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Research on the Problems and Countermeasures of Construction Materials Procurement Cost Control

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Abstract: In the whole construction process of engineering projects, the procurement cost of construction materials accounts for a large proportion of the total project cost, and its control effect directly affects the economic benefits and overall construction benefits of the project, making it one of the core links in the management of construction engineering projects. At present, the overall development of China's construction industry is in a good state, but most construction enterprises still have many deficiencies in the control of material procurement costs, failing to form a scientific and complete control system. This leads to frequent problems such as high procurement costs and resource waste, which restricts the sustainable development of enterprises. Combining with the actual workflow of construction material procurement, this paper analyzes the common problems existing in the current material procurement cost control process, and puts forward targeted and feasible countermeasures. It aims to provide a reasonable reference for construction enterprises to optimize procurement cost control and enhance core competitiveness, so as to promote the healthy and orderly development of the construction industry.

Keywords: Construction engineering; Material procurement; Cost control; Problems; Countermeasures

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1. Introduction

As one of the pillar industries of China's national economy, the construction engineering industry plays an important role in promoting economic growth, improving infrastructure construction and safeguarding people's livelihood [1]. With the continuous development of the construction industry, market competition is becoming increasingly fierce, and the survival pressure on construction enterprises is constantly increasing. How to effectively control project costs and improve the economic benefits of enterprises on the premise of ensuring project quality and construction progress has become the key for enterprises to achieve sustainable development. An in-depth analysis of the problems existing in the procurement cost control of construction materials and the exploration of scientific and reasonable countermeasures are of great practical significance for construction

enterprises to reduce costs, improve benefits and enhance market competitiveness, and also play a positive role in promoting the high-quality development of the entire construction industry.

2. Main problems in the procurement cost control of construction materials

2.1. Weak awareness of procurement cost control

At present, many construction enterprises attach more importance to construction, quality and progress while neglecting procurement costs [2]. The awareness of material procurement cost control is weak from top to bottom in the enterprise, and the concept of material cost control has not been established. Some enterprise leaders regard material procurement as merely "price comparison and purchasing", ignoring its important role in the economic benefits of the enterprise, and lack the strategic planning and daily management awareness of procurement cost management. At the level of procurement personnel, most lack cost control awareness and professional management capabilities, only taking the completion of procurement tasks and ensuring the timely supply of materials as their core responsibilities, and paying insufficient attention to the level of procurement costs. Some personnel even have behaviors such as waste and irregular procurement, which further increase costs.

2.2. Unreasonable formulation of procurement plans

The procurement plan is an important prerequisite for controlling procurement costs. However, when formulating procurement plans, many construction enterprises currently lack scientific research and analysis, with strong subjectivity and blindness, making it difficult to adapt to changes in construction progress and market environment [3]. Before formulating plans, some enterprises fail to comprehensively sort out construction drawings, progress and material demand, and only estimate the usage and procurement time based on experience, leading to a disconnect between the plan and actual demand, either insufficient procurement volume requiring emergency procurement, which drives up procurement prices and transportation costs; or excessive procurement resulting in material backlog, which occupies funds and increases warehousing and storage costs, and even material loss and deterioration, causing resource waste.

2.3. Unscientific selection of procurement channels

Procurement channels directly affect procurement prices and costs, and scientific channels can effectively reduce costs and ensure suppl [4]. However, many construction enterprises currently lack a systematic channel management system. Some enterprises have a single procurement channel, relying on a small number of suppliers for a long time and failing to explore and cultivate potential suppliers. This leads to a lack of competitive pressure on suppliers, making it difficult for enterprises to obtain preferential prices and high-quality services. At the same time, enterprises face risks such as supplier failures and delayed delivery, which indirectly affect construction progress and increase costs [5].

2.4. Non-standard management and control of the procurement process

At present, the procurement processes of many enterprises are non-standard and the management and control are not strict. The inquiry link lacks a standardized process, failing to fully conduct inquiries with multiple suppliers or having under-the-table operations, making it impossible to obtain reasonable prices [6]. When comparing prices, only the unit price is focused on, while ignoring material quality, specifications, transportation costs and after-sales service, resulting in high actual procurement costs. When signing contracts, the provisions are not rigorous

and comprehensive, failing to clearly specify the specific price, delivery date, quality requirements, breach of contract compensation and other contents, which is prone to disputes in the later period and is not conducive to the protection of the enterprise's interests. In the process of acceptance, warehousing and payment, non-compliant acceptance procedures and the inadequate work attitude of relevant personnel lead to unqualified materials entering the construction site, which have to be replaced for the second time; the payment procedures are messy, and early or excessive payment causes capital loss, while delayed payment affects cooperation with suppliers and drives up procurement prices for the next period.

2.5. Inadequate warehousing and transportation management

In the storage link, there is a lack of professional storage equipment and management personnel. Construction materials are stored in a disorganized manner without clear classification standards, which is likely to cause damage, rot and loss of raw materials, thus increasing the loss rate; the storage system is not perfect, the control of warehousing, delivery and inventory is not strict, and the inventory information is inaccurate, which is likely to lead to repeated procurement or delayed procurement. In addition, the delayed disposal of slow-moving materials occupies warehouse space and funds, increasing relevant costs [7]. In terms of transportation management, enterprises lack scientific transportation plans and make unreasonable choices of transportation methods. For materials with large usage and long transportation distance, high-cost-performance transportation methods are not selected, which increases transportation costs; there is a lack of material protection measures in the transportation process, which is easy to cause material damage and increase additional procurement costs.

3. Countermeasures for the procurement cost control of construction materials

3.1. Strengthen the awareness of procurement cost control and create a good cost control atmosphere

Strengthening the awareness of full-staff procurement cost control within the enterprise is the foundation of doing a good job in procurement cost control. Enterprise management should attach great importance to it, establish the concept of "full-staff and whole-process cost control", incorporate procurement cost control into the overall development strategy and daily management of the enterprise, clarify control objectives and significance, and guide all departments and employees to attach importance to this work [8].

Strengthening the training and professional development of procurement personnel is essential for improving procurement cost control. Regular training programs should be organized to enhance personnel's knowledge of procurement management and cost control methods. Such programs can improve competencies in market inquiry, price comparison, negotiation, and cost management, while fostering a strong awareness of cost efficiency. By establishing the concept of "cost-saving and rational procurement," procurement staff can standardize procurement practices and effectively reduce waste and irregular purchasing behaviors.

In addition, communication and coordination among different departments should be strengthened to form an integrated cost control mechanism. Clear responsibilities for procurement cost control should be assigned to each department, supported by an effective communication and information-sharing system. In practice, close collaboration among construction, design, procurement, and warehousing departments is necessary to ensure that procurement plans align with project requirements. The design department should consider material cost-effectiveness during the design stage, while the construction department should provide timely feedback on construction progress and material consumption changes. Such coordination provides a reliable basis for adjusting

procurement plans and helps reduce unnecessary procurement costs caused by poor communication.

3.2. Formulate scientific and reasonable procurement plans and improve the feasibility and flexibility of procurement plans

A scientific and reasonable procurement plan is an important prerequisite for controlling procurement costs. Enterprises need to formulate a sound plan combined with the actual construction needs and changes in the market environment to improve its feasibility and flexibility [9].

Comprehensive investigation and analysis should be conducted prior to the formulation of procurement plans. Procurement personnel should fully understand construction drawings, project schedules, and the required quantities, specifications, and models of materials. Based on the construction progress plan, reasonable estimates of procurement quantities and delivery timing should be made to ensure that procurement plans closely match the actual needs of the construction site. This approach helps avoid material accumulation and capital occupation caused by excessive or repeated procurement, while also preventing urgent purchases resulting from insufficient material supply, thereby reducing additional procurement costs.

Additionally, continuous monitoring of market conditions is essential. Strengthening market research on material price trends enables procurement personnel to accurately understand price fluctuations and available supply channels. Corresponding procurement strategies should then be adopted according to market developments. For example, materials may be purchased in advance when price increases are anticipated, while alternative procurement channels or suppliers should be identified when supply conditions change to ensure stable material availability [10].

Furthermore, a regular revision mechanism for procurement plans should be established. Procurement plans should be adjusted in a timely manner based on changes in construction progress, actual material consumption, and market conditions during implementation. At the same time, effective supervision and inspection should be carried out to identify and correct deviations, thereby ensuring the practicality and effectiveness of the procurement plan [11].

3.3. Optimize procurement channel management and select high-quality and efficient suppliers

Effective procurement channel management and the selection of reliable suppliers are critical for controlling procurement costs, ensuring material quality, and maintaining stable supply. Enterprises should establish a comprehensive procurement channel management system, expand procurement channels, and cultivate a diversified supplier network to achieve standardized and diversified procurement practices [12].

To achieve this, procurement methods should be diversified and supplier resources continuously expanded. Enterprises should avoid reliance on a single supplier and instead obtain supplier information through multiple channels. Suppliers with legal qualifications, good credit records, strong supply capacity, and competitive pricing should be selected as potential partners and incorporated into a supplier reserve database. This approach not only broadens supplier options but also introduces competitive pressure among suppliers, encouraging improved service quality and more favorable pricing [13].

Furthermore, a sound supplier evaluation system should be established to enhance the supplier selection process. In addition to product price, enterprises should comprehensively evaluate supplier qualifications, reputation, material quality, supply capability, after-sales service, and transportation costs. A regular supplier assessment mechanism should also be implemented to evaluate supplier performance. Preferential policies, such as long-term cooperation and priority procurement, may be granted to high-performing suppliers, while

underperforming suppliers should be promptly eliminated to continuously optimize the supplier pool.

Finally, enterprises should strengthen strategic cooperation with core suppliers by establishing long-term and stable partnerships. Through long-term cooperation agreements, both parties can clarify their rights and responsibilities, promote resource sharing, and achieve complementary advantages. Bulk procurement and long-term collaboration can help secure more competitive prices and improved after-sales services, thereby reducing procurement costs and associated risks. At the same time, effective communication and coordination should be maintained to provide timely feedback on material demand and quality requirements, ensuring efficient and targeted supplier delivery.

3.4. Standardize the management and control of the procurement process and reduce cost losses in the procurement process

Standardizing the processes of all links in procurement and strengthening process management and control are important guarantees for reducing costs and avoiding risks. Enterprises should establish a sound procurement management system, clarify the procurement process and the responsibilities of each link, strengthen the management and control of inquiry, price comparison, negotiation, contract signing, material acceptance, payment and other links, and ensure that the procurement process is standardized, transparent and efficient [14].

The processes of inquiry, price comparison, and negotiation should be standardized to ensure transparency and rational procurement decisions. Before procurement, quotations should be obtained from multiple suppliers to understand market pricing and ensure the completeness of quotation information. During the price comparison stage, evaluation should not be limited to material price alone but should also consider factors such as material quality, specifications, transportation costs, and maintenance requirements in order to identify the most suitable procurement channel. During negotiations, procurement personnel should actively communicate with suppliers to secure more favorable prices and payment terms, thereby reducing procurement costs.

In addition, procurement contract management should be standardized. Contracts should be carefully reviewed prior to signing to ensure that all clauses are clear, comprehensive, and enforceable. Key aspects, including price, delivery schedule, quality requirements, payment methods, liability for breach of contract, and price adjustment mechanisms, should be explicitly defined to minimize potential disputes. Furthermore, contract performance should be regularly monitored, and any issues identified during implementation should be promptly corrected to ensure effective contract execution and safeguard the interests of the enterprise.

Strict implementation of material acceptance and payment procedures is also essential for effective procurement management. A standardized material acceptance system should be established, clearly defining inspection standards and procedures. During acceptance, responsible personnel should carefully verify that the quality, specifications, and quantities of materials meet construction requirements, preventing unqualified materials from entering the site and avoiding rework or replacement caused by quality problems. On top of that, standardized payment procedures should be followed, with payments made according to the contractually agreed methods and timelines. This helps avoid premature or excessive payments that increase capital occupation costs, while also preventing delayed payments that could damage supplier relationships and affect future procurement activities.

3.5. Strengthen warehousing and transportation management and reduce warehousing and transportation costs

Strengthening the management of material warehousing and transportation and optimizing the relevant processes

are important links in reducing the total procurement cost. Enterprises need to improve the warehousing and transportation management system, raise the management level, reduce material loss and cut down the relevant expenses [15].

Effective warehouse management is essential for reducing material losses and improving procurement efficiency. Enterprises should enhance warehouse facilities and assign professional warehouse managers to oversee storage operations. Warehouse space should be rationally planned, with materials of different types and specifications stored separately and clearly labeled to prevent damage, deterioration, or loss caused by mixed storage. Moreover, a comprehensive warehouse management system should be established to regulate material storage, issuance, and inventory inspection. Regular inventory checks should be conducted to ensure the accuracy and reliability of inventory data, allowing enterprises to monitor stock levels in real time and avoid repeated procurement and material accumulation.

Transportation management should also be standardized to reduce logistics costs and improve material handling efficiency. Scientific transportation plans should be developed, and appropriate transportation methods should be selected based on the type, quantity, transportation distance, and timeliness requirements of materials. For materials with large demand and long transportation distances, centralized or combined transportation can be adopted to improve cost efficiency. Furthermore, effective control of the transportation process should be maintained, including proper packaging and protection of materials, to prevent damage or loss during transportation and avoid additional procurement costs resulting from material shortages.

4. Conclusion

The procurement cost control of construction materials is an important part of the cost management of construction enterprises, which has an important impact on the economic benefits and market competitive advantages of enterprises. At present, there are a series of problems in the procurement cost control of construction materials, such as weak cost control awareness, unreasonable procurement plans, unscientific selection of procurement channels, non-standard management and control of the procurement process, and inadequate warehousing and transportation management. These problems seriously affect the effect of enterprises in reducing costs and their sustainable development. In response to the above problems, construction enterprises should strengthen the awareness of procurement cost control and create a good cost control atmosphere; formulate scientific and reasonable procurement plans and improve the feasibility and flexibility of procurement plans; optimize procurement channel management and select high-quality and efficient suppliers; standardize the management and control of the procurement process and reduce cost losses in the procurement process; strengthen warehousing and transportation management and reduce warehousing and transportation costs. Through a series of practical and feasible countermeasures, continuously optimize the material procurement cost control work, reduce procurement costs, and improve the economic benefits and core competitiveness of enterprises.

Disclosure statement

The author declares no conflict of interest.

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