



**Tools to detect bid-rigging in public area, Korea :
BRIAS & cooperation with procurement bodies**

- Focusing on recent improvements on BRIAS -

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Contents

1. **Overview : Public procurement environments in korea**
2. **Backgrounds of establishing BRIAS**
3. **History of BRIAS**
4. **Reviewing BRIAS 1.0**
5. **Upgrading to BRIAS 2.0**

Gross amount

- 100 billion US\$ in 2015

Central procurement body

- **P**ublic **P**rocurement **S**ervice
- a mix of centralized and decentralized procurement
- The portion of PPS is about 30%

E-procurement

- almost all bids in public area
Processed on electronic system
- all bids info saved in DB

Similarities of bidding method

- little differences among procurement bodies, especially in the way winning bidders are determined.

Common use of e-bid system

- **Introduced since the early 2000s / The system of PPS established in 2002**
- **22 procurement bodies including PPS have their own electronic systems**
 - Transaction volumes through PPS's system make up about 60% of all
- **Those who do not have e-bid systems use PPS's system in common**
 - The portion of e-procurement in public area is estimated to be more than 90%
- **A well-equipped IT infra was one of the key foundation for BRIAS**
 - Without IT infra in procurement area, we cannot receive a huge amount of bid info automatically

Similarities of bidding method

- Every Procurement body(central gov, local gov, state-owned company, etc.) has its own regulation concerning procurement.
- Among them, no significant difference in bidding method :
how to determine a winning bidder according to the types of bids
 - In Korea, all the public procurement bodies except those owning e-bid systems are using PPS's e-system. It is impossible without 'similarities'
- So, a set of analysis indicators can be applied to a certain type of bid regardless of procurement bodies
 - It leads to much burden and high analysis cost that we have to make each set of indicators considering each procurement bodies .

2 Backgrounds of establishing BRIAS

1 Common use of e-bid system in public procurement area

- Possible to transfer bid data on line → lowering cost of exchanging info to near zero
- A key foundation for BRIAS
- Manual bid info reporting is too much burden for procurement officials

2 Similarities of bidding methods among procurement bodies

- the burden of KFTC is decreased because it is possible to evaluate the rigging possibility through a set of indicators if the types of bids are the same regardless of procurement bodies

3 Regulation formulated for BRIAS

- In 2007, legal ground was made and procurement bodies' reporting of bids info to KFTC became mandatory

3 History of BRIAS



- Established / Using only one set of indicators
- Linked to only PPS's e-bid system



- Linked to 4 more procurement bodies' e-bid systems



- Linked to 7 more procurement bodies' e-bid systems additionally



- Diagnosed and solved problems with BRIAS 1.0
- Reformed BRIAS 1.0 extensively

BRIAS 1.0

BRIAS 2.0

4 Reviewing BRIAS 1.0

Overview

- Established in 2006 / cost 300,000 US\$
- Evaluated bid-rigging possibility of bids individually, using only one set of four indicators, regardless of the types of bids / no further steps for analysis
 - (indicators) ① Winning bid to budget ratio, ② Number of bidders, ③ forms of bidding
④ Number of bidders over budget
- Expressed bid-rigging possibility numerically /
Suspected of bid-rigging over gross score 85 points out of 100
 - (logic) ① Winning bid to budget ratio ↑ · ② Number of bidders ↓ · ③ forms of bidding (restriction ↑) ·
④ Number of bidders over budget ↑ → score ↑ → possibility of bid-rigging ↑

4 Reviewing BRIAS 1.0

Processing

**bid
outcome**

- ① Winning bid to budget ratio : 95.8%
- ② Number of bidders : 5 bidders
- ③ Form of bidding : appoint competitive tender
- ④ Number of bidders over budget : 1 bidders

BRIAS 1.0 Processing

Indicator	Score	Weight	Score × Weight
①	30	0.9	27
②	20	0.8	16
③	30	1.0	30
④	20	0.8	16
Total Score			89

4 Reviewing BRIAS 1.0

Drawbacks

- **Indicators not suitable to evaluate all the types of bids**
 - we found that sets of indicators have to be different according to the types of bids (whether price or value is more important to determine a winning bidder)
 - But, BRIAS 1.0 used only one set of indicators, not considering the types of bids
 - For example, the possibility of bid-rigging was often overestimated in many bids where a successful bidder was determined mainly by value
- **The more info, the less useful**
 - In BRIAS 1.0, emerged more than 1,000 bids over 85 point every year
 - More than 1,000 a year was too much info for us to decide what to investigate or target
 - It's mainly because of no further analysis following numerical evaluating

5 Upgrading to BRIAS 2.0

Steps taken for BRIAS 2.0

- 1. Conducting a study on all the KFTC-sanctioned cases against bid-rigging from 2010 to 2014**
.....
- 2. Conducting another study to compare the outcome of the bids sanctioned and that of the bids placed by PPS from 2013 to 2014**
.....
- 3. Establishing new sets of indicators according to the types of bids, reflecting differences between the sanctioned bids and the pps-placed bids**
.....
- 4. Adding a further step of analysis following numerical evaluating, in the lowest bid where the price is a key factor to determine a winner**
.....

Conclusions from studies

The indicators of BRIAS 1.0 are suitable only to the lowest bid

- Studies show especially two indicators used in BRIAS 1.0 are very useful to evaluate bid-rigging possibility in the lowest bid**

< Comparison between the sanctioned and the PPS-placed in the lowest bid >

Indicator	Average of the bids sanctioned	Average of The pps-placed bids
Winning bid to budget ratio	97.1%	88.8%
Number of bidders	4.3	61.3

5 Upgrading to BRIAS 2.0

Conclusions from studies

New indicators are needed to evaluate a certain type of biddings like the turn-key bid

- In the turn-key bid in construction where a winner is determined considering both technical assessment and price, two types of collusions emerge
- One is price-fixing for avoiding price competition to raise a winning bid, and the other is playing a supporting role for a certain bidder to win
- In case of fix-pricing, the most distinguishing indicator is 'very slight gap' among bids, which BRIAS 1.0 didn't have

5 Upgrading to BRIAS 2.0

Conclusions from studies

In the lowest bid, The data of BRIAS 1.0 only telling the rigging possibility of individual bids is not very useful

- **The data about only individual bids in BRIAS 1.0 is not much helpful because suspected bids are too much to decide what to target and one individual bid over 85 is not a decisive clue to set out an investigation**
- **So, we had to come up with a new method of analysis to narrow the targets and raise the reliability of BRIAS data as a clue enough to start investigation**

Conclusions from studies

**Not all types of bids can be monitored by BRIAS.
We need to enhance cooperation with procurement bodies**

- For example, in case of contract by negotiation in IT infra, studies etc. where technical proposal assessment plays a absolutely crucial role in determining a winner, any quantitative indicator for bid-rigging analysis is not shown
- Only qualitative indicators related to technical proposal assessment are shown and such qualitative indicators cannot be transferred automatically
- So actions are needed to encourage procurement bodies to monitor bid-rigging using their specialty

5 Upgrading to BRIAS 2.0

Conclusions from studies

**Not all types of bids can be monitored by BRIAS.
We need to enhance cooperation with procurement bodies**

<Comparison between the sanctioned and the PPS-placed in contract by negotiation>

Indicator	Average of the bids sanctioned	Average of The pps-placed bids
Winning bid to budget ratio	94.5%	95.8%
Number of bidders	2.0	3.2

Actions to improve

1. Establishing new sets of indicators considering the types of bids and collusions

Price	Types of bids		Indicators
	Lowest bid	① Winning bid to budget ratio ② Number of bidders ③ Form of bidding	+ Bidding history analysis
	Turn-key bid	(type1 : price-fixing) ① Winning bid to budget ratio ② very slight gap among bids (type2 : a supporting role) ① Winning bid to budget ratio ② Large gap among technical assessments	"qualitative indicators needed more"
	Contract by negotiation	<u>Quantitative indicators not shown</u>	"procurement bodies' monitoring needed"
Value (Technical)			

5 Upgrading to BRIAS 2.0

Actions to improve

2. Adding bidding history analysis following numerical evaluating in the lowest bid

- We adopted bidding history analysis to solve problems BRIAS 1.0 had : too many suspected bids not to be targeted and deficiency of reliability as a clue
- In bidding analysis history, we narrowed targets by classifying all bids into certain categories of product markets using procurement bodies' product codes
 - Product codes are used in every procedure of procurement : the registration of supplies for e-bid systems, the notice of tender by buyer, the report of statistics of purchase record etc.
- And analyzed possibilities of all bids categorized into each product markets, in a certain period of time to raise the reliability of data

5 Upgrading to BRIAS 2.0

Actions to improve

2. Adding bidding history analysis following numerical evaluating in the lowest bid

- We lowered the standard of bids we gathered from over 500,000US\$ to over 100,000US\$ to get rid of 'iceberg effect'

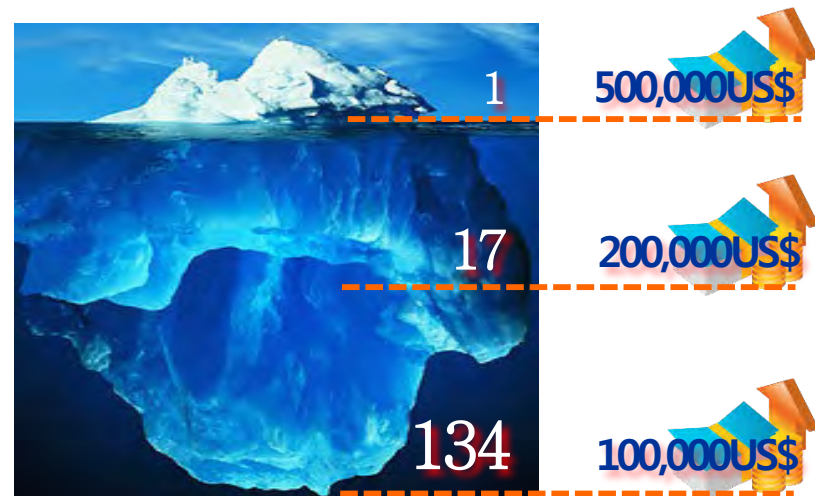
Out of all the bids

over 500,000US\$ is about 4%

over 200,000US\$ is about 10%

Over 100,000US\$...about 20%

< bids over 85 in 'A' product market >



- Based on the analysis of all the bids(about 250,000) from January 2013 to June 2016

5 Upgrading to BRIAS 2.0

Actions to improve

2. Adding bidding history analysis following numerical evaluating in the lowest bid
 - Using numerical evaluating and bidding history analysis, we have periodically assessed bid-rigging possibility of all product markets in a specific period
 - we have managed the list of the suspected product markets where bids over 85 occur repeatedly and used the list for the basic data of investigation
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5 Upgrading to BRIAS 2.0

Actions to improve

3. Strengthening cooperation with procurement bodies

- We're trying to enhance procurement bodies' capability to detect bid-rigging
 - In 2014, we formed a consultative group consisted of KFTC and 22 procurement bodies owning e-bid systems and have held a meeting twice a year
 - Especially, we promote mutual understanding and encouraging them to adopt their own monitoring systems like BRIAS
- Currently 8 bodies out of 22 are operating monitoring systems. It's very desirable in that the zone out of surveillance might be reduced by monitoring the types of bids BRIAS cannot cover perfectly

5 Upgrading to BRIAS 2.0

Achievement

- **Producing some considerable results in a short time**
 - Raising the accuracy of analysis by establishing sets of indicators considering the types of bids and collusions
 - Making it possible to view that how bid-rigging possibility in a certain product market has changed over a specific period of time
 - Some investigation launched recently on the basis of BRIAS 2.0 data, were done successfully



Thank you for your attention

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