

Suggestions for Detection System of Bid-rigging in Public Construction Projects

Sanghoon Song¹, Jong-Dae Bang², Jeong-Rak Sohn³ and Gun-Hee Cho⁴

Abstract: In recent years, the bid-rigging in public construction markets has been treated as a critical issue in Fair Trade Commission. The investigation revealed that the collusion was implemented extensively in every area from the material supply to the construction service of general contractors. This study reviewed the causes of the bid-rigging in public construction projects, and proposed the improvement plan to eradicate bad practices. Firstly, the causes and purposes of bid-rigging were categorized into two types of internal factors from construction companies and external environment factors influencing business activities. Secondly, the system development method was explained to detect the signs of bid-rigging based on the technical proposal documents in open tender. The detection systems of repetitive public owner also provide the function of sharing data on the companies and cases to violate the fair trade regulation. In addition, the problems and improvement direction of public procurement policies were discussed.

Keywords: Bid-rigging, Public Construction Project, Public Owner, Fair Trade

I. INTRODUCTION

A. Background and Purpose

In construction industry in Korea, the bid-rigging has led to surprisingly many subsequent problems. From the material supply to the construction service of general contractors, every procurement area has allegedly been involved to the collusion. The construction companies appeal against the legal punishment including the fine, bidding restrictions, etc. In the viewpoint of controlling bid-rigging, the prevention in advance assuring fair competition is important as well as the application of sanction afterwards. Many public owners in Korea have planned to establish the detection systems for bid-rigging signs as a prevention measures. This study reviews the causes of bid rigging in construction services and discusses the essential factors in developing the detection system.

B. Contents and Method

1) *Review the Status:* Review the definition, types, and current status in Korea by analyzing previous studies.

2) *Define Causes:* Categorize the causes and purposes of bid-rigging considering characteristics of public construction market and legislature.

3) *Suggest Requirement:* Suggest the direction of system development for detecting bid-rigging and other requirement for more effective control.

II. BID-RIGGING IN PUBLIC CONSTRUCTION MARKET

A. Definition and Types of Bid-rigging

1) *Definition:* Bid rigging(or collusive tendering)

occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods or services for purchasers who wish to acquire products or services through a bidding process(OECD, 2009). Bid rigging occurs when bidders agree among themselves to eliminate competition in the procurement process, thereby denying the public a fair price.

2) *Types of Bid-rigging:* The major types of bid-rigging can be classified as cover bidding, bid suppression, bid rotation, and market allocation. The explanations for each type are as follows.

- Cover bidding: As the most frequent bid-rigging scheme, it occurs when individuals or firms agree to submit bids that involve at least one of the following: (1) a competitor agrees to submit a bid that is higher than the bid of the designated winner, (2) a competitor submits a bid that is known to be too high to be accepted, or (3) a competitor submits a bid that contains special terms that are known to be unacceptable to the purchaser.

- Bid suppression: Bid-suppression schemes involve agreements among competitors in which one or more companies agree to refrain from bidding or to withdraw a previously submitted bid so that the designated winner's bid will be accepted.

- Bid rotation: In bid-rotation schemes, conspiring firms continue to bid, but they agree to take turns being the winning (i.e., lowest qualifying) bidder. The way in which bid-rotation agreements are implemented can vary

- Market allocation: Competitors carve up the market and agree not to compete for certain customers or in certain geographic areas.

¹ Research Fellow, Land & Housing Institute, 539-99 Expo-ro, Yuseong-gu, Daejeon City, 305-731 Korea, ssong@lh.or.kr (*Corresponding Author)

² Senior Research Fellow, Land & Housing Institute, 539-99 Expo-ro, Yuseong-gu, Daejeon City, 305-731 Korea, jdbang@lh.or.kr

³ Senior Research Fellow, Land & Housing Institute, 539-99 Expo-ro, Yuseong-gu, Daejeon City, 305-731 Korea, jrshon@lh.or.kr

⁴ Research Fellow, Land & Housing Institute, 539-99 Expo-ro, Yuseong-gu, Daejeon City, 305-731 Korea, gunhee@lh.or.kr

B. Current Status of Occurrence

In 2014, Korea Fair Trade Commission(KFTC) imposed 800 million USD over 18 bid-rigging cases. Most of the bid-rigging cases have been found in design-build projects. This caused by the fact that design-build method is vulnerable to a bid-rigging because only small number of large construction companies can participate and cartels are possible in both part, design and construction(Lee, 2006).

III. CAUSES OF BID-RIGGING

A. Overview

The causes and purposes of bid-rigging in construction procurement process are categorized into “bidder’s internal factors” around collusion and “the external factors” affecting business activities.

B. Bidders’ Internal Factors

1) *Pursuit of Profit*: As the constructing activities are segmented and specialized, the sustainability and growth of construction companies largely depend on how to award the projects with proper profits. Because there have been heavy competitions in most of the bidding opportunities of public construction services, the companies winning a project are with lower price or just fortunate. From the standpoint of bidders, the strategy would be preferred to expand profit by avoiding competition and increasing award possibility with higher price. If possible, they make attempt to enhance chance to award and increase the price through bid-rigging.

2) *Moral Hazards*: Traditionally, the bid-rigging was executed in the name of “self-adjustment” or “general practice”. The moral hazards and lack of corporate social responsibility are still rampant in construction industry.

C. External factors

1) *Shifts of Construction Business environment*: Overall volume of construction industry has been slowly contracted. Subsequently, the financial and organizational burden has been added to the firms. This makes the bidders more easily tempted into the bid-rigging.

2) *Institutional Inadequacy*: ① The criteria of selecting contractors include both price evaluation and capability evaluation method. But, price is still the key factor in award, and the favorable environment to a few bidders could be easily created by the manipulation of price. ② In case of large scaled design-build projects, the number of bidders(or consortiums) is generally below five, and that causes frequent bid-rigging.

3) *Incapability of Public Owners*: The continuous detection, tracking, and punishment could minimize the future attempt for bid-rigging. Current efforts of public owners to reduce it are insufficient. The owners well aware of industry's circumstances agree with the allocation of contracts, and are not positive in preventing and detecting bid-rigging cases.

IV. SUGGESTIONS FOR DETECTION SYSTEM OF BID-RIGGING

A. Overall Requirement

To prevent bid-rigging in advance, three requirement should be fulfilled: benchmarking; better tender design; and tougher law enforcement. Firstly, the government agencies should review the enough source of best practices around the world. The OECD, World Bank, and other advanced countries can provide the successful cases in prevention. Secondly, the procurement agency and the specialists should design procurement process better to reduce bid-rigging effectively. Lastly, the detection method and legal enforcement should be set in case it occurs.

B. Components of Detection system

The components of detection system are as follows.

1) *Information Systems*: Information systems are essential in sharing information among public owners, and processing massive data of each tender with historical data according to the criteria. The database should be established in a fashion enabling to analyze the patterns of specific company, project, region, or site condition and identify whether there is a possible bid-rigging.

2) *Detection Criteria and Process for Suspicious bids*: The criteria in detecting suspicious bids and help judging them as bid-rigging should be prepared. They are composed of qualitative and quantitative ones with the support of data analysis. In addition, the criteria and checklists are provided according to the bid type such as design-build, lowest tender system, etc. with process below.

- Check the prices: Identify significantly higher prices, identical or similar prices.
- Check the bidders: Review the number of bidders(few bidders or no tender).
- Check the patterns: Analyze bidder's characteristics synthetically considering historical bid prices, consortium companies, regions, detailed pricing method, contents of technical proposal, etc.
- Listen to the whistle-blower.

V. CONCLUSIONS

The procurement system enabling to screen bid-rigging in public construction tenders may contribute to eradicating collusion and improving the industrial image among people. In addition, the construction companies, are required to change the recognition on competition and award while the public owners amending the regulation and setting a solid foundation for fair competition.

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