic nature of regulatory demands further compound the uncertainty, making it difficult for firms to remain updated and ensure compliance with the relevant legal requirements. As a result, companies may opt for non-compliance to avoid legal risk and potential financial penalties.” (From interviewee 11)</p> <p>“Certain companies may attempt to circumvent their legal responsibilities concerning social insurance by hiring workers as independent contractors or temporary workers rather than full-time employees. While this strategy can allow companies to evade the costs and administrative burden of providing social insurance benefits such as endowment insurance, it may ultimately increase their risk of legal disputes or penalties for non-compliance. Such consequences can be detrimental to a company’s financial stability and reputation.” (From interviewee 8)</p>

Table 4. Thematic analysis process of B3.

Topic	Codes	Example Data
	Insufficient funding	<p>“China’s social security system, encompassing endowment insurance, confronts substantial financial constraints, due to demographic challenges, particularly the aging population. These challenges have raised concerns regarding the sustainability of the system and the feasibility of expanding coverage or augmenting benefits. Despite the Chinese government’s efforts to tackle these issues, including raising the retirement age and exploring alternative funding sources, there persists a requirement for additional resources to guarantee the effective promotion and administration of endowment insurance.” (From interviewee 3)</p> <p>“Inadequate funding for endowment insurance can lead to a range of negative outcomes, including limited outreach and education, reduced benefits, inadequate administrative support, and decreased trust and confidence among construction workers.” (From interviewee 6)</p>
	Complex administrative procedures	<p>“The promotion of endowment insurance to construction workers in China can be hindered by complex administrative procedures. The enrollment, contribution collection, benefit calculation, and claims processing procedures for the program can be overly complex, resulting in limited enrollment, reduced contribution collection, delayed or denied claims, and inadequate administrative support for workers.” (From interviewee 11)</p> <p>“Construction workers, who often have limited education and language skills, may face challenges in enrolling in and receiving endowment insurance benefits. Workers are typically expected to provide various documentation, including employment contracts, proof of contributions, and identification cards, which can be difficult to procure or interpret. Moreover, the process for claiming benefits can be sluggish and bureaucratic, which can discourage workers from participating in the program.” (From interviewee 1)</p>
Governments’ incomplete management	Weak regulation	<p>“Inadequate legislation and enforcement can engender limited employer compliance, making it challenging for them to comprehend their obligations and potentially evade program requirements. Such noncompliance can lead to reduced contributions to the program and insufficient resources for its administration, ultimately resulting in reduced benefits for workers.” (From interviewee 8)</p> <p>“Poor legislation and enforcement can lead to insufficient resources for program administration, thereby impeding the government’s ability to promote the program effectively. Without adequate resources, the government may face difficulties in effectively implementing the program and providing necessary support to promote it, which can reduce its effectiveness and limit its ability to benefit workers.” (From Interviewee 1)</p> <p>“Weak regulation can erode the trust and confidence of construction workers in the program. Inadequate program requirements or noncompliance by employers can decrease worker participation and undermine program efficacy. Workers are more likely to participate if they perceive the program as fair and believe they will receive entitled benefits. Conversely, lack of confidence in the program’s ability to provide benefits reduces participation rates, hindering program objectives.” (From Interviewee 11)</p>
	Regional differences	<p>“The variation in labor market conditions can result in unequal access to job opportunities and resources for retirement saving, which can ultimately affect the social security system’s effectiveness. Therefore, it is crucial to identify these regional disparities and devise policies to address them to ensure that all construction workers have access to stable and adequately compensated jobs, and can rely on retirement programs to support their needs.” (From Interviewee 9)</p> <p>“Disparities in administrative capacity across regions can significantly impact the effectiveness of endowment insurance programs for construction workers. There may be variations in the effectiveness of promoting and administering the program across regions, due to differences in resources, expertise, and infrastructure. Consequently, certain regions may face challenges in reaching and serving construction workers effectively, resulting in limited access to the program and lower benefits compared to workers in other regions.” (From Interviewee 3)</p> <p>“The decentralized nature of China’s social security system creates difficulties for construction workers who migrate between regions. Varied social security programs and benefit levels in different provinces and regions pose a challenge for workers to comprehend and obtain their entitled social security benefits, particularly for endowment insurance. Additionally, discrepancies in the comprehensiveness and generosity of endowment insurance programs across regions may affect workers’ participation decisions.” (From Interviewee 10)</p>

Incomplete government management has negative impacts on promoting endowment insurance to construction workers in China. There are four key areas where incomplete management can create barriers: insufficient funding, complex administrative procedures, weak regulation, and regional differences. Insufficient funding may limit the scope and quality of the insurance programs available to construction workers [41], while complex administrative procedures may deter participation and lead to delays in receiving benefits. Weak regulation can reduce the effectiveness of programs and damage public trust in the government's ability to provide adequate social security [42]. Lastly, regional differences can create disparities in participation and benefits across different regions [43,44]. Together, these barriers can significantly reduce the effectiveness of endowment insurance programs, making it difficult for construction workers to access the benefits they need to address the challenges of population aging [6,45]. It is important for the government to address these barriers and work towards more comprehensive and accessible endowment insurance programs for construction workers. Findings from this study are consistent with previous studies.

3.2. Facilitators for Further Endowment Insurance Promotion

Endowment insurance promotion directed at China's construction workers faces various challenges from construction workers, companies, and governments. Based on the barriers identified, a series of targeted facilitators are proposed to further promote endowment insurance in China's construction industry. Each facilitator is detailed separately below.

3.2.1. Increasing Awareness and Understanding of the Benefits of Endowment Insurance

Raising awareness and improving understanding of the benefits of endowment insurance is an important factor in promoting endowment insurance programs to China's construction workers. To achieve this, targeted education and outreach campaigns can be developed, which may include workshops, informational brochures, and online resources. These campaigns could be tailored to address the unique needs and concerns of construction workers, such as those who work as migrant laborers, have irregular employment, or have low levels of financial literacy.

As interviewee 10 suggested:

"To promote the endowment insurance programs to China's construction workers, targeted education and outreach campaigns could be developed through various channels, including conducting workshops at construction sites or community centers where construction workers gather. The workshops should be held in local languages or dialects to ensure that workers understand the information presented. Additionally, the development and distribution of informational brochures and online resources could be achieved through partnerships with community organizations or labor unions."

In addition to the form, the contents of these campaigns are also essential. According to Interviewee 7:

"Education and outreach campaigns aimed at promoting endowment insurance programs among China's construction workers could place emphasis on the significance of retirement savings and the advantages of participating in these programs, including assured income during retirement and protection against unexpected financial difficulties. These initiatives could also target misconceptions or apprehensions that workers may hold about endowment insurance, such as anxieties regarding its affordability or the dependability of insurance providers."

Additionally, partnerships with community organizations, labor unions, and other advocacy groups could help to build trust and increase engagement among construction workers.

Interviewee 1 explained:

“Collaborating with community organizations, labor unions, and advocacy groups can facilitate the engagement of construction workers in endowment insurance programs. These groups can serve as intermediaries between workers and employers, furnish educational materials and resources on workplace safety, financial literacy, and workers’ rights, and advocate for better working conditions and benefits. Through collaborative efforts, these organizations can promote trust and foster a supportive environment for construction workers. Moreover, they can help ensure that the specific needs and challenges of construction workers, such as those who are migrant laborers or have unstable employment, are considered in outreach activities and policy-making processes.”

Such efforts can help to provide construction workers with the knowledge and understanding necessary to fully appreciate the value of endowment insurance and to encourage their participation in the program [46]. Additionally, providing accessible and easily understood information can help to address any misunderstandings or confusion that workers may have about the program [47], which can ultimately lead to increased participation rates and improved outcomes for workers.

3.2.2. Adjusting the Design of the Endowment Insurance Scheme

In order to promote endowment insurance programs to China’s construction workers, adjusting the design of the scheme could serve as a facilitator. This would involve customizing the program’s design to meet the specific needs and circumstances of construction workers, which could effectively mitigate some of the challenges and obstacles discussed earlier. The present endowment insurance scheme for construction workers is predicated upon a defined contribution model, where both the employer and the employee contribute to an individual account. Nevertheless, the relatively low earnings and unsteady employment patterns that characterize many construction workers may render it arduous for them to make consistent contributions and amass adequate savings. One potential solution is to explore alternative models for endowment insurance.

According to Interviewee 3:

“Adapting the premium rate and payment structure represents a potential facilitator for enhancing the affordability and accessibility of the endowment insurance program for construction workers. Moreover, introducing greater flexibility in contribution amounts and frequency could offer a more accommodating approach to the frequently unstable income patterns typical of construction workers.”

Interviewee 11 suggested:

“An alternative approach could be to explore a defined benefit model for endowment insurance, which guarantees a specific level of retirement income, regardless of the individual’s contributions. This could offer greater financial security and stability for construction workers, especially those with low incomes and unpredictable work patterns. By adopting this model, the risk of inadequate retirement income due to fluctuating income levels and insufficient contributions could be mitigated, providing more consistent and reliable support for workers.”

Interviewee 1 added:

“An expansion of the benefits provided by the endowment insurance program, including, but not limited to, comprehensive health care coverage or disability benefits, could enhance the appeal of the program to construction workers, and augment the program’s role in providing a holistic social safety net.”

Moreover, the administrative processes for endowment insurance programs could be simplified and made more convenient, such as through online enrollment and account management. At present, the enrollment and management of endowment insurance programs are often deemed complicated and time-consuming, which may act as a barrier to participation. Streamlining these procedures could simplify the program’s administration,

making it more accessible and convenient, and reducing the administrative burden on employers and workers.

As interviewee 2 suggested:

“Online enrollment and account management present a potential solution to simplify administrative processes. Such platforms would facilitate enrollment and account management, permitting workers to participate in the program from any location without the need to visit a physical office. The online platform could also offer tools to help workers monitor their contributions and forecast their benefits, thereby increasing their understanding of the program and planning for retirement.”

Interviewee 9 added:

“Reducing the paperwork and administrative requirements for employers could enable easier compliance with the program and prevent penalties for noncompliance. Simplified reporting requirements and automatic payroll deductions could serve to reduce the administrative burden on employers, further simplifying the administrative process.”

In addition, incorporating features such as portability and accessibility could help to make the program more attractive to construction workers, who often change jobs and face uncertainty in their employment status. For instance, the program could be designed to allow workers to transfer their contributions and benefits between different jobs or to provide a mechanism for accessing benefits in the case of unemployment or disability.

According to Interviewee 5:

“Many construction workers are migrant workers who move frequently between jobs and may not have a steady income or long-term job security. Incorporating portability and accessibility features into the endowment insurance program could also help to address the challenges faced by construction workers. Portability would allow workers to transfer their benefits between different jobs, which would make the program more attractive to workers who change jobs frequently. Additionally, incorporating accessibility features, such as providing information in multiple dialects or offering online resources, could help to make the program more accessible to workers who may have limited access to information or face language barriers.”

In summary, in order to promote endowment insurance to China’s construction workers, customizing its design could mitigate some of these challenges [48]. One solution is to adjust the premium rate and payment structure and introduce more flexibility in contribution amounts and frequency. Another solution is to explore a defined benefit model, which would guarantee a specific level of retirement income, regardless of the individual’s contributions [49–51]. Expanding the program’s benefits, simplifying the administrative procedures through online enrollment and account management, and reducing the paperwork and administrative requirements for employers could also improve participation [52]. Incorporating features such as portability and accessibility could help to make the program more attractive to construction workers, who often change jobs and face uncertainty in their employment status. These adjustments could enhance the affordability and accessibility of the endowment insurance program for construction workers [53], providing them with more consistent and reliable support.

3.2.3. Strengthening Legislation and Enforcement

Currently, China has laws and regulations that require employers to provide endowment insurance for their employees, including those in the construction industry. However, these regulations are not always strictly enforced, and some employers may neglect to enroll their workers in the program or fail to make the required contributions. To advance the promotion of endowment insurance programs among China’s construction workers, it is imperative to reinforce the legal framework and its implementation. This may entail a variety of actions, including heightening the severity of sanctions for failure to comply with the program, augmenting regulatory measures to deter misconduct and deception, and

extending more all-encompassing legal safeguards for workers' entitlements and privileges. One way to strengthen legislation and enforcement is to establish clear guidelines and standards for the endowment insurance program.

According to Interviewee 2:

"The establishment of clear guidelines and standards for the endowment insurance program can enhance legislation and enforcement, thereby promoting the program to construction workers in China. This can be achieved through the establishment of specific requirements for the program, such as contribution rates, benefit amounts, eligibility criteria, and administrative procedures. By providing transparent and accessible guidelines and standards, the program can be rendered more equitable, while preventing potential instances of discrimination or abuse."

Interviewee 4 added:

"To enhance the effectiveness of legislation in promoting endowment insurance programs to construction workers, it is imperative to institute penalties for noncompliance or violations of the program's requirements. Such penalties would discourage employers from violating the program's rules, and provide a channel for workers to seek restitution if their rights are infringed. Furthermore, imposing penalties would foster accountability, transparency, and curtail fraudulent practices in the program's management."

Moreover, regional differences can be addressed in the legislation process by considering the unique circumstances and needs of each region. This may involve conducting research and analysis to better understand the demographic, economic, and social factors that impact the implementation and effectiveness of the endowment insurance program in each region.

Interviewee 11 suggested:

"In China, the central government offers general guidance and regulations for the development and execution of endowment insurance programs. However, regional governments are also afforded a degree of flexibility to adjust their programs to align with local conditions. This approach allows for some degree of customization to better suit the unique needs and circumstances of different regions while still guaranteeing a basic level of uniformity and consistency nationwide."

Interviewee 3 added:

"To mitigate regional disparities, local engagement and consultation can be employed. This entails partnering with various local stakeholders, including government officials and community organizations, to obtain feedback and insights regarding the development and execution of the endowment insurance program. By involving local stakeholders, policymakers can gain a more comprehensive understanding of the distinctive obstacles and prospects within each region, and formulate more efficient and adaptive policies that are customized to local requirements."

In addition, another way to strengthen legislation and enforcement is to improve the monitoring and oversight of the program.

Interviewee 4 explained:

"Strengthening legislation and enforcement can involve the establishment of dedicated oversight bodies or empowering existing agencies to ensure compliance with the regulations, investigate any potential violations, and take appropriate actions when necessary. By implementing such monitoring and oversight, the effective and fair implementation of the endowment insurance system can be ensured, workers' rights and benefits can be safeguarded, and public trust in the system can be fostered."

The promotion of endowment insurance programs for construction workers in China requires the reinforcement of the legal framework and its implementation. Although laws and regulations exist, compliance with the program is not always strictly enforced, and

penalties for noncompliance are not always severe [10]. To strengthen legislation and enforcement, clear guidelines and standards can be established, specifying contribution rates, benefit amounts, eligibility criteria, and administrative procedures. This would provide transparency and equity, prevent discrimination and abuse, and encourage compliance [20]. To address regional differences, local engagement and consultation can be employed, partnering with government officials and community organizations to gain insights into the unique circumstances and needs of each region [54]. Additionally, monitoring and oversight can be improved by establishing dedicated oversight bodies or empowering existing agencies to investigate and take appropriate actions when necessary [55]. These actions would ensure the effective and fair implementation of the endowment insurance system, safeguard workers' rights and benefits, and foster public trust in the system.

4. Discussion

The implementation and promotion of endowment insurance for construction workers encounter numerous challenges compared to other industries. There are various factors contributing to these challenges, such as irregular employment patterns, limited knowledge of benefits, low income, transient work status, and high-risk work environments, etc. The aim of this study was to investigate the barriers that hinder the promotion of endowment insurance in China's construction industry, and to identify potential facilitators that could help overcome these barriers. The study's findings are in line with previous research, such as Sun [56], Deng and Xiang [57], Qi, Mohammadi [39], Xu and Mei [58], Qu, Feng [29], etc. The present research expands on prior literature by offering a comprehensive and in-depth examination of the challenges and enablers in advancing endowment insurance in China's construction industry.

Unlike commercial insurance, which is designed for profitable purposes, non-profit endowment insurance serves as a critical component of China's social security system and is developed and operated by the government [59]. The program is funded through contributions from both employers and employees, with the government playing a regulatory and oversight role. Thus, the promotion of endowment insurance in China's construction industry requires cooperation and coordination among various stakeholders, including workers, companies, and governments. The willingness of construction workers to participate in the endowment insurance program is crucial for its success. However, currently, many construction workers are reluctant to participate in the program, due to a low level of awareness and understanding of the benefits of endowment insurance, low income, unstable employment situation, and lack of trust in the insurance system. The implementation of endowment insurance in the construction industry also relies on the provision of contributions and facilitation of enrollment by companies, yet this expectation is often unfulfilled in practice. Many companies lack clarity about their responsibilities and deviate from the required standards. This may be caused by cost pressure, lack of policy support, and uncertain legal responsibilities. Furthermore, it is essential for governments to formulate policies and regulations that encourage participation and ensure equitable and effective administration of the program. However, this is not always the reality. Governments' management is still not complete because of insufficient funding, complex administrative procedures, weak regulation, and regional differences. The interactions among these stakeholders can have a significant impact on the promotion of endowment insurance to China's construction workers. It is recommended that policymakers and implementers take into account the barriers that have been identified in order to promote further adoption of endowment insurance in the construction industry in China. There are multiple strategies that can be employed to promote participation in endowment insurance programs for construction workers. An effective approach is needed to increase construction workers' awareness and understanding regarding the benefits of the program and the process to access them. Additionally, modifying the design of the program to make it more flexible and affordable can mitigate barriers to participation, such as low income and unstable employment. Finally, strengthening legislation and enforcement can enhance

compliance among employers in terms of enrolling workers in the program and making the necessary contributions. Several innovative improvement directions have also emerged. These include leveraging digital technology to simplify enrollment and management processes, encouraging partnerships between insurance providers and construction companies to create tailored insurance plans, and exploring collaborations with financial institutions to provide micro-credit options for construction workers, to make premium payments more manageable. Furthermore, creating peer-to-peer support networks among construction workers can encourage information sharing and foster trust in endowment insurance programs. These innovative measures, in combination with the previously discussed general improvement strategies, have the potential to greatly enhance the promotion, accessibility, and effectiveness of endowment insurance programs for China's construction workers.

In some developed countries such as Germany, the Netherlands, and Sweden, endowment insurance programs for construction workers have been in place for several decades [60]. Comparing China's endowment insurance program with similar programs in other countries can offer a valuable comparative analysis to identify the strengths and weaknesses of different models. This analysis can provide insights and recommendations for improving China's own program. In the United States, construction workers' retirement benefits are commonly covered through employer-sponsored retirement plans, such as 401(k) plans. Conversely, in Canada, endowment insurance programs for construction workers are managed at the provincial level, and they can encompass several benefits, including disability and survivor benefits. In contrast, China's program is a compulsory, state-administered program that covers both urban and rural workers in the construction sector and offers various benefits including retirement pensions, healthcare coverage, and benefits for beneficiaries in the event of the policyholder's death. Despite the differences in the design and implementation of endowment insurance programs for construction workers in different countries, there are shared challenges that must be addressed. One major challenge in implementing endowment insurance programs for construction workers across different countries is ensuring compliance with program requirements and preventing fraud, given the industry's informality and transience. Nonetheless, the ultimate goal of these programs remains the same, which is to provide workers with financial assistance and stability in their later years. Improving the legal framework, supervision, monitoring, and sanctions for noncompliance can help enhance the effectiveness of these programs in achieving their objectives.

5. Conclusions and Recommendations

Promoting endowment insurance to construction workers is imperative, due to their occupation's inherent income instability. Nevertheless, several barriers impede the advancement of the endowment insurance program, and a comprehensive examination of these challenges, particularly in a specific context, remains lacking. Consequently, this study utilizes a qualitative research approach, involving semi-structured interviews and thematic analysis, to explore the barriers and facilitators of promoting endowment insurance in China's construction industry. The results indicate that the barriers are mainly from construction workers' low willingness to participate in insurance (low level of awareness and understanding of the benefits of endowment insurance, low income, unstable employment situation, and lack of trust in the insurance system), companies' irresponsibility (cost pressure, lack of policy support, uncertain legal responsibilities), and governments' incomplete management (insufficient funding, complex administrative procedures, weak regulation, and regional differences). To address these barriers, three facilitating measures are also proposed, including increasing awareness and understanding of the benefits of endowment insurance, adjusting the design of the endowment insurance scheme, and strengthening legislation and enforcement.

This study offers a qualitative exploration of the barriers to and facilitators for implementing endowment insurance in China's construction industry. However, it remains unclear how significant these factors are in influencing the effectiveness of the program,

which may pose challenges for policymakers seeking to develop more targeted management strategies. Hence, future research should employ quantitative methods, such as the analytic hierarchy process, to assess the relative significance of each identified barrier in promoting endowment insurance to China's construction workers.

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